San Diego State University
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### 1980-81 Academic Calendar

#### Summer Sessions, 1980
- **May 26**
- **June 2-June 20**
- **July 4**
- **June 23-August 1**
- **August 4-August 22**
- **June 23-July 25**
- **August 4-August 22**

#### Fall Semester, 1980
- **August 1**

#### Spring Semester, 1981
- **August 1**

### Summer Sessions, 1981
- **May 25**
- **June 1-19**
- **July 4**
- **June 22-July 31**
- **June 22-July 24**
- **August 3-21**
- **June 1-July 10**

---

**Applications for admission or readmission to San Diego State University for the spring semester 1981 accepted. Applications are accepted after August 31 only until enrollment quotas are met.**

Mathematics placement examinations for students planning to enroll in Mathematics 104, 119, 120, 121, 140, 150; or Economics 201.

Reading Comprehension Test for admission to elementary or secondary education.

Schedule Adjustment Days/Walk-Through Registration.

First day, second semester.

Department work day.

First day of classes.

Check with Department of Elementary Education for applications dates and deadlines for Multiple Subjects Credential Program.

Last day to apply for refunds.

Last day to withdraw from class or change program.

Spring recess.

Classes resume.

Last day of classes before final examinations.

Study and consultation day.

Final examinations.

Commencement.

Holiday—Memorial Day.

Grades due.

Last day of spring semester.

Last day to apply for a leave of absence for fall semester.

---

**Holiday—Memorial Day.**

**Term A (3 weeks).**

**Holiday—Independence Day.**

**Term B (6 weeks).**

**Term C (5 weeks).**

**Term D (3 weeks).**

**Term E (6 weeks).**
Schedule of Fees

Fees are subject to change by the Trustees of the California State University and Colleges.

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 MAY BE CANCELED AND YOU WILL BE BILLED $10.00.)

Fees for Student Services—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.

- Tuition for Nonresident Student (Foreign and Domestic)

  (In addition to student services and activity fees.)
  - Nonresident student enrolled for 15 units or more
  - Nonresident student enrolled for less than 15 units or fraction thereof—per unit
  - Health insurance (mandatory for foreign students)
  - Health insurance (student participating in courses for credit)
  - Health insurance for nonresident students not otherwise insured
  - Health insurance (Student participating in courses for credit)
  - Health insurance for nonresident students not otherwise insured

  per year, approximately $125.00

  for Student Services—All Students:
  - Application for admission or readmission (nonrefundable)
  - Late registration (Refer to Class Schedule for dates when this fee will be assessed)
  - Failure to meet administratively required appointment or time limit
  - Photo-identification Card (One-time cost to both new undergraduate and graduate students at time of registration)
  - Lost Identification Cards/Stickers
  - Card only
  - Registration sticker only
  - Card and sticker
  - Transcript of record
  - R.O.T.C. deposit (Unexpended portion is refundable)
  - Check or charge slip returned for any cause
  - Loss of or damage to library materials
  - Replacement cost plus $5.85 service charge per unit
  - Graduation fee
  - Credential fee

  $97.00
  $112.00
  Health insurance (student participating in courses for credit)
  $22.00
  Health insurance (student participating in courses for credit)
  $72.00
  Health insurance for nonresident students not otherwise insured
  $72.00
  Health insurance for nonresident students not otherwise insured
  $72.00
  Health insurance for nonresident students not otherwise insured
  $72.00
  Health insurance for nonresident students not otherwise insured
  $72.00
  Health insurance for nonresident students not otherwise insured
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  Health insurance for nonresident students not otherwise insured
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  Health insurance for nonresident students not otherwise insured
  $72.00
  Health insurance for nonresident students not otherwise insured
  $72.00
  Health insurance for nonresident students not otherwise insured

  $125.00
  $25.00
  $5.00
  $5.00
  $4.00
  $2.00
  $2.00
  $2.00
  $4.00
  $4.00
  $10.00
  $10.00
  $10.00

  $6.00
  $30.00

MASTER CHARGE / VISA CARDS

Acceptable for payment of fees.

REGULAR SESSION FEE REFUNDS

Fees may be refunded only as authorized by Sections 41802, 41803, and 41913 of Title 5, California Administrative Code and other pertinent provisions of law. Whether a fee may be refunded, and the circumstances under which a fee or any part of a fee may be refunded, may vary depending on the particular fee involved. Requirements governing refund may include such matters as the reason for seeking a refund (for example, requests for refund of student services fees, student body organization fees, and student body center fees must be made no later than 14 days following the commencement of instruction and requests for refund of extension course tuition must be made prior to the fourth meeting of the class), and the degree to which the campus has provided the services for which the fee has been charged. Details concerning the fees which may be refunded, the circumstances under which fees may be refunded, and the appropriate procedure to be followed in seeking a refund may be obtained from the campus' Office of Business Services.

Refund of Student Services Fees

To be eligible for refund of student services fees, a student withdrawing from the university must obtain a withdrawal card from the Registrar's Office and file a refund application with the Cashier's Office, CL-108, no later than 14 days following the commencement of instruction. All but $5.00 will be refunded. A student withdrawing from more than six units to six units or less must file an application with the Cashier's Office no later than 14 days following the day the academic term begins. The amount of $5.00 shall be retained. An automatic billing will be mailed to the student reflecting added units—see Class Schedule for deadline dates. For additional information contact the Cashier's Office or telephone 265-5253.

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 Cashier's Office within the following time limits:

- Time Limit
- Amount of Refund

  (1) Before or during the first week of the semester
  100 percent of fee
  90 percent of fee
  70 percent of fee
  50 percent of fee
  30 percent of fee
  20 percent of fee

Refund of Parking Fees

This schedule of refunds refers to calendar days, commencing on the date of the term when instruction begins.

- Nonresident space per semester

- Period

- Amount of Refund

  1 - 30 days
  31 - 60 days
  61 - 90 days
  91 - end of term

  75 percent of fee
  50 percent of fee
  25 percent of fee
  None

For a refund, the parking sticker must be returned to the vehicle by a University Police Officer. The refund application is obtained from the Cashier's Office, CL-108.

The late registration fee is not refundable. The Cashier's Office should be consulted for further details.

SUMMER SESSION FEES

Tuition and Fees (per unit) $47.00
Parking Fees (nonresident spaces):
- Entire summer period
- Five- and six-week terms
- Five-week terms

EXTENSION COURSE FEES

Lecture or discussion course (per unit) $39.00

EXEMPTIONS

Students under Public Law 894, 87-B15, 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 California residents and who were killed in the course of law enforcement or fire suppression duties are not charged fees or tuition of any kind at any California State University or College, according to the Alan Pattee Scholarship Act, Education Code Section 68121. Students qualifying for these benefits are known as Alan Pattee scholars. For further information, contact the Admissions/Registrar's Office, which determines eligibility.

STUDENT SERVICES FEE

A Student Services Fee was established by the Board of Trustees of The California State University and Colleges in January 1975. Previously, this fee was known as the Materials and Service Fee.

The student services fee provides financing for the following student services programs not covered by state funding:

1. Social and Cultural Development Activities: provides for the coordination of various student activities, student organizations, student government and cultural programs.
2. Counseling: includes the cost of counselors' salaries and clerical support plus operating expenses and equipment.
3. Testing: covers the cost of test officers, psychometrists, clerical support, operating expenses and equipment.
4. Placement: provides career information to students and faculty for academic program planning and employment information to graduates and students.
5. Financial Aid Administration: includes the cost of the counseling and business services provided in connection with the financial aid programs.
6. Health Services: provides health services to students and covers the cost of salaries of medical officers and nurses plus related clerical and technical personnel as well as operating expenses and equipment.
7. Housing: includes the cost of personnel providing housing information and monitoring housing services provided to students.
8. Student Services Administration: covers 50 percent of the cost of the Dean of Students Office which has responsibility for the overall administration of student services.

Procedure for the Establishment of a Student Activity Fee

The law governing The California State University and Colleges provides that a student activity fee, not to exceed $20 per academic year, 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 20 percent of the regularly enrolled students. (Education Code, Section 89300.) The level of the fee is set by the Chancellor upon recommendation by the campus. Student activity fees support a variety of cultural and recreational programs, childcare 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 does not owe all or part of an unpaid obligation, the student should contact the campus Cashiers Office. 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 the student may wish to present, and will advise the student of its conclusions with respect to the debt.
The California State University and Colleges

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. Today, 16 of the 19 campuses have the title "University." The oldest campus—San Jose State University—was founded 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 and Colleges 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. The Academic Senate of The California State University and Colleges, made up of elected representatives of the faculty from each campus, recommends academic policy to the Board of Trustees through the Chancellor.

Academic excellence has been achieved by The California State University and Colleges through a distinguished faculty, whose primary responsibility is superior teaching. While each campus in the system has its own unique geographic and curricular character, all campuses, as multipurpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All of the campuses require for graduation a basic program of "General Education—Breadth Requirements" regardless of the type of bachelor's degree or major field selected by the student. The CSUC offers more than 1,400 bachelor's and master's degree programs in some 200 subject areas. Approximately 350 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 addition, a variety of teaching and school service credential programs are available. A limited number of doctoral degrees are offered jointly with the University of California and with private universities in California.

The Consortium of the CSUC draws on 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 impossible to attend classes on a campus. In addition to Consortium programs, individual campuses also offer external degree programs.

Enrollments in fall 1979 totaled approximately 300,000 students, who were taught by a faculty of 18,000. Last year the system awarded over 52 percent of the bachelor's degrees and 32 percent of the master's degrees granted in California. Almost 725,000 persons have been graduated from the nineteen campuses since 1960.
Average Annual Costs and Sources of Funds per Full-time Equivalent* Student in The California State University and Colleges

The 19 campuses and the Chancellor's Office of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. Including capital outlay, the CSUC 1979/80 budget totals $970 million. Approximately $950 million of capital outlay (e.g., building amortization), the average cost per FTE student is $4,138 per year. Of this amount, the average student pays $333. Included in this average student payment calculation is the amount paid by nonresident students. The remaining $3,805 in costs is funded by state and federal taxes.

Averages do not fit all students alike or even any specific student. To arrive at an average figure that is meaningful, the costs outlined above exclude "user fees" for living expenses, are based on full-time equivalent students, not individuals, and costs are prorated by campus. The average costs for a full-time equivalent student in the system are depicted in the following chart:

Total 1979/80 CSUC Budget (Projected Enrollment: 229,350 FTE)

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount</th>
<th>Average Cost Per Student (FTE)*</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Appropriation (Support)</td>
<td>$819,474,471</td>
<td>$3,573</td>
<td>86.3</td>
</tr>
<tr>
<td>Student Charges</td>
<td>76,481,258</td>
<td>333**</td>
<td>8.1</td>
</tr>
<tr>
<td>Federal (Financial Aids)</td>
<td>53,241,128</td>
<td>232</td>
<td>5.6</td>
</tr>
<tr>
<td>State Funding (Capital Outlay)</td>
<td>21,083,400</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Total</td>
<td>$970,260,257</td>
<td>$4,138</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* For budgetary purposes, full-time equivalent (FTE) translates total head count into total academic student load. The term assumes that a full-time student in The California State University and Colleges is enrolled for 15 units of academic credit. Some students enrol for more than 15 units; some students enrol for fewer than 15 units.

** The average costs paid by a student include the student services fee, health facilities fee, college union fee, student body fee, and the nonresident tuition. This amount is derived by taking the total of all student fees and dividing by the number of student members. Full-time, part-time, resident, or nonresident students may pay more or less than $333 depending on whether they are part-time, full-time, resident or nonresident students.

Trustees of The California State University and Colleges

<table>
<thead>
<tr>
<th>Ex Officio Trustees</th>
<th>State Capitol</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Hon. Edmund G. Brown Jr.</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>Governor of California</td>
<td></td>
</tr>
<tr>
<td>The Hon. Mike Curb</td>
<td>State Capitol</td>
</tr>
<tr>
<td>Lieutenant Governor of California</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>The Hon. Leo McCarthy</td>
<td>State Capitol</td>
</tr>
<tr>
<td>Speaker of the Assembly</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>The Hon. Wilson C. Riles</td>
<td>State Superintendent of Public Instruction</td>
</tr>
<tr>
<td>State Capitol Mall</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>Dr. Glenn S. Dumke</td>
<td>400 Golden Shore</td>
</tr>
<tr>
<td>Chancellor of The California State University and Colleges</td>
<td>Long Beach 90802</td>
</tr>
</tbody>
</table>

Appointed Trustees

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

Mr. Charles Luckman (1982) 9220 Sunset Blvd, Los Angeles 90069
Mr. Roy T. Brophy (1980) 2160 Royale Rd, Suite 20, Sacramento 95815
Mrs. C. Stewart Ritchie (1980) 1064 Creek Dr, Menlo Park 94025
Mr. Frank F. Adams (1981) 235 Montgomery St, Suite 1045, San Francisco 94104
Mr. Dean S. Lester (1981) P.O. Box 5166, Walnut Creek 94598
Dr. Claudia H. Hampton (1982) 450 N. Grand, Rm. G353, Los Angeles 90012
Dr. Mary Jean Pew (1982) 2021 N. Western Ave., Los Angeles 90027
Dr. Willis J. Stennis (1983) 3947 Landmark, Culver City 90230
Dr. Juan Gomez-Quinones (1984) 9146 Union, Suite 3, San Diego 92101
Mr. Jason E. Peltier (1981) 9123 W. Lilac Rd., Bonsall 92003

* For budgetary purposes, full-time equivalent (FTE) translates total head count into total academic student load. The term assumes that a full-time student in The California State University and Colleges is enrolled for 15 units of academic credit. Some students enrol for more than 15 units; some students enrol for fewer than 15 units.

** The average costs paid by a student include the student services fee, health facilities fee, college union fee, student body fee, and the nonresident tuition. This amount is derived by taking the total of all student fees and dividing by the number of student members. Full-time, part-time, resident, or nonresident students may pay more or less than $333 depending on whether they are part-time, full-time, resident or nonresident students.

Not included in the Average Cost Per Student (FTE) and Percentage columns. The estimated replacement cost of all the system's permanent facilities and equipment on the 19 campuses is currently valued at $2.66 billion, excluding the cost of land.
## The California State University and Colleges

<table>
<thead>
<tr>
<th>College</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>California State College, Bakersfield</td>
<td>9001 Stockdale Highway, Bakersfield, California 93309</td>
<td>(805) 833-2011</td>
</tr>
<tr>
<td>California State University, Chico</td>
<td>1st &amp; Normal Streets, Chico, California 95929</td>
<td>(916) 895-5011</td>
</tr>
<tr>
<td>California State University, Dominguez Hills</td>
<td>Carson, California 90747</td>
<td>(213) 515-3300</td>
</tr>
<tr>
<td>California State University, Fresno</td>
<td>Shaw and Cedar Avenues, Fresno, California 93740</td>
<td>(209) 487-9011</td>
</tr>
<tr>
<td>California State University, Fullerton</td>
<td>Fullerton, California 92634</td>
<td>(714) 773-2011</td>
</tr>
<tr>
<td>California State University, Hayward</td>
<td>25500 Carlos Bee Boulevard, Hayward, California 9542</td>
<td>(415) 881-3000</td>
</tr>
<tr>
<td>Humboldt State University</td>
<td>Arcata, California 95521</td>
<td>(707) 826-3011</td>
</tr>
<tr>
<td>California State University, Long Beach</td>
<td>1250 Bellflower Boulevard, Long Beach, California 90840</td>
<td>(213) 498-4111</td>
</tr>
<tr>
<td>California State University, Los Angeles</td>
<td>5151 State University Drive, Los Angeles, California 90032</td>
<td>(213) 224-0111</td>
</tr>
<tr>
<td>California State University, Northridge</td>
<td>18111 Nordhoff Street, Northridge, California 91330</td>
<td>(213) 885-1200</td>
</tr>
<tr>
<td>California State Polytechnic University, Pomona</td>
<td>3801 West Temple Avenue, Pomona, California 91768</td>
<td>(714) 598-4592</td>
</tr>
<tr>
<td>California State University, Sacramento</td>
<td>6000 J Street, Sacramento, California 95819</td>
<td>(916) 454-6011</td>
</tr>
<tr>
<td>California State College, San Bernardino</td>
<td>5500 State College Parkway, San Bernardino, California 92407</td>
<td>(714) 887-7201</td>
</tr>
<tr>
<td>San Diego State University</td>
<td>5300 Campanile Drive, San Diego, California 92182</td>
<td>(714) 265-5000</td>
</tr>
<tr>
<td>San Francisco State University</td>
<td>1600 Holloway Avenue, San Francisco, California 94132</td>
<td>(415) 469-2141</td>
</tr>
<tr>
<td>San Jose State University</td>
<td>125 South Seventh Street, San Jose, California 95122</td>
<td>(408) 277-2000</td>
</tr>
<tr>
<td>California Polytechnic University, San Luis Obispo</td>
<td>1801 East Cotati Avenue, Rohnert Park, California 94928</td>
<td>(707) 664-2880</td>
</tr>
<tr>
<td>Sonoma State College</td>
<td>1800 East Cotati Avenue, Rohnert Park, California 94928</td>
<td>(707) 664-2880</td>
</tr>
<tr>
<td>California State College, Stanislaus</td>
<td>800 Monte Vista Avenue, Turlock, California 95380</td>
<td>(209) 633-2122</td>
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## Office of the Chancellor

### The California State University and Colleges

**400 Golden Shore**
**Long Beach, California 90802**
**Telephone: (213) 590-5506**

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
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<tbody>
<tr>
<td>Chancellor</td>
<td>Dr. Glenn S. Dumke</td>
</tr>
<tr>
<td>Executive Vice Chancellor</td>
<td>Mr. Harry Harmon</td>
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<tr>
<td>Vice Chancellor, Academic Affairs</td>
<td>Mr. D. Dale Harmer</td>
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<td>Vice Chancellor, Business Affairs</td>
<td>Dr. Alex C. Sherriffs</td>
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<tr>
<td>Vice Chancellor, Faculty and Staff Affairs</td>
<td>Dr. Marjorie Downing Wagner</td>
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<tr>
<td>General Counsel</td>
<td>Mr. Mayer Chapman</td>
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## San Diego State University Advisory Board

<table>
<thead>
<tr>
<th>Name</th>
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<tr>
<td>Robert K. Cleator</td>
<td>Chairman</td>
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<tr>
<td>Howard L. Chernoff</td>
<td>Vice Chairman</td>
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<tr>
<td>Manuel Barba, M.D.</td>
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<td>Margarita Ignacia Carmona</td>
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<td>Ron L. Fowler</td>
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<td>Kenneth N. Golden</td>
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<td>Leroy A. Grissom</td>
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<td>Jewell D. Hooper</td>
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<td>Yvonne W. Larsen</td>
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<td>Leon W. Parma</td>
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## Associate Members

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<tr>
<th>Name</th>
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<tr>
<td>Mrs. Dorothy Leonard</td>
<td>President, Ninth District, California Congress of Parents and Teachers, Inc.</td>
</tr>
<tr>
<td>Mrs. Florence E. Young</td>
<td>President, San Diego Branch, American Association of University Women</td>
</tr>
<tr>
<td>Mr. Don Harrington</td>
<td>President, San Diego State University Alumni and Associates</td>
</tr>
<tr>
<td>James B. Kuhn</td>
<td>President, San Diego State University Aztec Athletic Foundation</td>
</tr>
</tbody>
</table>
Principal Officers of Administration

President of the University

Tommaso B. Day

Vice President for Academic Affairs

Albert W. Johnson

Dean of Student Affairs

William E. Erickson

Director of University Affairs

Daniel B. Nowak

Paul J. Stern

Administration

Office of the President

Executive Assistant to the President

Administrative Assistant

Coordinators of Affirmative Action

Office of the Vice President for Academic Affairs

Associate Vice President for Academic Affairs

Director, Campus Information Systems

Dean of Faculty Affairs

Dean of Academic Computing and Planning

Associate Dean, Academic Services

Dean of the College of Extended Studies

Director of Learning Resource Center

University Librarian

Chair of the Senate

Office of the Vice President for Business and Financial Affairs

Assistant to the Vice President

Director of Business Affairs

Director of Personnel Services

Director of Financial Management

Director of Facilities Planning and Management

Director of Public Safety

Director of Environmental Health and Research Safety

Office of the Dean of Student Affairs

Associate Dean

Assistant to the Dean

Ombudsman

Judicial Coordinator

Director of Disabled Student Services

Director of Student Resources and Information Center

Director of Admissions and Records

Director of Relations with Schools and Colleges

Director of Educational Opportunity and Minority Programs

Director of Veterans Affairs

Director of Center for Counseling Services and Placement

General Counsel of International Students

Director of Health Services

Director of Housing and Residential Life

Director of Auxiliary Services

General Manager, KPBI-TV-FM

Assistant to the Director

Director of Alumni and Development

University Editor

Design Manager

Director of Interscholastic Athletics

Director of Aztec Athletic Foundation

Auxiliary Organizations

San Diego State University Foundation

President

Thomas B. Day

Vice President

James W. Cobble

Manager

Harry R. Albers

The Associated Students of San Diego State University

President

Harvey J. Goodfriend

Manager

Rob DeKoven

Harvey J. Goodfriend

Colleges, Schools, Departments and Programs

College of Arts and Letters

Chair: Frank Marini, Dean

Associate Dean: Robert Detweiler

Assistant Dean for Student Affairs & Special Instructional Programs: Donald D. Basile

Chair: Shirley Weber

American Indian Studies: John Rufford

Anthropology: Larry L. Leach

Classical and Oriental Languages and Literature: E. N. Genovese

Economics: Dean O. Popp

English and Comparative Literature: Dan McLeod

French and Italian Languages and Literature: Elizabeth Jackson

Geography: Ernst Griffin

Germanic and Slavic Languages and Literature: Ludek Kozlik

History: Philip Flemion

Linguistics: Robert Underhill (Acting)

Mexican-American Studies: Ricardo Griswold del Castillo

Philosophy: William Snyder

Political Science: Betty Neswold

Religious Studies: Christine Downing

Sociology: John Weeks

Spanish and Portuguese Languages and Literature: Ben Christensen

Study Skills Center: Donald Basile

Women's Studies Program: Marilyn Boxer

College of Business Administration

Chair: Allan Bailey, Acting Dean

Associate Dean: Maurice L. Crawford

Associate Dean for Graduate Studies: William F. Barber

Assistant Dean for Student Affairs: Penny L. Wright

School of Accountancy: Kevin Lightner

Finance: Peter A. Vandenberg

Information Systems: Norman Sondak

Management: James R. Beatty

Marketing: Don Lindgren

College of Education

Chair: Tomas A. Arciniega, Dean

Associate Dean: Robert R. Nardelli

Assistant Dean for Student Affairs: Jaime Lujan

Chair, Clinical Training Center: Joan F. Curry

Coordinator, Counselor Education: Emerly Cummins

Coordinator, Educational Administration: Ray Latta

Coordinator, Educational Technology and Librarianship: Patrick J. Harrison

Coordinator, Elementary Education: James M. Keats

Coordinator, Multicultural Education: Henry Trueba

Coordinator, Graduate Programs: Peggy Hawley

Coordinator, Higher Education Prog & Health Services Credential: Doris Meek

Coordinator, Secondary Education: John G. McElvien

Coordinator, Special Education: Donald Doorlag

College of Engineering

Chair: George T. Craig, Acting Dean

Assistant Dean for Student Affairs: G. Krishnamoorthy

Aerospace Engineering and Engineering Mechanics: J. F. Conly

Civil Engineering: Maria Noorany

Electrical and Computer Engineering: Mao-Shiu Lin

Mechanical Engineering: Robert Bedore (Acting)

College of Human Services

Chair: Harry Butler, Dean

Associate Dean: Adrian J. Korschinski

Assistant Dean for Student Affairs: E. Frederick Anderson

Communicative Disorders: Harriet G. Kopp
<table>
<thead>
<tr>
<th>COLLEGE OF PROFESSIONAL STUDIES AND FINE ARTS</th>
<th>Jerry Mandel, Dean</th>
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<tbody>
<tr>
<td>Associate Dean</td>
<td>George Hutchinson</td>
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<tr>
<td>Assistant Dean for Academic Affairs</td>
<td>Marilyn Hatcher</td>
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<td>Assistant Dean for Student Affairs</td>
<td>Fred Hammond</td>
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<tr>
<td>Coordinator of Physical Facilities</td>
<td>Richard L. Neal</td>
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<td>Aerospace Studies</td>
<td>Frederick J. Orth</td>
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<td>Art</td>
<td>Gene Bourdlet</td>
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<td>Athletics</td>
<td>Don W. Powell</td>
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<td>Drama</td>
<td>Gwen C. Cooke</td>
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<td>School of Family Studies and Consumer Sciences</td>
<td>Harold L. Marsters</td>
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<td>Industrial Studies</td>
<td>Lee M. Brown</td>
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<td>Journalism</td>
<td>Robert E. Brown</td>
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<td>Military Science</td>
<td>B. Robert Carlson</td>
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<td>Music</td>
<td>Stephen Roeder (Interim)</td>
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<td>Physical Education</td>
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<td>School of Public Administration and Urban Studies</td>
<td>Celia Marshak</td>
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<td>Recreation</td>
<td>Burt Nelson</td>
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<td>Speech Communication</td>
<td>Boyd Collier</td>
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<td>Telecommunications and Film</td>
<td>David Rayle</td>
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<td>COLLEGE OF SCIENCES</td>
<td>Patrick Abbott</td>
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<tr>
<td>Associate Dean</td>
<td>Stephen Roeder (Interim)</td>
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<td>Associate Dean</td>
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<td>Assistant Dean for Student Affairs</td>
<td>Harold B. Moore</td>
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<td>Biology</td>
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<td>Michael D. Atkins</td>
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<td>Zoology</td>
<td>John Grossberg</td>
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<tr>
<td>OFFICE OF THE DEAN OF THE GRADUATE DIVISION AND RESEARCH</td>
<td>Michael D. Atkins</td>
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<tr>
<td>Associate Dean</td>
<td>Bonnie Neumann, Dean</td>
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<tr>
<td>Associate Dean</td>
<td>Carole Rother</td>
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<tr>
<td>Assistant Dean</td>
<td>Charlotte Yesselman</td>
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<tr>
<td>OFFICE OF THE DEAN OF UNDERGRADUATE STUDIES</td>
<td>Linda McNally, Dean</td>
</tr>
<tr>
<td>Associate Dean</td>
<td>Charles Shull</td>
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<tr>
<td>Assistant Dean</td>
<td>Cynthia Flores</td>
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<td>IMPERIAL VALLEY CAMPUS</td>
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<td>Acting Associate Dean</td>
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<tr>
<td>Acting Assistant Dean for Student Affairs</td>
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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. Its 17-acre site, and a campaign was begun in the 1920s to build a new campus. 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 then, with the coming of war, of contraction. At the end of World War II, enrollment had fallen to 1918.

In the next quarter century, the college moved to the seven mission-style buildings of the present campus, surrounded by the old one. In 1928 the campus, on what was then the far eastern border of the city, was approved by the electorate.

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In the next quarter century, under Dr. Hepner and subsequently under Malcolm A. Love (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 Trustees and a Chancellor. In 1971, recognizing that the institution had in fact achieved the Colleges, and shortly afterward renamed this institution San Diego State University, and Acting President Donald E. Walker (1971-1972), President Brage Golding (1972-1977). Thomas B. Day (1977-1978) were followed by the sixth president of 80 years ago.

New buildings added in recent years include the Aztec Center, the first student union a Recital Hall, and the 307,000 square foot Malcolm A. Love Library, with its ample reading facilities. The new Health Services and Art and Humanities classroom buildings have the most recent additions to the campus physical plant.

The University now offers bachelor's degrees in 70 areas, the master's in 51, and the doctoral degree in 24. A remarkable 88 percent of the teaching faculty possess the doctorate in their fields.

Phi Beta Kappa was inaugurated at the University in 1974, joining Phi Kappa Phi and many other national honorary societies on campus.

Institutional and Financial Assistance Information

The following information concerning student financial assistance may be obtained from Thomas R. Pearson, Financial Aid, CL-122, 265-6326.

1. Student financial assistance programs available to students who enroll at San Diego State University;
2. The method 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; the requirement for accurately preparing such applications; and the review standards employed to make awards for student financial assistance; and
4. The rights and responsibilities of students receiving 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. Tuition fees;
2. Estimated costs of books and supplies;
3. Estimates of typical student room and board costs or typical community 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 Grant L. Nielsen, Controller, Business Affairs, AD-320D, 265-6301.

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, 265-6881.

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.

Career Placement Information

The campus will furnish, upon request, information concerning the subsequent employment of students who graduate from programs or courses of study which have the purpose of preparing students for a particular career field. This information includes data concerning average starting salary and the percentage of previously enrolled students who obtained employment. Interested prospective students may request copies of the published information from Joe Gasperetti, School Relations Officer, CL-109, 265-6966. The information provided may include data collected from either graduates of the campus or students of all campuses in The California State University and Colleges.

University Library

Librarians

Emeritus: Adams, Kinsey, McAmis, Murdock, Schalles, Szabo
University Librarian: Kenney
Assistant University Librarians: Leerhoff, Palsson
Collection Development Librarian: Dickinson, F.
Librarian: Pease
Assistant University Librarians: Barclay, Chan, Dintrone, Gwinup, Harrington, Hoover, Samples
Senior Assistant Librarians: Cargille, Coleman, Colston, Crisley, Fitt, Goodwin, Goyne, Granrud, Greene, Harkanyi, Johns, Martinez, Moore, Neydorff, Phillips, Posner, Sandeiiin, Shira, West
Assistant Librarians: Fikes, Lamb
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 three thousand reader stations and will ultimately accommodate over a million volumes.

The collection comprises 727,730 volumes including books and bound periodicals, and 10,520 linear feet of government documents. Additional resources include 1.4 million microforms and microopaque cards, 41,000 reels of microfilm, 7,000 college catalogs, 29,000 scientific reports, 3,700 phonograph records, 1,200 linear feet of curriculum materials and 1,500 linear feet of archival papers. The library receives 11,000 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 classic 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 Pacific Ocean invertebrates, tuna, and the geology of San Diego County and Baja California. The San Diego History Research Center's extensive archival collections from the San Diego area support original research. Special collections, among them many rare editions, include: science fiction, H.L. Mencken, ornithology, the history of science with emphasis on astronomy and botany, German culture and civilization.

The library provides general reference service and specialized service in business and the social sciences as well as 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 location information desk in the main lobby; current periodicals reading room, and microforms and newspaper center; inexpensive photocopying machines, including several for microfiche and microfilm; ditto machine and typing rooms with coin-operated electric and manual typewriters; coin-operated electronic calculators; listening equipment for cassettes, discs and open-reel tape; and a special facility for the visually handicapped.

**Faculty Office Hours**

All faculty members hold 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.

**National 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 for election students must ordinarily be enrolled in the College of Arts and Letters or the They must have completed work in university level mathematics and foreign languages. Election shall adhere to any student solely by reason of fulfillment of grade requirements. For further information, consult the Secretary of the chapter.

Phi Kappa Phi elects to membership qualified students in all disciplines but with a ten percent limit among graduating seniors and graduate students. A maximum of five percent of juniors may be invited to membership. The national society awards a number of fellowships annually to first-year graduate students in national competition. The SDSU chapter also grants an additional fellowship to a local candidate. Phi Kappa Phi publishes for its members a newsletter and the *National Forum*, a prestigious journal presenting articles in depth on serious and controversial issues.

There are over fifteen national honor societies, in addition, which accord recognition to students who demonstrate superior scholarship and leadership in specific academic fields.

**Accreditation**

San Diego State University's accreditation is validated through membership in the following associations:

- American Chemical Society
- American Speech and Hearing Association Educational Training Board
- California Commission for Teacher Preparation and Licensing
- Council on Education of the Deaf
- Council on Rehabilitation Education
- Council on Social Work Education
- National Association of Schools of Art
- National Association of Schools of Music
- National Association of Schools of Theatre
- National Council for Accreditation of Teacher Education
- National League for Nursing

San Diego State University is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges. It is also approved to train veterans under the G.I. Bill.

The College of Business Administration is accredited by the American Assembly of Collegiate Schools of Business. The clinical services area of speech pathology and audiology is accredited by the American Speech and Hearing Association Professional Services Board.

The College of Engineering undergraduate programs in aerospace, civil, electrical and mechanical engineering are accredited by the Accreditation Board for Engineering and Technology, Inc.

The School of Nursing is accredited by the California Board of Registered Nursing and National League for Nursing.

In addition, high quality preparation for many other professions is provided. It is suggested that the student refer to the various courses of study listed in the catalog. The bachelor's degree is offered in 70 areas, the master's degree in 51 areas, and the Ph.D. in four areas.

**Degrees and Certificates**

San Diego State University offers the following degrees and certificates:

- Bachelor of Arts
- Bachelor of Science
- Bachelor of Vocational Education
- Bachelor of Music
- Doctor of Philosophy in Chemistry
- Doctor of Philosophy in Ecology
- Doctor of Philosophy in Education
- Doctor of Philosophy in Genetics
- Doctor of Philosophy in Genetics
- Master of Arts
- Master of Science
- Master of Business Administration
- Master of City Planning
- Master of Fine Arts (Drama)
- Master of Public Administration
- Master of Social Work

Nondegree programs leading to the Certificate in Business Administration (IVC campus only), Applied Linguistics, Community College Administration, Human Services, Instructional Technology, Public Administration, and Spanish Translation and Interpretation are 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 Engineering offers the Bachelor of Science degree in engineering with majors in four fields; and the College of Education offers curricula in teacher education leading to graduate credentials at all levels of public school teaching.
(4) Preprofessional and nondegree curricula: Programs are offered in predentistry, prelegal, and premedical, leading to transfer to professional schools. Nondegree programs are offered in public service, leading to the Certificate in Criminal Justice Administration or commission in the Air Force Reserve.

Graduate Curricula. The Graduate Division offers curricula leading to the Master of Arts or Master of Science degree in a wide variety of fields, the Master of Business Administration, the Master of Fine Arts in Drama, and the Doctor of Philosophy in chemistry, ecology, education, and genetics.

Imperial Valley Campus, Calexico

Faculty
Emeritus: Rodney, Spencer
Dean: McAlister
Acting Associate Dean: Shull
Acting Assistant Dean for Student Affairs: Flores
Director of Library and Media Services: Lovely
Professors: Baldwin, McAlister (Dean), Shull (Acting Asst. Dean for Student Affairs), Smith
Associate Professors: Franklin, Harmon, Malign, Polich, Sanders, Wilson
Assistant Professors: Baral, Flores (Acting Asst. Dean for Student Affairs), Hill, King, McGarry (Visiting), Meister, Rice, Varela-Ibarra
Lecturers: Erzen, Ledesma, Mendis, Paul, Polkinhorn, Williams

Offered by the Imperial Valley Campus

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 Latin American 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.
Master of Arts degree in education with concentration in multicultural education, in conjunction with the College of Education.

Certificate Program
Business Administration
Teaching Credentials
Basic
Multiple subject (elementary)
Single subject (secondary)
Specialist
Special education—in conjunction with the College of Education
Bilingual/cross-cultural—in conjunction with the College of Education
Special certificate and master's programs are offered in conjunction with the College of Extended Studies or with other appropriate colleges of San Diego State University. For further information see the Academic Handbook of the Imperial Valley Campus.

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. Offering only the last two years of undergraduate education as well as a five year credential program for teacher preparation, the campus accepts transfer students from either community colleges or other colleges who have at least 56 units. As a small campus with a low faculty/student 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 which are taking place on 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 one or two times 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 400,000 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 two universities in Mexicali (Universidad Autonoma de Baja California and Centro de Enseñanza Tecnico y Superior) which allows students to take classes at either of the participating universities and receive credit at their home institutions. Among the faculty are professors with Latin American emphases in history, geography, sociology, Spanish, art and anthropology. The faculty is also augmented with other Latin American specialists from Mexico and from the San Diego campus.

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 developed 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.

Facilities

The campus is housed in buildings of early Spanish style architecture on an eight-acre campus. The buildings are those built and used as the Calexico High School from 1927 to 1953 and are historically significant, since they are among the oldest buildings in Calexico. The library with its 28,000 volumes supports the curriculum of the campus and also provides a good basic collection for general use. It subscribes to over 200 periodicals and maintains an appropriate microform collection. The library is part of a CSUC system-wide Intrasystem Lending and Borrowing Service which provides quick interlibrary loan services and makes the library resources of all campuses in the system available to our students.

The media center provides professional assistance to the faculty in the application of educational technology to instructional situations. The center has a wide range of equipment for use in the classroom as well as a photo lab and TV studio capabilities. The media center provides consultation on selection, acquisition, preparation, utilization, and evaluation of instructional media and equipment; (2) organizes, equips, and maintains instructional media facilities and resources; (3) provides and maintains instructional media and equipment for instruction; and (4) prepares materials required for instruction.

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 forms and transcripts should be sent to the Admissions Office, San Diego State University, Imperial Valley Campus, 720 Heber Avenue, Calexico, California 92231. Applications for admission to the campus are accepted through the week before registration 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.
Special Programs and Services

Research Bureaus and Centers

University Center on Aging
E. Perci 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 as 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 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 chair or directors of the noted schools and departments 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 gerontology related professions. In addition, the Center administers an undergraduate minor in gerontology.

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.

Asian Studies
Dan McLeod, Director

The Center for Asian Studies is an interdisciplinary organization in the College of Arts and Letters. Drawing upon faculty members from many fields, campus-wide, 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 program and relevant curricula at the undergraduate and graduate levels; (4) responding to 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.

Business and Economic Research
in the College of Business Administration

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 for multidisciplinary projects. The bureau is a full service member of the National Association of Business Bureaus of Business and Economic Research and maintains a national survey

The principal objectives of the bureau are to (1) secure and administer grants and other support for conducting research in the areas of economics and business; (2) facilitate research in these areas by the faculty and students; (3) seek cooperative arrangements with outside individuals and organizations for conducting specific research projects; (4) respond to campus and community requests for information and services; (5) publish the results of its investigations and aid faculty in publication of their research. Graduate students and faculty are encouraged to make use of bureau facilities.

Center for Communications
Sig Mickelson, Director

The objectives of the Center for Communications are as follows:
To seek contracts with industries, government agencies or educational institutions; to carry out interdisciplinary communications studies of an applied research nature; to stimulate recommendations for applied research projects on the part of faculty members participating departments; to conduct conferences and seminars relating to new uses of communications, problems with communications, and applications of communications technology; to examine methods by which the University can extend its reach by use of communications technology; to establish a mechanism for cooperative enterprises in the communications field with other institutions of higher education in the San Diego area.

The Center functions within the College of Professional Studies. The principal cooperating units are the departments of Journalism, Speech Communication and Telecommunications and Film, the College of Extended Studies, the KPBS stations, and the Social Science Research Laboratory.

Counselor Education
David Malcolm, Director

The Center for the Study of Counselor Education is an interdisciplinary task force under the administrative jurisdiction of the Dean of the College of Education. Fiscal matters are coordinated through the San Diego State University Foundation. The center is designed to draw faculty members from relevant disciplines such as anthropology, economics, education, psychology, social welfare, social work, sociology, and the University Counseling Center for such purposes as (1) securing and administering grants and other support for research and development in counselor education and guidance, and (2) conducting programs or rendering services related to counselor education and guidance through contractual agreements with public or private agencies or organizations.

Institute for Cultural Pluralism
Ana Maria Rodriguez, Director

The Institute for Cultural Pluralism operates within the College of Education. Its basic purpose is to coordinate research and training projects aimed at the improvement of educational opportunities for ethnic minority students. In addition to the administration of bilingual and multicultural education projects, the Institute assists departments within the College in the development of multicultural programs for prospective and practicing teachers. It also collaborates with faculty interested in multicultural education research.

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 facilities are located in the Social Science Research Building 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.
Bureau of Educational Research and Evaluation
Peggy Hawley, Director

The Bureau of Educational Research and Evaluation operates within the College of Education. The objective of the bureau is to improve the quality of education through research by (1) assisting departments within the College of Education in their evaluation of courses and student performance, (2) serving faculty graduate advisers and their students as a resource in research design and statistical techniques, (3) assisting the research activities of individual faculty members who wish to make use of its services, (4) assisting those directing cooperative studies established between the College of Education and other educational communities, and (5) keeping faculty informed about current and potential bureau research activities and services.

European Studies Center
Leon Rosenthal, Director

The European Studies Center coordinates and supports teaching and research related to the European area. It supervises the major in European studies for the A.B. degree. It sponsors the annual San Diego State University Summer Seminar and Travel Study Tour to Europe. It administers the European Studies Center Laboratory in LE-470 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.

San Diego History Research Center
Stephen A. Colston, Director

The San Diego History Research Center is an archives and museum that has as one of its objectives the acquisition, conservation, and processing of materials for researching the development of the San Diego region mainly during the nineteenth century. The Center’s archives contain personal papers and records of public, business, labor, cultural, religious, museum houses, and artifacts excavated from the Real Presidio de San Diego as well as field regional history, the Center’s collections are well suited for supporting multidisciplinary research on business, economic, political, social, and urban topics. The Center also serves as the utilization of primary source materials in the research, writing and teaching of local history. The Center is administratively a part of the University Library and is located in LL-363.

Institute of Labor Economics
Adam Gifford, Director

The Institute of Labor Economics is a faculty of the Department of Economics to encourage research by students and faculty in all phases of labor problems, collective curricular and degree programs in the Department of Economics and to be of service to Research materials and facilities to assist research and publications in the area of labor level of the West Commons. A technical assistant is available to help you from 8:30 a.m.—4:30 p.m., Monday through Friday.

Latin American Studies
Thomas M. Davies, Jr., and Brian E. Loveman, Co-Directors

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 Center as one of the nation’s ten Latin American language and area centers. In the spring of 1979, this designation was renewed for two additional years. In conjunction with this award, the center administers programs that focus on: (1) initiation of a problem-oriented approach 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 library’s Latin American holdings and has created a special collection of Latin American materials which is available in the center’s reading room, SS-146.

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 provide special support services to those involved. The center is operated as a special unit of the College of Sciences. Supporting services sponsored by the center include advising students concerning marine studies, assistance to faculty and students in research and publication, operation of the University’s marine laboratory at Mission Bay, a boat operations program, and the University Diving Safety Program. The center is administered by a director, associate directors, and an executive committee consisting of faculty members elected from participating departments in the College of Arts and Letters, the College of Business Administration, the College of Engineering, the College of Professional Studies and the College of Sciences. Additional information about the Marine Studies Program and student advising is available from the Center for Marine Studies office.

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.

Public and Urban Affairs
Louis M. Rea, Director

The Institute of Public and Urban Affairs is a part of the School of Public Administration and Urban Studies. The Institute is organized to conduct research concerning community and government issues. It also sponsors conferences and colloquia related to urban, criminal justice administration. It is staffed by selected faculty and students of San Diego State University. Closely associated with the Institute is the Public Administration Center, with a specialized and growing collection of research materials emphasizing California and San Diego. In cooperation with the Public Administration Center, the Institute publishes occasional working papers and research monographs.

Public Economics
George Bablot, Director

The Center for Public Economics is a faculty of the Department of Economics to encourage research by students and faculty in all phases of nonmarket economic decision making, encompassing the following areas: (1) the functioning of federal, state and local fiscal systems, including the provision for and financing of public goods at each level; (2) the economic factors involved in the environmental changes, in particular, their relationship to urban and local economic problems; (3) the economic dimensions of social decision making. The center is designed to complement the curricular and degree programs in the Department of Economics and to be of service to related disciplines. It maintains research facilities and publications in the area of public economics. The center funds a number of student scholarships which are administered through the Scholarship Office. The Center for Public Economics is located in HT-307.
Regional Environmental Studies

The Center for Regional Environmental Studies coordinates and encourages interdisciplinary research, educational and public service programs related to environmental quality and improved use of environmental resources. Physical, biological, social and institutional aspects of environmental problems are emphasized. The center endeavors to serve as a point of contact between the University and governmental and private institutions concerned with environmental quality. Although the San Diego region receives primary attention, the center's activities include statewide, national and international environmental programs.

Research in Economic Development

Louis Green, Director

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

Social Science Research Laboratory

C. Richard Hofstetter, Director

The Social Science Research Laboratory (SSRL) is a facility of San Diego State University to facilitate faculty research and to support a diverse set of instructional programs. The laboratory provides computer applications to social analyses. Although the center is staffed upon approval of a sufficient budget, the SSRL is available to virtually any department or individual faculty member.

Survey Research

Oscar Kaplan, Director

The center for Survey Research was established to encourage nonprofit research in the field of survey research. The center is prepared to undertake surveys requested by governmental and academic institutions, and to do field work on the local, state or national level. The center may do so, upon approval of the project by the center's advisory committee. The center is administered by a director.

Center for Vocational Rehabilitation Counseling

Fred McFarlane, Director

The Center for Vocational Rehabilitation Counseling coordinates and supports training and research activities in the field of vocational rehabilitation counseling. This Center serves as a focal point of the Department of Education and works directly with faculty interested in the field. The Center's projects are funded by local, state and federal agencies. The Center's facilities are located in the Alvarado Clinic area in close proximity to the campus.

Computer Center

Harold K. Brown, Director

The Computer Center houses computing equipment and personnel which support the instructional, research and administrative activities of the University. The equipment consists of a DEC PDP 11/45 computer, used primarily for instructional timesharing activities; an IBM 360 computer, which supports the APL and FORTRAN languages and operates a CALCOMP 1039 plotter; and an IBM 360 model 50 computer with a large array of peripherals. The 360/50 handles batch processing at the main site as well as three remote-job-entry sites strategically located on campus where jobs can be submitted for processing.

A dual CDC 3300 computer located at the Chancellor's Office for statewide usage is also available to campus batch users via a high speed data link. Over 70 timesharing terminals are located throughout the campus and are available via dial-up telephone lines to either the 11/45 on campus or the CDC CYBER 174 at the Chancellor's Office for statewide timesharing. Both the 3300 and the 174 offer large statistical programming packages to their users.

Courses related to some specialized applications of computers, in addition to programming and data processing courses, are offered by several departments within the University. Many of these courses have special purpose minicomputers devoted to their area.

San Diego State University Foundation

The San Diego State University Foundation was incorporated in 1943 as an auxiliary organization of the State of California. It is a self-financed, nonprofit corporation, established to promote the development, implementation, and coordination of those activities that aid and supplement the fundamental educational mission of San Diego State University.

The Foundation provides a variety of essential services to the University, including (1) development and administration of grants and contracts for faculty research and educational projects; (2) administration of special programs such as the University Library, institutes, centers, workshops, conferences, and seminars; (3) financial administration of gifts and donations; (4) investments and endowment management; (5) financial administration of student scholarship and loan funds; and (6) management of a real property program whereby the Foundation provides space for grant and contract activity within its aegis, and leases property to the University and other campus auxiliaries.

Currently, the Foundation administers annually over $11,000,000 in grants and contracts awarded to faculty and students in support of approximately 300 research and training projects undertaken in the various colleges of the University. This record of achievement reflects the University's support of an active research program to enrich more fully the teaching-learning process. The Foundation is governed by a Board of Directors, consisting of faculty, students, University administration and community representation, who establish policy and guide the corporation in achieving its objectives.

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. The Alumni & Associates is a dynamic, moving organization whose purpose is to promote the welfare of the University. It offers a number of programs and services designed to meet the variety of needs and interests of its alumni, including library privileges, reduced admission to many cultural activities, the Alumni Placement Service, travel tours, and Extended Studies mini-courses, workshops and conferences.

The Alumni & Associates also supports the University's annual fund drive to raise private funds for innovative educational programs beyond the basic curriculum and to meet numerous needs of the University community.

In addition, the Alumni & Associates sponsors an Annual Awards Program every spring honoring alumni and friends of the University, provides scholarships for students, and serves as a sounding board regarding University programs and policies.

The Alumni & Associates' publication for alumni and friends of the University is the bimonthly Aztec Report.

For further information, phone the Alumni House at (714) 265-6907.
Learning Resource Center

The Learning Resource Center coordinates the activities of Audiovisual Services, Instructional Television and Instructional Development. The director provides leadership to the University in identifying new approaches to the teaching-learning process.

Audiovisual Services provides support to faculty and staff in the selection, design, production and use of instructional materials and audio-visual equipment. Specific services include photography; graphics; selection, maintenance, and distribution of films and audiovisual equipment; and consultation on the design and use of instructional technology.

The Instructional Development Program is a campus resource program offering professional assistance in instructional design, course design, teaching techniques, and assessment. Specific services include: (1) providing assistance in instructional materials development; (2) assessing and selecting instructional methods; (3) facilitating course design by supporting departmental committees; (4) providing faculty with opportunities to analyze their instruction; and (5) conducting workshops on skills and techniques of teaching and testing.

Instructional Television provides three services to assist faculty members in meeting their instructional needs: (1) the distribution of video-tape materials in classrooms via a 10-channel closed circuit system; (2) assistance in the acquisition of video-tape materials related to course content and the maintenance of an extensive library of such video-tapes; and (3) assisting faculty members in the development and production of original video-tape materials required for specific instructional purposes.
Financial Aid

Cost of Living
Each student should plan his budget based on individual needs. At San Diego State University, it is possible to live simply and participate moderately in campus life on a modest budget. The following table is based on CSUC systemwide figures provided for the purpose of determining maximum financial aid.

Estimated Expenses for the Academic Year

<table>
<thead>
<tr>
<th></th>
<th>Living off Campus</th>
<th>Living on Campus</th>
<th>Commuting from Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration fee</td>
<td>$200</td>
<td>$200</td>
<td>$200</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>$270</td>
<td>$270</td>
<td>$270</td>
</tr>
<tr>
<td>Room and board</td>
<td>$2700</td>
<td>$270</td>
<td>$270</td>
</tr>
<tr>
<td>Transportation</td>
<td>$540</td>
<td>$270</td>
<td>$720</td>
</tr>
<tr>
<td>Personal</td>
<td>$690</td>
<td>570</td>
<td>570</td>
</tr>
<tr>
<td>Total</td>
<td>$4400</td>
<td>$3380</td>
<td>$2760</td>
</tr>
</tbody>
</table>

In addition to the registration fee, foreign students and out-of-state students pay tuition of $72 per unit to a minimum of $1080 per semester. Typical expenses for married students without children average $6710 for a nine-month period. All fees and costs are subject to change without notice.

Financial Aid
San Diego State University makes every effort to see that students who wish to attend are not prevented from doing so due to inadequate resources. Available funds, however, are available to eligible applicants. In the majority of cases, a student will be offered a "package" financial aid plan which may include one or more of the types of aid.

Financial aid funds are available only to U.S. citizens or permanent residents.

Laboratory School building. Interested persons should ask for the Financial Aid brochure available for guidance as to the most appropriate aid program for the individual.

Applying for Aid
Financial aid applicants must submit the Student Aid Application for California (SAAC).

A separate application form is required for the various guaranteed student loan programs. Interested persons should contact the Financial Aid Office for information about the appropriate form.

California State Grants
Administered by the California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814, California State scholarship application forms are available in the year opened in December and ended February 11, 1980. Financial need must be shown for eligible to re-enroll in school.

California State Fellowships
California State Fellows may attend any California college or university accredited by the Western Association of Schools and Colleges and offering recognized graduate or professional degrees in the academic areas approved by the California Student Aid Commission. Fellowships may be used for graduate or professional work. Entering and currently enrolled students in graduate and professional schools are eligible to receive a State Graduate Fellowship. Fellowships are in the amount of tuition and/or required fees at the graduate or professional school the student will attend and may not be used for books, supplies, room, board, or other college expenses. Fellowships may be less than the full amount of tuition and fees in instances where the Commission determines that the student has need for less than a full tuition award because of his own or other resources. State Graduate Fellowships will range from $300 to full fees at the University of California and from $500 to full tuition and/or fees at independent colleges and are in the amount of fees charged at the California State University and Colleges, usually approximately $192. State Fellowships are granted for one academic year (September through June). They are awarded after consideration of both academic and financial characteristics. In determining whether or not financial need exists and in what amount, the Commission has developed standards of financial need assessment of each applicant as an individual in his own right. Financial need is determined by comparing the applicant's own estimate of his resources for the year with an annual college cost estimate developed by the Commission for each graduate and professional school. Budgets vary for single and married students and do give consideration for special factors which pertain to each applicant. Original application forms for the 1980-81 programs will be available from the Scholarship Office during December through mid-January, 1980. State Fellowships are renewable for up to three additional years. Renewal applications are automatically mailed to each State Graduate Fellowship recipient in mid-April. The deadline to submit applications for the 1980-81 academic year is February 1, 1980.

Scholarships and Fellowships Administered by Departments
During the 1978-79 academic year, 1,651 students received scholarships, fellowships, grants, or stipends through the various departments. Federal, state, and private industry support programs of this nature are largely directed to students doing graduate work or to students preparing for some special field of work. Students who have decided on some particular area of study should check with an advisor in the department of their major to determine what scholarships, fellowships, grants, or stipend support might be available to them.

Scholarships Administered for Students Selected by Donors
For the 1978-79 academic year, approximately 259 students received scholarships totaling about $112,219 for an average award of about $350 from donors who made their own selections and asked the University to administer the funds. These scholarships are generally from clubs and organizations helping students in areas of interest to that club or organization. Students should ask a club or organization of which they or members of their family are members if they sponsor scholarships.

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 so
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 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:

For Matriculated University Students:
- A 3.30 grade point average or above in the absence of a 3.30
- A 3.50 in the last 30 units of university work.

For High School Seniors:
- A 3.30 cumulative grade point average (excluding physical education and military science) for work completed in the last three years of high school.

Students must be enrolled full time (12 units—undergraduate, 8 units—graduate) at SDSU to be eligible to receive the scholarship check in fall 1980.

The Scholarship Application Process

Applications for San Diego State University Scholarships are available each year during one application period (the 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.

The University Scholarship Committee Awards Program

Each departmental scholarship committee ranks up to five scholarship applicants for the University Scholar Award. Final selection is made by the Committee and is based on the academic excellence and application of these top-ranked students. Students must enroll at SDSU to be eligible to receive the scholarship check in fall 1980. The number of awards each year was 65 awards of $450 each. Each year the number of Undergraduate scholarship recipients were also awarded and are renewable for up to five years. The following scholarships were awarded (or have been designated for following years):

Anonymous
Aztec Shops, Ltd
Daniel Berry Memorial
Fleet Foundation
Fletcher Foundation
Amelie Fontaine Memorial
Fox Foundation
General Dynamics
Arthur C. Harris Fund
William and Edna La Salle Memorial
Maurice Lemme Memorial
Foster S. Post Memorial Fund
San Diego State University Memorial Fund
Robert Patterson Shields Foundation
Wilma Tyler Trott Memorial
Dewitt Bibeau Williams Memorial Fund
Mr. and Mrs. John Zweck Memorial

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 5 students. Final approval of these nominations rests with the University Scholarship Committee. The following scholarships, averaging about $400, were awarded for the 1979-80 academic year (or have been designated for following years):

COLLEGE OF BUSINESS ADMINISTRATION

California First Bank
Robert F. Driver Co.
Mayor’s Bridges to Business
San Diego Mortgage Bankers Association
School of Accountancy
American Society of Women Accountants
California Society of CPA’s, Women’s Auxiliary, San Diego Chapter
Edward S. Murrow Memorial
Getty Oil Company
Haskins & Sells
National Association of Accountants, San Diego Chapter
Southern California Society of Certified Public Accountants, San Diego Chapter
Toche Ross & Co.

Finance Department
Robert F. Driver Co.
San Diego Mortgage Bankers Association
Information Systems Department
Georgia Amsden Memorial
Robert Hess Memorial
Alvin Morrison Memorial
Management Department
Personnel Management Association of San Diego
Marketing Department
American Marketing Association
Heny Calloway
Connie Fotinos Memorial
H. M. Stansbury

COLLEGE OF EDUCATION

Martha S. Biehl Memorial
California PTA
California Retired Teachers
Delta Kappa Gamma, Delta Iota Chapter
Delta Kappa Gamma, Nu Chapter
Heartland Human Relations Association
Linkletter Foundation
Catherine Yuhan Lodge Memorial
National Charity League of San Diego
Pl Lambda Theta Alumnae
Lauren C. Post Scholarship for Geographic Education
John Paul Stone Memorial

COLLEGE OF ENGINEERING

Alvarado Solis
American Concrete Institute
American Public Works Association
American Society of Civil Engineers
Associated General Contractors of America, San Diego Chapter
Association of California Water Agencies
California Council of Civil Engineers
California Society of Professional Engineers and Land Surveyors
California Society of Professional Engineers, Ladies’ Auxiliary

Civil Engineering Faculty Scholarship
E. F. Cook and Associates, Ltd
Electrical and Computer Engineering
Dept. Scholarships
Employees of Woodward-Clyde Consultants
Engineers Club of San Diego
Dean O. Ford Memorial
Frank Hoyt and Associates
Klaasen, Stevens and Associates
James R. Libby and Associates
Walter M. Lowe Memorial
National Electrical Contractors Associations
Nasland Engineering
S. Falck Nielsen Scholarship/Nielsen Construction
Craig, Buthius and Nonthob
North Island Professional Engineers Association
San Diego Chapter CSPE/Redelsheimer
San Diego Chapter CSPE Auxiliary
Redelsheimer
San Diego Section ASCE/Merrill B. Wittman Memorial
Society of Military Engineers
Chung-Mo Sun Memorial
Testing Engineers of San Diego
Unit Masonry Association of San Diego
Robert Young Engineering
Zinser-Furby, Inc.

COLLEGE OF HUMAN SERVICES

Communicative Disorders Department
Dorothy Baronofsky Memorial
California State Association of Emblem Clubs and W ildcat-Hawaii Clubs
Claremont Women’s Club
Nelia Feldman Gross Memorial
Paul Paff
Sigma Alpha, Gamma Upsilon Chapter
Sigma Delta, Zeta Pi Chapter

School of Nursing
Allstate Foundation
Blue Cross of Southern California
Lottie E. Oliphant Memorial Fund
United Commercial Travelers Volunteer Association of Kaiser Foundation

School of Social Work
Country Friends

COLLEGE OF PROFESSIONAL STUDIES AND FINE ARTS

Art Department
Art Department
Friends of Professor William Bowne
California China Painters Art Association
M. K. Hill

Drama Department
Jeweled Brides
Sharon Crosseley Memorial
Sybil Eliza Jones Memorial
Huron Sellman
Henry Stanton Memorial
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. The following scholarships were awarded for the 1979-80 academic year (or have been designated for following years):

- American Business Women's Association, Cabrillo Chapter
- American Business Women's Association, Toney Pines Chapter
- American Society of Military Comptrollers, San Diego Chapter
- Anonymous B
- Mary Earnest Bean Memorial
- Brenda Beilner Memorial
- Thomas Callaway Memorial
- Cap and Gown — May S. Finney Marcy Scholarship
- Chevrolet Motor Division Scholarship
- Del Cerro Women's Club
- Delta Kappa Gamma, Theta Gamma Chapter
- Eastman Kodak Co.
- Johanna Muench Fox Memorial
- William Fox Memorial
- Ruth J. Hockenberger Memorial
- Kappa Beta Nu
- Kiwanis Club of the University of San Diego
- Linkletter Foundation
- Mortar Board Alumnae of San Diego
- Optimist Club of San Diego
- Pan American League of San Diego
- Rotary International Old Mission Club
- San Diego County Epilepsy Society — Margaret B. Thorsen Memorial
- San Diego/Imperial Counties Labor Council
- San Diego State University Alumni and Associates
- San Diego State University Women's Club
- Silvergate Lions Club
- Anna and David Silverman Memorial/United Jewish Federation
- Solar
- Frank G. Tait Scholarship
- Terry Lynn Thompson Memorial
- Harold Wendt Memorial
- Guilford Whitney Foundation

Industrial Studies Department
California P.T.A.

Journals Department
James Copley Foundation
KFMB
McGraw-Hill Broadcasting

Music Department
Elsie Haland Fox Memorial
Alvin Morrison Memorial
Bessie S. Purdy Memorial
Sigma Alpha Iota
Sigma Alpha Iota, Student Chapter
SPEBSQSA
Paul C. Stauffer Memorial
Alan Wilson Memorial

Physical Education Department
George William Ellis
Guadalajara National Philharmonic
James B. Harker
Mary Hodgetts Memorial
Mary Haine Memorial
James Trigo Memorial

Recreation Department
Ray R. Butler
California Parks and Recreation Society, Local District 12
Bonnie Jean Gore Memorial

Religious Studies Department
Louis Lieblitch Memorial

Speech Communication Department
The Honorable Clair W. Burgener
Percy Belle Senn Memorial

Telecommunications and Film Department
KFMB
Linkletter Foundation
McGraw-Hill Broadcasting

COLLEGE OF SCIENCES
Mary Mellon Kantor Memorial
Geological Sciences Department
Baylor Brooks Scholarship Fund
Standard Oil Company
Union Oil Company

Physics Department
American Nuclear Society
Cubic Corporation
Pacific Scene, Inc.
Rohr Corporation
San Diego Gas and Electric Company

Zoology Department
Crouch Scholarship for Avian Behavior
Student Services

School and College Relations
The School and College Relations office provides information and guidance 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. Visits to high schools and community colleges, encouragement and assistance to SDSU colleges and departments with the provision of information to prospective students, regular and other mailings are among the means utilized to communicate with prospective students. We welcome requests for these and other kinds of services for prospective students.

Center for Counseling Services and Placement
The Center for Counseling Services and Placement provides, without charge, an array of educational and vocational assistance through counseling on career choice and curriculum development, and consultation with students and their parents and counselors. We welcome requests for these and other kinds of services for prospective students.

Health Services
As part of the program of student services, the University provides health services for the service fee and are administered by a Medical Director. These services include full-time physicians in general and family practice, dermatology, internal medicine, general surgery, and gynecology. In addition, there are specialists including x-rays taken for diagnostic purposes. Nurse practitioners are an integral component of the health services, providing laboratory staff are also on duty when school is in regular session. The pharmacy is open 8:00 - 4:30 p.m. on Monday through Thursday, and 8:00 - 3:30 p.m. on Friday. The Center is coordinated by directors.

Student Services / 45

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 Trustee policy, first aid or emergency medical care is provided to students, faculty, and campus guests for accidents and injuries occurring on or near the University. Accidents requiring emergency treatment and/or transportation to Health Services, 5300 Campanile Drive, or a local hospital should be reported immediately to the SDSU Department of Public Safety, 265-5955. SDSU students are treated by the University as adults. Accordingly, students are responsible for their own safety and health in connection with participation in campus activities, and should exercise good judgment and due care at all times. The University does not provide accident, health, or liability insurance coverage for students participating in extracurricular activities, intramural sports, and required or elective academic programs, such as laboratory courses, workshops, theatrical productions, internships, or practica. Specific questions regarding insurance coverage for campus programs, institutional safety regulations, and potential risks inherent in academic programs and student activities should be directed to the responsible faculty or staff member in charge of the activity.

In addition, through the Associated Students, a prepaid health insurance program is available and recommended to students having no private medical or accident insurance coverage. The insurance includes hospitalization benefits and specified medical and surgical services. The program may be purchased by semester or on a yearly basis for $125. An open enrollment period is available the first thirty days of each semester. With the exception of international students, participation in this health insurance program is voluntary.

Study Skills Center
The Study Skills Center offers assistance to all students at any university level, including bilingual and international students, who wish to improve reading or writing skills or to obtain help with study problems or writing projects, either remedial or advanced. Five-week, intensive mini-courses in a variety of learning-related topics are also offered by the Center. The Center's services are available on either an enrollment or a drop-in basis.

In addition, the Center assists students in completing the university writing competency requirement. The university requires students to demonstrate writing proficiency consistent with its established standards, and accordingly requires all entering students to pass the Writing Competency Test, or to enroll in a writing course in the Study Skills Center during their first semester at SDSU and to continue in that course until successfully completing it.

Test Office
The Test Office serves both students and faculty in administering and scoring a wide variety of tests, including placement tests, the Writing Competency Test and the Graduate Record Examination. The Test Office works closely with faculty members in developing new tests and in evaluating the results. It is located in Library East where it maintains a library of over 800 different tests.

Audiology Diagnostic Center
The Audiology Diagnostic Center is a service of the Communicative Disorders Department. It is located on the lower floor of the Communications Clinic. The principal objectives of this center are to provide diagnostic information regarding hearing loss for faculty, students, staff and the community. A minimal fee is charged for diagnostic evaluations. This center operates throughout the school year. Referrals may be made through health professionals, agencies, school districts or as self-referrals.

Speech and Hearing Clinic
A speech and hearing clinic in which university students are trained in the application of speech, hearing and language pathology techniques, including speech, lipreading, auditory...
training, manual communication, and language development for the hard of hearing and deaf. Tutorial services are available for hearing impaired students during the school year. The clinic operates through the school year and Summer Session II. The clinic serves those with speech, hearing, and language problems at all age levels. Because of limitations of staff, not all who apply can be admitted. A minimal fee is charged for diagnostic evaluation and therapy for outpatients but not for students enrolled at San Diego State University. Referrals may be made through agencies, school districts, health professionals, or as self-referred.

Clinical Training Center

The Clinical Training Center provides a supervised training and service facility which includes, but is not limited to direct involvement by undergraduate and graduate students of separate disciplines in multi-disciplinary experiences such as prevention, assessment, rehabilitation and treatment of behavioral, communicative, learning and personal-social difficulties. Students are supervised directly by faculty from their respective disciplines. The Clinical Training Center encourages interdisciplinary educational and research opportunities for faculty and students. Provision for interdisciplinary components of the curriculum of further information call 265-6121.

Student Resource and Information Center

The Student Resource and Information Center (SRIC) serves as the coordinating unit for resources and information regarding student programming efforts and student services. Specifically, the Student Resource and Information Center is committed to identifying and making available the resources, information, professional personnel, and learning opportunities which allow students to relate most effectively to their academic, social, and learning opportunities which facilitate the growth of students in groups, organizations, and as individuals. Some of the programs and services offered through the Student Resource and Information Center new student orientation programs, commuter student services, and information on student organizations and events.

One of the major priorities of the Student Resource and Information Center staff is to be available to assist students or University personnel in any way that they can. For information, write to the Student Resource and Information Center. Campus Lab School 114, or call 265-5221.

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 registration assistance, and a campus tour. The programs start in May and will continue through the summer months. For information, write to the Student Resource and Information Center. 114, or call (714) 265-5221.

Aztec Center

San Diego State University was the first of the California State University and Colleges to mid-1930's when students and faculty began accumulating funds for construction. In 1956, the Associated Students Council set aside a permanent portion of the Activities Fee for the development of the project in 1963. Two years later the U.S. Department of Housing and Urban Development extended a 40-year loan of $2.9 million to enable construction to begin. The student union fee will be used to retire this indebtedness; no public tax money is involved. The furnishings and equipment were purchased for the student funds and contributions from Aztec Shops, Ltd. From inception to the completion of the facilities, students and faculty have shared alike in all phases of its planning and development. Financed by a student union fee, it is a nonprofit, self-sustaining, self-liquidating, non-tax supported, student-funded operation. The Aztec Center finances the operation of the Crafts Center, Aquatics Center, and Open Air Theatre. Governance of the Center is by the Aztec Center Board, composed of nine students and one faculty member. Anyone is welcome to the meetings, which are open and frequent.

The 120,000 square foot structure houses a portion of the activities program and includes the following services: Aquatics Center, classes, The Backdoor, barber shop, banquet hall, bowling and billiards, conference rooms, Crafts Center, classes, General Store, information booth, lounges, music rooms, organizations center, Paper Chase (term paper preparation store), pocket billiards, post office, program rooms, Scripps Cottage, and Open Air Theatre.

Child Care Center Program

The Associated Students Child Care Program, a parent cooperative, provides child care for SDSU students' children between the ages of six months and six years who are in good health. The program is staffed by seven paid employees, parents, and volunteers. The program is designed so that a variety of activities is offered which will foster the child's social, emotional, intellectual and physical development and help the child view himself/herself and the environment positively. The program is open for students enrolled at San Diego State University exclusively. The primary purpose of Aztec Shops is to provide bookstore and food services to the campus. Other services of the Shops include ticket sales, a contract post office and a copy center.

The bookstore provides required textbooks, assigned class materials, reference works and all other items. The copy center provides xerox copying, poster printing, binding and collating. The shop provides a meal ticket program available for any enrolled student with a 14- and 10-meal option. The East Commons is open to the community on Sunday and Saturday when classes are in session.
Housing and Residential Life

Residence Halls

Accommodations for 1,709 single students are available in six residence halls on campus. Five of the halls are three-story red-brick buildings accommodating 223 students each; the sixth is a high-rise building which accommodates 594 students. All of the halls provide sleeping and study facilities on a two-students-per-room basis or in a small number of single rooms in Zara Hall. Student governments and staff in each of the halls recommend standards for basic behavior in the residence halls. Participation in campus activities is encouraged.

Currently, the cost for room and board is approximately $1,782 (14-meal plan, double occupancy) per academic year. Rates are reviewed annually; you may anticipate cost-of-living increases to this 1979-80 rate. Three food service plans (10, 14 or 19 meals per week) are offered.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO CONTACT THE HOUSING AND RESIDENTIAL LIFE OFFICE IF ONE WISHES TO OBTAIN ON-CAMPUS HOUSING. APPLICATIONS ARE GIVEN PRIORITY IN DATE ORDER AS THE DEMAND EXCEEDS THE NUMBER OF SPACES ON THIS CAMPUS. To apply for housing, the student should send a self-addressed envelope to the Housing and Residential Life Office. When the application is completed, it should be mailed to the Housing and Residential Life Office at the University. A request for a room is confirmed after the student is admitted to the University, when a self-addressed envelope 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 first-come, first-served basis. 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 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 also organizes programs to assist students in locating off-campus housing. Workshops are available on a variety of topics. 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 10 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. Fraternities provide men opportunities to participate in a wide variety of social and recreational activities, to expand leadership abilities, to develop enduring friendships, and to participate in community service organizations. Interfraternity Council, c/o Housing and Residential Life Office, San Diego State University.

Transportation and Parking

San Diego Transit has six bus routes that service the University, connecting with all areas of the metropolitan area. They are as follows:

- Route 5/105 operates from SDSU to College Grove Shopping Center to University City via downtown.
- Route 11 operates from SDSU to Kentishton to downtown and to Spring Valley via Hillcrest and Southeast San Diego.
- Route 13 connects SDSU and southeast San Diego via Allied Gardens Grantville. Route 15/115 connects downtown San Diego to City of El Cajon via SDSU, La Mesa, and Parkway Plaza.
- Route 36 connects the locations of 70th Street and El Cajon Blvd. and La Presa via SDSU, College Grove Shopping Center and Lemon Grove.
- Route 80 offers express service from Grossmont Shopping Center in La Mesa to Mission Pacific Beaches via SDSU and Fashion and Mission Valleys. This route also has bike racks available for public usage.

Additional information concerning bus routes, fares and services can be obtained by calling San Diego Transit at 233-3004. Schedule racks are located on campus at Aztec Center Information and at the entrance to East Commons.

On-campus parking is by permit only, and is scarce close in. Adequate parking is usually available in outlying areas. Visitors may obtain a permit at the Information Booth at the Campanile entrance to campus or may park in the metered spaces in Lot F.

Marine Corps Programs

The Marine Corps Platoon Leaders Program, as well as the Marine Woman Officers Candidate Program, is available to qualified college students.

Male applicants may sign up during their freshman or sophomore year and attend two six-week summer training sessions at Quantico, Virginia, or they may sign up during their junior year and attend one ten-week summer training session at Quantico. Female juniors may sign up for the ten-week Officer Candidate Course and attend training between their junior and senior years.

Upon successful completion of the summer training and upon graduation, each applicant will be commissioned as a Second Lieutenant of Marines. All candidates who have completed the first summer training are eligible to apply for the Financial Assistance Program which grants $100 per month during the school year. This program is also applicable for candidates enrolled in the Law Program as well as the Flight Program.

Officer candidates are paid during training at rates equivalent to Sergeant (E5). Students enrolled in the PLC program incur no obligation to serve after graduation unless financial assistance is accepted or until the candidate accepts a commission upon graduation.

The Marine Corps Officer Selection Officer visits the campus during the school year. Students are invited to contact any member of the team at that time, or are encouraged to write to the Officer Selection Officer, care of United States Marine Corps Recruiting Station, 861 Sixth Avenue, San Diego, California 92101.

Navy Officer Programs

The Nuclear Power Officer Collegiate Scholarship is a financial assistance program which pays over $725 per month to qualifying students completing their final year of undergraduate or graduate work in engineering, mathematics, chemistry or physics. It can be worth over $8800 in the senior year (or last year of master's degree program) by following a job operating Naval Nuclear Propulsion plants. Application for the Nuclear Power Officer Collegiate Program (NUPOC-C) can begin during the second semester of the junior year, during the senior year, or during the master's program. The Division of Naval Reactors will determine initial eligibility by screening the college transcripts of interested applicants.

The Nuclear Power Instructor Collegiate Scholarship is a financial assistance program for men and women which pays over $725 per month to qualifying students completing their final year of undergraduate or graduate work in engineering, mathematics, chemistry or physics. It can be worth over $8800 in the senior year (or last year of master's program).
followed by a job teaching in the Navy's Nuclear Power School. Applications for the Nuclear Engineering Instructor Program (11051-C) can begin during the second semester of the junior year, during the senior year, or during the master's program. The Division of Naval Reactors (a program in research is also available) 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: 283-6444.

**Educational Opportunities 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 and 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 (VAO) is located at 5525 Hardy Avenue to assist veterans and eligible dependents applying to use G.I. Bill benefits. The VAO is open from 8:00 a.m. to 6:00 p.m. on Monday, 8:00 a.m. to 4:30 p.m. Tuesday through Thursday, and 8:00 a.m. to 3:00 p.m. on Friday.

In addition to handling G.I. Bill certification, the VAO also processes paperwork for advance payment of G.I. Bill benefits. Application for advance payment must be made at least two months before the beginning of the semester.

For more information or any questions about G.I. Bill benefits, either stop by the VAO or call 265-5613.

**Disabled Student Services**

Disabled Student Services provides the special support services needed by students with physical disabilities. Services include orientation for new students, priority registration for students with special limitations, close-in parking, transportation on and off campus, loan of special equipment. Accessibility information, maps, and elevator keys are available. The attendants, interpreters for the deaf, and notetakers, as well as information on accessible assistance for personal, academic and vocational problems. Special programs, social and assistance with off-campus service and funding organizations. Some services require medical documentation. For more information contact Disabled Student Services, Campus Lab School 110, telephone 265-6473 or TTY 265-5417.

**Regulations**

**Admission and Registration**

**General Regulations**

**Graduation Requirements**
Admission and Registration

Admission Procedures and Policies
Requirements for admission to San Diego State University are in accordance with Title 5, Chapter I, Subchapter 3, of the California Administrative Code. Prospective applicants who are not sure of these requirements are encouraged to 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 and Colleges at any California high school or community college.

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 $25 nonrefundable application fee should be in the form of a check or money order payable to The California State University and Colleges and may not be transferred or used campus. An alternative choice campus and major may be indicated on the application, but applicants should list as alternative campus only that campus of The California State University and Colleges that they can attend. Generally, an alternate degree major will be considered at the first choice campus before an application is redirected to an alternate choice campus. Applicants will be considered automatically at the alternate choice campus if the first choice campus cannot accommodate them.

Locally and Systemwide 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. You must make an application for an impacted campus. Nonresidents, foreign or domestic, usually are not considered for admission to impacted programs. High school and community college counselors are advised 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. Effective with the fall 1980 filing period, 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 must take the ACT or SAT test at the earliest date. Your test scores (received by the third month of the filing period) and your grades earned in supplementary admission criteria used by the individual campuses to screen applicants seeking admission to an impacted program.

Unlike unaccommodated applicants to locally impacted programs, who may be redirected to another campus in the same major, unaccommodated applicants to systemwide impacted programs may not be redirected in the same major but may choose an alternative major either at the first choice campus or another campus.

Postbaccalaureate Application Procedures
All applicants for any type of postbaccalaureate status (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for personal or professional growth) must file a complete application within the appropriate filing period. Second bachelor's degree candidates should complete form B. A complete application for postbaccalaureate degree status includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. Postbaccalaureate applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the $25 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of a single campus on each application, redirection 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 a separate application (including fee) to each. Applications may be obtained from the Graduate Studies office of any California State University or College campus in addition to the sources noted for undergraduate applicants.

Application Filing Periods

<table>
<thead>
<tr>
<th>Terms in 1980-81</th>
<th>First Accepted</th>
<th>Student Notification Begins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 1980</td>
<td>November 1, 1979</td>
<td>December 1979</td>
</tr>
<tr>
<td>Spring 1981</td>
<td>August 1, 1980</td>
<td>September 1980</td>
</tr>
</tbody>
</table>

Filing Period Duration. 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.

All applications postmarked or received during the initial filing period will be given equal consideration within established enrollment categories and limitations. There is no advantage in filing before the initial filing period. Applications received before the initial filing period may be returned, causing a delay in processing. With the exception of the impacted undergraduate program areas (architecture, natural resources, nursing, and physical therapy), most campuses will be accepting applications well into the extended filing periods until enrollment spaces are filled.

Admission to the university is not required for summer session attendance at San Diego State University except in special summer master's degree programs. Summer session applications are included in the Summer Sessions Bulletin which is available in mid-March from the College of Extended Studies. For information on master's degree programs in summer sessions, consult the Graduate Division.

Space Reservation Notices
Most applicants will receive some form of space reservation notice from their 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 the application's 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 would be faced with extreme hardship if not admitted. Prospective hardship petitioners should write the Admissions Office regarding specific policies governing hardship admission.
Filing of Records

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 graduate students who hold a bachelor's degree from an accredited institution, but required of the student who holds a bachelor's degree from a nonaccredited institution).
2. Transcripts from EACH college attended (including extension, correspondence, summer session, or evening courses). Graduate students must file transcripts in duplicate if they plan to enter a master's degree or credential program.
3. Photocopy 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 freshmen and transfers who have fewer than 56 units. Applicants should consult the high school counselor or the San Diego State University Test 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

Chemistry Placement Examination. Required of students before enrollment in Chemistry 200 or 204A. This examination must be taken before registration. Reservation for the examination is not required.

English Placement Test. All students subject to degree requirements of 1977-78 and subsequent general catalogs must demonstrate competency in writing skills as a requirement for graduation. All first-time freshmen and lower division transfers are required to take the CSUC English Placement Test (EPT) so that information can be available to help in the selection of appropriate course. The English Placement Test at the earliest opportunity after admission may lead to Administrative Code, and CSUC Executive Order 186, may lead to disqualification from

Information bulletins and registration materials for the EPT will be mailed to all students subject to these requirements. Alternatively, the materials may be obtained from the Office of the Dean of Undergraduate Studies. Graduation requirements may be obtained from the Dean of Undergraduate Studies.

Mathematics Placement Examination. Required of students before enrollment in any of the following courses: Mathematics 104, 119, 120, 121, 140, 150, Economics 201, Political Science 201. These examinations may be taken before registration. Registrations for the examinations are not required. Refer to the calendar in the Class Schedule for examination dates.

Graduate Aptitude Tests. This test is required of all graduate students who intend to enroll in a master's degree program. May be taken before registration. Also given during the Bulletin for full information and test dates.

Competency Tests

Writing Competency Test. Competency in standard written English is regarded as essential to successful study in the university environment. All undergraduates, both freshmen and transfers, must satisfy the writing competency requirement at the time of entrance or within two semesters thereafter (see Graduation Requirements: I. Competency Requirements section of this catalog for complete details).

Mathematics Competency Test. Competency in basic mathematics is regarded as essential to successful study in the university environment. All undergraduates, both freshmen and transfers, must satisfy the mathematics competency requirement (see Graduation Requirements: I. Competency Requirements section of this catalog for complete details).

Undergraduate Admission Requirements

First-time freshman eligibility is governed by an eligibility index. The index is computed using the high school grade point average on all course work completed in the last three years of high school, exclusive of physical education and military science, and the ACT composite, or the SAT total score. A table of grade point averages, with corresponding test scores and the equation by which the index is computed is reproduced on the following page.

Registration forms and test dates for either test may be obtained from school or college counselors, from the addresses below, or from the campus testing offices. For either test, submit the registration form and fee at least one month prior to the test date.

ACT Address
American College Testing Program, Inc.
Registration Unit, P.O. Box 414
Iowa City, Iowa 52240

SAT Address
The College Board
P.O. Box 592
Princeton, New Jersey 08540

First-Time Freshmen Applicants (California high school graduates and residents). Applicants who are graduates of a California high school or legal residents for tuition purposes need a minimum eligibility index of (ACT) 741 or (SAT) 3072. The following table illustrates grade point averages and scores needed to qualify for admission.

<table>
<thead>
<tr>
<th>G.P.A.</th>
<th>ACT Score</th>
<th>SAT Score</th>
</tr>
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<tbody>
<tr>
<td>2.00*</td>
<td>2.20</td>
<td>2.60</td>
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<tr>
<td>2.20</td>
<td>2.40</td>
<td>3.00</td>
</tr>
<tr>
<td>2.60</td>
<td>2.80</td>
<td>3.20**</td>
</tr>
</tbody>
</table>

* Below 2.0 not eligible.
** Above 3.20 eligible with any score.

First-Time Freshmen (Nonresident). Applicants who are neither residents for tuition purposes nor graduates of a California high school need a minimum eligibility index of (ACT) 826 or (SAT) 3402.

High School Students. Students still enrolled in high school will be considered for enrollment in certain special programs if recommended by the principal and if preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a designated program and does not constitute the right to continued enrollment.

Recommended Preparation for High School Students. While no specific classes are required for admission to San Diego State University, students who plan their high school program with care will find themselves better prepared, more successful, and with more interesting options available to them than those who are deficient in basic skills and information.

Writing

Writing skills are essential to success in the university. Students are strongly urged to take at least three years of English classes which include instruction in writing. A speech class which teaches organization and development of ideas may be substituted for one English class. San Diego State requires a writing competency 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 should take at least two years of high school mathematics (elementary algebra and either intermediate algebra or geometry). Students considering science or engineering as their major should take an additional two years of mathematics.

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 awarded by San Diego State require language study which may be satisfied by four years (in the same language) at high school, or a combination of high school and college course work.

Undergraduate Transfer Applicants (Resident and Nonresident)

Transfer admission eligibility is based on transferable college units attempted, rather than on all college units attempted. California Community College transfers should consult their counselors for information on transferability of courses. Applicants in good standing at the last institution attended may be admitted as undergraduate transfers if they meet either of the following requirements:

1. Eligible for admission in freshman standing (see freshmen requirements) with a GPA of "C" (2.0 on a scale where A = 4.0) or better in all transferable college units attempted.

2. Completed at least 56 transferable semester units or 84 transferable quarter units with a GPA of "C" (2.0 on a scale where A = 4.0) or better. If a California resident, nonresidents must have a G.P.A. of 2.4 or better.

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 San Diego State University offer a special program designed to expand educational opportunity for capable persons who, for a variety of reasons, have not previously had the opportunity for admission to San Diego State University. For detailed information regarding admission to this program, refer to the section of this catalog on the Educational Opportunities Program.

Admission of Postbaccalaureate and Graduate Students

All students holding a baccalaureate degree who desire to enroll at San Diego State through the Office of Admissions. In making the application, they must observe the

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 or College 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 or College 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 (Classified)

A student eligible for admission to a California State University or College in unclassified or conditionally classified standing may be admitted to an authorized graduate curriculum with conditionally classified graduate standing.

Graduate Standing (Conditionally Classified)

A student eligible for admission to a California State University or College in unclassified or conditionally classified standing may be admitted to an authorized graduate degree curriculum of the campus as a classified graduate student if he/she satisfactorily meets 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.

Admission as an International (Foreign) Student

The admission of international (foreign) students is governed by separate requirements. Prospective applicants from abroad should consult the individual campus catalogs and international (foreign) student informational brochures available from the campuses. Health insurance coverage is mandatory for international (foreign) students. Present acceptable health insurance is available on campus at approximately $125 per year. Applicants for admission as either graduates or undergraduates whose education has been in a foreign country should file an application for 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. Only those foreign students already in the United States will be considered for the spring semester. Students applying to transfer from a college or university in the United States must have completed a full year at that institution. If certificates and transcripts are not in English, they should be accompanied by certified English translations. Credentials will be evaluated in accordance with the general regulations governing admission to San Diego State University.

An applicant whose education has been in a language other than English must take the Test of English as a Foreign Language (TOEFL). This test is administered in most foreign countries and test scores must be received by the university before admission to the university can be granted. Information as to the time and place at which this test is given may be obtained by writing to: Educational Testing Service (TOEFL), Princeton, New Jersey, 08540, U.S.A. Upon arrival at San Diego State University, further tests of English will be given for the purpose of placing students in an English language program commensurate with their
linguistic ability in English, and for use by advisors to assist students in planning an appropriate course of study. Depending upon students' performance on the placement test and their academic background, they may be required to enroll in one or more English language courses during their first year at San Diego State University. Foreign students transferring from another U.S. college may also be required to take an English placement test.

Arrangements for housing should be completed well in advance of the student's arrival on 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 obtain an appointment as early as possible with an International Student Counselor at the International Center.

**Limitation of Enrollment**

Admission to a state university or college 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 just prior to the beginning of each semester. The Class Schedule, issued each semester and obtainable at the University bookstore prior to the registration period, contains specific information on fees and the cost of the registration fee, and a listing of the fees required for registration. Fees are payable at the time registration materials are submitted and depend on the number of units selected. Late registration at San Diego State University is permitted only in cases for which there is demonstrable justification.

**Determination of Residence for Nonresident Tuition Purposes**

The Admissions Office determines the residence status of all new and returning students for nonresident tuition purposes. The Residence Questionnaire and, if necessary, other evidence furnished by the student is used in making this determination. A student may not register and enrol in classes until the Residence Questionnaire has been received by the Admissions Office.

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. California State University and Colleges is found in Education Code Sections 68000-68090. Administrative Code, Article 4 (commencing with Section 41900) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

Residence may be established by an adult who is physically present in the state and, at the same time, intends to make California his permanent home. Steps must be taken at least one year prior to residence determination date to show an intent to make California the permanent home with concurrent relinquishment of the prior legal residence. Intention to establish and maintain California residence is evidenced by registering to vote and voting in owner of residential property or renting occupancy or leasing an apartment on a lease in California professional or social organizations; maintaining California vehicle plates and maintaining permanent military address and home of record in California if one is in the

The student who is within the state for educational purposes only does not gain the status of resident regardless of the length of his stay in California.

In general, the unmarried minor (a person under 18 years of age) derives legal residence from his parents, or, in the case of permanent separation of the parents, from the parent with whom the minor maintains his 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 man or a woman may establish his or her residence; marriage is not a governing factor. 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 term and is from the date which residence is determined for that term. The residence determination dates for the 1968-69 academic year are September 20, 1968 and January 25, 1969. Questions regarding residence determination date should be directed to the Admissions Office. They can give you the residence determination date for the term for which you are registering.

There are several 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 below the age of 19 who have been present in California 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 transfer of the military person directly to a post outside the 50 states and District of Columbia.
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. A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the law of the United States, provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if both the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the law of the United States, provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the University.
7. Certain refugees.
8. Certain credentialed, full-time employees of school districts.
9. Full-time State University and Colleges employees and their children and spouses.
10. Certain exchange students.
11. Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties.
12. A person in continuous full-time attendance at an institution who had resident classification on May 1, 1973, shall not lose such classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the age of 21.

Any student, following a final decision on campus on his residence classification, may make written appeal to:
Academic Advising

Academic advising is organized according to major. All students must comply with advising requirements established for their major(s) and described with other major requirements 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 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. 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**
*(Library East, Room 469)*

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 (LE-469) for general education advising.

**College of Business Administration Advising Center**
*(Business Administration, Room 441)*

**College of Education Admissions and Counseling Center**
*(Education, Room 100)*

**College of Engineering Advising Center**
*(Engineering, Room 424)*

**College of Human Services Counseling Center**
*(Hepler Hall, Room 124)*

**College of Professional Studies and Fine Arts**
*(Social Sciences, Room 127)*

**College of Sciences Advising Center**
*(Life Sciences, Room 407)*

**University Advising Center**

Students who have not declared a major, general education advising.

**Imperial Valley Campus Advising**

Students who have not decided on a major should bring their academic questions to the University Advising Center. Besides dealing with graduation requirements such as general education, foreign language, writing and mathematics competency, American institutions and the like, the Center offers special assistance in establishing academic goals and deciding upon a major.

**Civil Engineering**

**Chemistry**

**Areas of interest within the majors**: Animal behavior, chemical physics, computer science, counseling and clinical psychology, ecology, electronics, engineering geology, environmental health, entomology, genetics, geochemistry, geophysics, marine biology, marine geology, medical technology, oceanography, paleontology, physiology, physiological psychology, radiological physics, statistics, teaching credential programs in life and physical sciences. For preprofessional programs see section below.

**Unit**

Students who have not decided on a major should bring their academic questions to the University Advising Center. Besides dealing with graduation requirements such as general education, foreign language, writing and mathematics competency, American institutions and the like, the Center offers special assistance in establishing academic goals and deciding upon a major.

**Imperial Valley Campus Advising**

Imperial Valley Campus students are required to see an adviser prior to registration for each semester. Students with a declared major or an interest in a specific major should consult with a member of the Campus Academic Advising Team: Professors Erzen, Polich, or Varella-Ibarra. These academic advisers may be consulted at any time on specific questions concerning programs of study, general degree requirements, or students' evaluations. An academic adviser will be available Monday through Thursday from 2 p.m. to 6 p.m.

**Students who are undecided about their major should consult with a counselor from the Student Affairs Unit. The Unit operates Monday through Thursday from 8:30 a.m. to 5 p.m. Academic advisement from either of the above sources is available by appointment or on a drop-in basis.
Advising for Graduate Programs, Teaching Credential Programs, and Preprofessional Programs

General requirements for the master's and doctoral degrees. Advisement concerning general requirements (except for the major) is available through the Graduate Division in room 220 of the Administration Building. Office hours are from 10:00 a.m. to 5:00 p.m. on Monday through Thursday and from 10:00 a.m. to 4:30 p.m. on Friday. A departmental graduate adviser is available in all programs offering graduate degrees.

Teaching credential requirements. Advisement concerning requirements for the single subject (secondary schools) 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, Campus Lab School, room 107; prelaw, Library East Building room 319; premedicine, Campus Lab School, room 107; preoccupational therapy, Life Science Building, room 407; preoptometry, Life Science Building, room 407; prepharmacy, Life Science Building, room 407; prephysical therapy, Life Science Building, room 407; preveterinary medicine, Campus Lab School, room 107. Advisers in pre dentistry, prelaw, premedicine and pre veterinary medicine 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-on-campus orientation program. Advisement is an important part of each program, including a lecture on general requirements and small group meetings with the assistant deans from the various colleges and schools. Questions concerning orientation can be directed to the Student Resource and Information Center, Campus Laboratory School, room 114.

Exploring the University. Every summer (usually in July and August), the University Study Skills Center offers a special five-week course entitled Exploring the University, for one unit of graduation credit. The purpose of the course is "to prepare new students academically and ease the transition into the university through instruction in the principles of effective learning, clear thinking, and disciplined study." Also included is a section on academic advising to help new students anticipate and plan for the various bachelor's degree requirements. The University Study Skills Center is located in the Library East Building, room 486.

Transcript Evaluation

Official evaluations may be requested at the Evaluations Office (AD-127) by declared majors upon the completion of 56+ semester units. Interviews may be scheduled with evaluators by students with questions concerning their evaluations. Evaluators are also available to assist students during the registration period.

General Regulations

Student Responsibility for Catalog Information

Students are held individually responsible for the information contained in the catalog. Failure to read and comply with university regulations 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 and Colleges, by the Chancellor or designee of The California State University and Colleges, or by the President or designee of the institution. Further, it is not possible in a publication of this size to include all of the rules, policies and other information which pertain to the student, the institution, and The California State University and Colleges. More current or complete information may be obtained from the appropriate department, school, or administrative office.

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

Privacy Rights of Students in Education Records

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) and regulations adopted thereunder (45 C.F.R. 99) and California Education Code Section 67100 et seq., set out requirements designed to protect the privacy of students concerning their records maintained by the campus. Specifically, the statute and regulations govern (1) access to student records maintained by the campus, and (2) the release of such records. In brief, the law provides that the campus must provide students access to official records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate; the right to a hearing under the law does not include any right to challenge the appropriateness of a grade as determined by the instructor. The law generally requires that written consent of the student be received before releasing personally identifiable data about the student from records to other than a specified list of exceptions. The institution has adopted a set of policies and procedures concerning implementation of the statute and the regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Dean of Student Affairs. Among the types of information included in the campus statement of policies and procedures are: (1) the types of student records and the information contained therein; (2) the official responsible for the maintenance of each type of record; (3) the location of access lists which indicate persons requesting or receiving information from the record; (4) policies for reviewing and expunging records; (5) the access rights of students; (6) the procedures for challenging the content of student records; (7) the cost which will be charged for reproducing copies of records, and (8) the right of the student to file a complaint with the Department of Health, Education and Welfare. An office and review board have been established by the Department to investigate and adjudicate violations and complaints. The office designated for this purpose is The Family Educational Rights and Privacy Act Office (FERPA), Department of Health, Education and Welfare, 300 Independence Avenue, S.W., Washington, D.C. 20201.
The campus is authorized under the Act to release public directory information concerning students. Directory information includes the student's name, address, telephone listing, date and place of birth, major of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student and any other information authorized in writing by the student. The above designated information is subject to release by the campus at any time unless the campus has received prior written objection from the student specifying 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. These 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 on the Basis of Sex

The California State University and Colleges 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 administrative regulations adopted thereunder prohibit discrimination on the basis of sex in education programs and activities operated by San Diego State University. Such programs and activities include admission of students and employment. Inquiries concerning the application of Title IX to program and activities of San Diego State University may be referred to the Affirmative Action Officer (265-6464), the campus officer assigned the administrative responsibility for reviewing such matters, or to the Regional Director of the Office of Civil Rights, Region 9, 1275 Market Street, 14th Floor, San Francisco, California 94103.

Nondiscrimination on the Basis of Handicap

The California State University and Colleges does not discriminate on the basis of handicap in violation of Section 504 of the Rehabilitation Act of 1973, as amended, and the regulations adopted thereunder. Specifically, the California State University and Colleges does not discriminate in admission, access, or treatment or employment in its programs and activities. The University to comply with the Act and its implementing regulations. Inquiries concerning compliance may be addressed to this office AD-231; telephone 265-5211.

Nondiscrimination on the Basis of Race, Color, or National Origin

The California State University and Colleges 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 excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program of The California activities of San Diego State University 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 points per unit earned in reporting are as follows: Grade of A (outstanding achievement), definitely above average), 4 points; B (praiseworthy performance; most common undergraduate grade), 3 points; C (average; awarded for satisfactory performance; the undergraduate average), 2 points; D (minimally passing; less than the typical counted in the grade point average), 1 point; F (failing), 0 points; SP (satisfactory progress), not AU (audit), no credit earned and not counted in the grade point average; W (withdrawal), not counted in the grade point average, signifying units earned, but not counted in the grade point average; NC (no credit), no credit earned and not counted in the grade point average; I (authorized incomplete), no credit earned and not counted in the grade point average until an acceptable grade is submitted, F (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+, F+ and F- are not issued. The decimal values of plus and/or minus grades are utilized in the calculation of grade point averages as follows:

A+ = 4.3
A = 4.0
A- = 3.7
C+ = 2.3
C = 2.0
F+ = 0
F- = -0.7
B+ = 3.3
B = 3.0
D+ = 1.3
D = 1.0
C+ = 1.7
U = 0

Satisfactory Progress Grade — "SP"

The "SP" symbol is used in connection with courses that extend beyond one academic term. It indicates that work is in progress and has been evaluated and found to be satisfactory to date, but that assignment of a precise grade must await completion of additional work. Work is to be completed within a stipulated time period. This may not exceed one year. Any extension of time limit must receive prior authorization by the Dean of Undergraduate Studies (for undergraduate courses) or the Dean of the Graduate Division and Research (for graduate courses).

Withdrawal Grade — "W"

The symbol "W" indicates that the student was permitted to drop a course after the fourth week of instruction because of a verified serious and compelling reason and has obtained the signature of the instructor and the approval of the College Dean or designee.

Withdrawals from class after the twentieth day of instruction and prior to the last three weeks of instruction are permissible only for serious and compelling reasons. Permission to withdraw 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 College Dean or designee, and approvals are made in writing on prescribed forms. Withdrawals are not permitted during the final three weeks of instruction, except in cases such as accident or serious illness where the cause of withdrawal 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 University, 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.

Auditing — "AU"

Enrollment as an instructor is subject to permission of the instructor; provided that enrollment in a course as an auditor shall be permitted only after students otherwise eligible to enroll on a credit basis have had an opportunity to do so. Auditors are subject to the same fee structure as credit students and regular class attendance is expected. Once enrolled as an instructor, a student may not change to credit status unless such a change is requested prior to the fourth week of instruction. A student who is enrolled for credit may not change to audit after the fourth week of instruction.

Credit/No Credit (Undergraduate Student Option) — "Cr/NC"

An undergraduate student may elect to be graded credit/no credit in particular courses, subject to the following conditions:

1. Courses graded credit/no credit (Cr/NC), whether taken at this or at another institution, may not be used to satisfy requirements for the student's major except for those courses identified in the course listing as graded "Cr/NC."
2. No more than 24 units graded credit/no credit may be offered in satisfaction of the total units required in a bachelor's degree program, except that all units accepted as transfer credit from another institution at the time of the student's admission may be used. If 24 or more units graded credit/no credit are transferred, the student may offer no additional courses graded credit/no credit to satisfy total units required for a bachelor's degree. Exceptions to this rule will be made if a student is required to take a course on a Credit/No Credit basis only.

3. If for any reason (change of major or transfer from another institution) courses graded credit/no credit are offered to satisfy requirements in the major, the student may be required by the major department to pass competency examinations at an acceptable level or take prescribed alternate courses before being allowed to continue in the major.

4. Change in grading basis may be made by obtaining the instructor's signature on a Credit/No Credit card and returning that card to the Student Services Counter (1st floor, Administration Building) on or before the last date on which a student may withdraw from class or change a program.

5. A grade of "Credit" is awarded for work equivalent to all grades which earn 2.0 or more grade points (A through C). "No Credit" is awarded for work equivalent to all grades which earn less than 2.0 grade points (C- through F).

6. The only courses a student may repeat with a credit/no credit option are those in which the student previously received a grade of "No Credit."

**Authorized Incomplete Grade — "I"**

The symbol "I" (incomplete authorized) indicates that a portion of required course work has not been completed and evaluated in the prescribed time period due to unforeseen, yet fully justified, reasons and that there is still a possibility of earning credit. It is the agreement on the means by which the remaining course requirements will be satisfied. The student and the instructor agree to a particular time limit for the removal of the Incomplete. The symbol "I" (incomplete authorized) must be removed or the time limit for removal of the Incomplete shall be reduced to writing by the instructor and is removed or the time limit for removal has passed. A final grade is assigned when the work agreed upon has been completed and evaluated.

Contract forms for Incompletes are available at department offices. An Incomplete must be made up within one calendar year immediately following the end of the term in which it was assigned. This limitation prevails whether or not the student year will result in an Incomplete being counted as equivalent to an "F" (or an "NC") if the student year was not completed and evaluated.

Candidates for graduation with the baccalaureate degree whose record carries a grade of Incomplete cannot be made up after the degree has been granted. If students do not their application for graduation.

**Unauthorized Incomplete Grade — "U"**

The symbol "U" indicates that an enrolled student did not withdraw from the course but completed assignments or course activities or both were insufficient to make normal computation of grade point average possible. For purposes of grade point average calculation, the symbol is equivalent to an "F." If a student attends a portion of a course and then, after receiving failing grades, stops attending without officially withdrawing, that student should normally receive a final grade of "F" and not "U."

**Computation of Grade Point Average**

To compute the grade point average, divide the total number of grade points earned by the number of units attempted. Units earned with a Cr (Credit) are not included in the computation until one calendar year has expired at which time it will count as an "E." The grade point average will remain on the transcript only the second grade will be used in computation of grade point averages. 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."

**Repealed 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. While the original grade will remain on the transcript, only the second grade will be used in computation of grade point averages. 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."

**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 or by letters (A, B, C, etc.) 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 in the upper division and 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—X-999 are those offered only through Continuing Education to meet specific academic needs of community groups. Courses at the X-900 level are designed to meet special or professional needs, and unless otherwise stated in the course description are applicable toward baccalaureate degree requirements at San Diego State University. Courses at the X-900 level are not acceptable on advanced degree programs.

**Final Examinations**

No final examination shall be given to individual students before the regular time. Any student who finds it impossible to take a final examination on the date scheduled must make arrangements with the instructor to have an incomplete grade reported and must take the deferred final examination within the time allowed for making up incomplete grades.

**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.

**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 listed 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 must be submitted before the end of the first week of classes (or the first week of summer term I) 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 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. Petition the Dean, College of Education, during the final undergraduate semester (or summer session) when graduation will occur to record a maximum of 12 units of excess 300-, 400-, or 500-numbered courses as "postbaccalaureate" (petition form available in Evaluations Office, AD-127);
5. Graduate 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 and correspondence credit do not count in satisfaction of the minimum residence which may be accepted as part of the requirements for the master's degree, subject to limitations described in the Graduate Bulletin. 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 upper division level. A second kind is offered by some departments at the X-900 level and designed to meet the needs of specific community groups. Courses at the X-900 level are description are applicable toward degree requirements at San Diego State University. Courses at the X-900 level are not acceptable on advanced degree programs.

Academic Credit Through Examination

Credit by Examination

Approval to receive undergraduate credit by examination is granted at the discretion of the appropriate college authorities and under the following conditions:
1. The student must be matriculated, in good standing (not on probation), be registered in 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.

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 5 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</th>
<th>SDSU course equivalents*</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>American History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>History 110A-110B</td>
<td>(6)</td>
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<tr>
<td>European History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>History 105, 106</td>
<td>(6)</td>
</tr>
<tr>
<td>English</td>
<td>3, 4, 5</td>
<td>6</td>
<td>English 100 and 220L</td>
<td>(6)</td>
</tr>
<tr>
<td>French</td>
<td>3</td>
<td>6</td>
<td>French 201 and 211</td>
<td>(6)</td>
</tr>
<tr>
<td>Classical Vergil</td>
<td>3, 4, 5</td>
<td>5</td>
<td>Classics 202L</td>
<td>(6)</td>
</tr>
<tr>
<td>Latin Prose</td>
<td>3, 4, 5</td>
<td>5</td>
<td>Classics 202L</td>
<td>(6)</td>
</tr>
<tr>
<td>Latin Lyric</td>
<td>3, 4, 5</td>
<td>5</td>
<td>Classics 202L</td>
<td>(6)</td>
</tr>
<tr>
<td>German</td>
<td>3</td>
<td>6</td>
<td>German 201 and 211</td>
<td>(6)</td>
</tr>
<tr>
<td>Spanish</td>
<td>4, 5</td>
<td>6</td>
<td>Spanish 201 and 211</td>
<td>(6)</td>
</tr>
<tr>
<td>Biology</td>
<td>4, 5</td>
<td>7</td>
<td>Spanish 202 and 212</td>
<td>(6)</td>
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<tr>
<td>Chemistry</td>
<td>3, 4, 5</td>
<td>10</td>
<td>Chemistry 200, 201L</td>
<td>(10)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3, 4, 5</td>
<td>5</td>
<td>Mathematics 150</td>
<td>(5)</td>
</tr>
<tr>
<td>Calculus AB</td>
<td>3, 4, 5</td>
<td>9</td>
<td>Mathematics 150</td>
<td>(5)</td>
</tr>
<tr>
<td>Calculus BC</td>
<td>3, 4, 5</td>
<td>9</td>
<td>Mathematics 150</td>
<td>(5)</td>
</tr>
<tr>
<td>Physics</td>
<td>3, 4, 5</td>
<td>8</td>
<td>Physics 180A-180B</td>
<td>(6)</td>
</tr>
<tr>
<td>Physics 182A-182B</td>
<td>3, 4, 5</td>
<td>8</td>
<td>Physics 195, 195L, 196, 196L</td>
<td>(8)</td>
</tr>
<tr>
<td>Art History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Art 225 and 255</td>
<td>(6)</td>
</tr>
<tr>
<td>Studio Art</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Art 100, 102 or Art 101, 103</td>
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<tr>
<td>Music</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Music 102, 151</td>
<td>(6)</td>
</tr>
</tbody>
</table>

* Credit may not be earned at SDSU for courses which duplicate credit already allowed for examinations as listed under SDSU course equivalents.

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 exceed 30 units as applicable to graduation; and does not count as residence credit.
5. Credit-by-examination is not treated as part of the student's study load and, therefore, is not considered by the Veterans Administration in the application of their regulations; and is not always accepted as transfer credit between collegiate institutions. In summer sessions the total units earned for courses and examinations cannot exceed the limit authorized by the Education Code.
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 of 50 or above on any test of the General Examinations of the College Level Examination Program exclusive of English. Credit may also be allowed for the Special Examinations of CLEP in mathematics. Scores should be forwarded to the Admissions Office for evaluation.

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 and enrolled at the university.

Student Classification

A matriculated student is one who has complied with all requirements for admission to the university and has received his official Notice of Admission. All students taking courses in any regular semester must be matriculated students. Only in summer sessions or in 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 session student. Each student who enrolls in one or more extension classes shall be classified by the student's college as an extension class student. Such students need not be matriculated students as a prerequisite for enrollment in 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 who has been admitted to the University with postbaccalaureate standing. For information on classification of graduate students, see the Graduate Bulletin.

Student Program and Records

Transcripts of Record

A student may obtain an official transcript of his record by filing an application at the Admissions and Records Office. A fee of $2 is charged for all transcripts and must be paid in advance. One transcript should be allowed for the processing and mailing of the transcript.

San Diego State University provides for change of program beginning the first day of classes each term. Change of program includes withdrawal from a class, adding a class, or 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 time the professor gives his/her place to another student, the student is responsible for obtaining permission to drop the class.

Change of Program is permitted without effect on record or grade and with no restriction of penalty beginning the first day of class and ending the twentieth day of classes.

Withdrawals from class after the twentieth day of instruction and prior to the last three weeks of instruction, except in cases such as accident or serious illness where the cause of withdrawal 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 proper 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 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, any student wishing to change his major or curriculum must make application at the Evaluations Office.

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 request 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; and
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 is as follows:

1. Obtain the Petition from the Admissions and Records Office on the first floor of the Administration Building.
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. A
student withdrawing during the refund period is no longer considered a continuing student and is required to apply for readmission. A course will not appear on the permanent record if withdrawal occurs before the end of the 20th day of classes. During the final three weeks of instruction, withdrawals are not permitted except in cases where the course of withdrawal is due to circumstances clearly beyond the student's control. Credit or an incomplete may be assigned for courses in which sufficient work has been completed to permit an evaluation to be made.

Unofficial Withdrawal. Students withdrawing unofficially from class or from the university will receive failing grades in all courses which they stop attending. An unofficial withdrawal is 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 unofficial withdrawal.

Educational Leave of Absence. Students are permitted to take a total of two semesters of approved leave of absence during their matriculation at San Diego State University if it can be established that the leave will contribute to a student's educational objective. Students are not penalized for taking leaves. No fees are involved.

At least five weeks prior to registration period for the semester during which he or she wishes a leave, a student must file application for the leave at the Admissions and Records Office. Deadlines for filing may be obtained at that office. Requests will be reviewed by appropriate officials designated by the Vice President for Academic Affairs. Leaves cannot be revoked once granted, and no student will be permitted to register for a semester for which he has filed application for leave.

Approval for leaves of absence will not be granted to students who have been admitted students who are disqualified. To be eligible for leave an undergraduate must be eligible to graduate and not have completed at least one semester before the leave of absence period, or to return as an undergraduate, students qualifying for change in status from undergraduate to graduate are not eligible.

Re-admission. A student who withdraws from the university must file application for readmission if full semester elapses between his/her withdrawal and return. A $25 fee for readmission is required if the applicant was not regularly enrolled in either submitted, or if the student was enrolled at another institution subsequent to the last attendance at San Diego State University.

Evaluation. An evaluation is a summary of college work completed and of requirements to be completed for a bachelor's degree or credential. To be eligible for an evaluation, a major, and be qualified for full matriculation Authorization for more than one evaluation during any one semester or one evaluation in nine weeks of summer session requires special permission.

A student who has earned 56 semester units or more, who has not received an evaluation, should apply at the Evaluations Office for an official evaluation. The evaluation is made on provided in the California Administrative Code, Chapter 5, Section 40401, Election of Requirements. (Further information is given in the section of this catalog on Graduation 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 reevaluation.

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 16 weeks. Two hours of activity equivalent to one hour of lecture. At registration time, students will not be permitted to enroll for more than 18 units. After students are employed outside of college they are strongly advised to undertake a modest college program. Going to college is properly a full-time job. Normally a student can expect to spend in class and study a total of three hours per week for each unit of college work attempted. A normal 16-unit load therefore represents a 48-hour week.

Dean's List

The Dean's List recognizes academic achievement within a single semester. Students must place within the top ten percent of the school or college in which they are majoring, and have a grade point average of at least 3.50 based on a minimum of 12 units of credit for courses in which letter grades were assigned. The computation of grade points will be made six weeks after the end of the semester to include students who complete incomplete grades promptly. Students will be recognized by the Dean of their respective College; undeclared and liberal studies majors will be listed by the Dean of Undergraduate Studies.

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 at this institution falls below 2.0. An undergraduate student on academic probation is subject to administrative disqualification:

A. As a lower-division student (less than 60 semester hours of college work completed) if a student fails 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 (60-89 semester hours of college work completed) if a student fails nine or more grade points below a 2.0 (C) average on all units attempted at this campus.

C. As a senior (90 semester hours of college work completed) if a student fails 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.

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 (when 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 routine for all students or a defined group of students. (example: failure to take placement 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 conditions for removal of administrative academic probation are not met within the period specified.

B. The student becomes subject to academic probation while on administrative academic probation.

C. The student becomes subject to administrative academic probation for same or similar reason for which the student has been placed on administrative academic probation previously, although not currently in such status.
Student Discipline and Grievances

Inappropriate conduct by students or by applicants for admission is subject to discipline as provided 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. Following procedures consonant with due process established pursuant to Section 41304, any student of a campus may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be campus related:

(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, or other campus function.
(e) Physical abuse on 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 or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.
(i) Violation of a, or directed toward, or hazing of a member of the campus community, such violation and during the academic term in which the violation occurs, either by either by publication in the campus newspaper, or by posting on an official bulletin board designated for the purpose, and which order is not inconsistent with any of the other 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 administrative personnel, students, and other persons while such other persons are on campus property or at a campus function.
   (2) The term "campus property" includes:
      (A) real or personal property in the possession of, or under the control of, the Board of Trustees of The California State University and Colleges, and all campus feeding, retail or residence facilities whether operated by the campus or by a campus auxiliary organization.
      (B) commonly known as a blackjack, slingshot, billy, sandbag, metal firecracker, any knife having a blade longer than five inches; any razor with a club.
   (4) The term "behavior" includes conduct and expression.
   (5) The term "hazing" means any method of initiation into a student organization of which causes, or is likely to cause, bodily danger or physical or emotional harm include customary athletic events or other similar contests or competitions.

41302. Expulsion, Suspension or Probation of Students: Fees and Notification. 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 1954 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 lives or property and to ensure the maintenance of order. A student so placed on interim suspension shall be given prompt notice of charges and the opportunity for a hearing within 10 days of the imposition of interim suspension. During the period of interim suspension, the student shall not, without prior written permission of the President or designee representative, enter any campus of The California State University and Colleges other than to attend the hearing. Violation of any condition of interim suspension shall be grounds for expulsion.

Standards and procedures of discipline at San Diego State University are determined by these regulations and are coordinated by the Office of Judicial Procedures.

41303. Conduct by Applicants for Admission. Notwithstanding any provision in this Chapter 1 to the contrary, admission or readmission may be qualified or denied to any person while not enrolled as a student, commits acts which were he enrolled as a student, would be the basis for disciplinary proceedings pursuant to Sections 41301 or 41302.

Admission or readmission may be qualified or denied to any person who, while a student, commits acts which are subject to disciplinary action pursuant to Section 41301 or Section 41302. Qualified admission or denial of admission in such cases shall be determined under procedures adopted pursuant to Section 41304.

41304. Student Disciplinary Procedure for The California State University and Colleges. The Chancellor shall prescribe and, and may from time to time revise, a code of student disciplinary procedures for The California State University and Colleges. Subject to other applicable law, this code shall provide for determinations of fact and sanctions to be applied for conduct which is a ground of discipline under Sections 41301 or 41302, and for qualification admission or denial of admission under Section 41303, the authority of the campus President in such matters; conduct related determinations on financial aid eligibility and termination; alternative kinds of proceedings, including proceedings conducted by a Hearing Officer; time limitations; notice; conduct of hearings, including provisions governing evidence, a record, and review; and such other related matters as may be appropriate. The Chancellor shall report to the Board his actions taken under this section.

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 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 the Aztec Center.
Graduation Requirements for the Bachelor's Degree

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

1. Students who declare their major, or change their major, during the 1980-81 academic year must meet all graduation requirements appearing in this catalog. However, students may remain with the general education requirements in effect during the year in which they entered SDSU, another campus in the CSUC system, or a California community college. Students may continue to use this catalog in subsequent years so long as they remain in continuous enrollment at the University or are on approved leave of absence, provided they do not change their majors. If students change or declare their majors in subsequent years, they must adopt the catalog in effect at the time of such change or declaration; they may continue with this catalog only with regard to their 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 December 1980, May 1981, or in the 1981 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 normally filed in the fall semester of the senior year. 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 card at the Evaluations Office, Administration Building.

I. Competency Requirements

Competency in basic mathematics and standard written English is regarded as essential to successful study in the university environment.

A. Mathematics. All undergraduates, both freshmen and transfers, must satisfy this requirement at time of entrance or within two semesters thereafter. The completion of prior courses in mathematics or remedial mathematics is not a basis for exemption. An examination which waived those courses on another campus will not be accepted unless that examination is among those listed below. The requirement can be satisfied in any of the following ways:

1. By a score of 470 or higher on the mathematics section of the Scholastic Aptitude Test (SAT).
2. By a standard score of 17 or higher (not a percentile score) on the mathematics section of the American College Test (ACT).
3. By taking the SDSU Mathematics Placement Examination and qualifying for any course for which Mathematics 103 is a prerequisite.
4. By a score of 500 or higher on the Mathematics General Examination of the College Level Examination Program (CLEP).
5. By a score of 3, 4, or 5 on The College Board Advanced Placement Test in Calculus, either AB or BC.
6. By a passing score on the General Mathematics Examination of the Mathematics Equivalency Examination (MEE) administered by The California State University and Colleges each spring at each CSUC campus.
7. By a passing score on the SDSU Mathematics Competency Test or Retest.

Students who have not satisfied this requirement at time of entrance must take the SDSU Mathematics Competency Test or Retest at the University Test Office (LE 560, 265-5216) sometime prior to or during their first semester on campus. Students who do not pass the Mathematics Competency Test or Retest must register in Mathematics 102 (Fundamentals of Mathematics, 3 units) in either their first or second semester at San Diego State University. Students failing to do so will be subject to Administrative Academic Disqualification at the end of the second semester; reinstatement thereafter will be conditional upon satisfaction of the Mathematics Competency Requirement. Only those students who have failed the San
Diego State University Mathematics Competency Test will be permitted to register in Mathematics 102, and successful completion of that course will satisfy the competency requirement.

B. Writing. All undergraduates, both freshmen and transfers, must satisfy this requirement at time of entrance or within two semesters thereafter. The completion of prior courses in English composition or developmental English is not a basis for exemption. Examinations which waived those courses on other campuses will be accepted only if the examinations are among those listed below. The requirement can be satisfied in any of the following ways:

1. By a score of 40 on the Test of Standard Written English (TSWE), offered as a part of the Scholastic Aptitude Test (SAT) since October 1974.
2. By a score of 16 on the verbal section of the American College Test (ACT).
3. By a score of 3.4, or 5 on The College Board Advanced Placement Test in English (May grant up to six units of credit.)
4. By passing the English Equivalency Examination (EEE) administered by The California State University and Colleges each spring at each CSUC campus. (May grant up to six units of credit.)
5. By scores of 8 (essay) and 151 (total) on the English Placement Test (EPT) administered through The California State University and Colleges.
6. By a passing grade in Study Skills 150 at SDSU.

Students who have not satisfied this requirement at the time of entrance must either score at the indicated level on one of the examinations listed above or register in Study Skills 150 (Writing Development, 3 units) in either their first or second semester at SDSU. Failure to qualify in the above methods will result in Administrative Academic Disqualification at the end of the second semester. Reinstatement thereafter will be conditional upon satisfaction of the Writing Competency Requirement. For further information contact the SDSU Test Office (LE-560; 265-5216) or the Study Skills Center (LE-468; 265-6515).

NOTE: All students subject to degree requirements of 1977-78 and subsequent general catalogs must demonstrate competency in writing skills as a requirement for graduation. In order to take the CSUC English Placement Test (EPT) that information can be obtained in the selection of appropriate coursework in writing skills and to prepare earliest opportunities to meet the writing requirements. Failure to take the English Placement Test at the end of the second semester will result in denial of certification. Failure to meet the writing requirement may lead to disqualification from further attendance. The results of the EPT will not affect admissions eligibility.

Information bulletins and registration materials for the EPT will be mailed to all students subject to subject to these requirements. Alternatively, the materials may be obtained from the Office of Admissions and Records. Information on currently available ways to meet the graduation requirements is available from the Department of Undergraduate Studies.

II. 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. Liberal Arts and Sciences must complete a foreign language requirement. See item IV.

B. Foreign Language. Students whose majors lead to the Bachelor of Arts degree in listed below.

C. Major. Completion of a departmental or an interdisciplinary major is required. A major of the subject matter and its organizing concepts. It consists of 24 or more upper division courses and 30 or more units for the Bachelor of Science degree. At departmental levels, however, in no case shall a student be allowed to complete less than 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 satisfaction of the major cannot be used to meet requirements in general education or a minor.

A student may wish to major in two departments. If so, the requirements for both majors must be satisfied. Units for courses which could satisfy the requirements in both majors can be counted only once. Only one diploma will be granted but the transcript will note the completion of each major.

D. Minor. Completion of a minor is necessary if required by the major; the decision otherwise to have, or not to have, a minor is left with the student. Like the major, the minor offers an integrated and coherent pattern of course work, combining lower and upper division course work in proportions appropriate to the various disciplines. The minor shall consist of 15-24 units; minors which require considerable lower division preparation for upper division work will tend to include more units than minors where this is not the case. Normally, 12 units of course work in the minor will be upper division units, but in minors, where the number of prerequisite lower division units makes it impossible to take 12 upper division units without exceeding a total of 22-24 units, the required upper division course work may be reduced to six units. A summary list of all minors appears at the close of this chapter; the full statement of requirements for each minor can be found through the Index. 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.

III. 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 (60 minutes), and a third in California Government (60 minutes).

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

1. American Studies 170A-170B
2. History 110A-110B
3. History 115A-115B
4. History 310A-310B
5. History 547A-547B
6. Mexican-American Studies 120A and 120B
7. Mexican-American Studies 141A and 141B
8. Political Science 101 and 102
9. Political Science 305 and 320
10. Political Science 305 and 321
11. Political Science 305 and 522
12. Political Science 320 and 321
13. Political Science 320 and 522
14. Political Science 320 and 522
15. Political Science 547A and 547B

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 each area are listed below.

1. American History, Institutions and Ideals:
   - All pairs of courses listed in III.B above and History 537A-537B, 544A-544B, and 547A-547B.
2. United States Constitution:
3. California State and Local Government:
   - Afro-American Studies 170B; History 110B, 115B, 310B, 541B, 547B; Mexican-American Studies 120B, 141B; Political Science 102, 320, 321, 522.

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, Article 5, Section 40404, has been satisfied.

NOTE: Three units in courses taken to satisfy the American Institutions requirement may be used for general education credit in the Humanities or Social Science section if listed.
IV. Foreign Language Requirement

(Liberal Arts and Sciences, A.B. degree only)

The Bachelor of Arts degree in Liberal Arts and Sciences requires competency (equivalent to that which is normally attained through three consecutive 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 four high school years of 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 to satisfy this requirement, as follows:

1. Three high school years of one foreign language course count as the equivalent of one college semester of a college language course; three years in high school count for two college semesters; and four high school years count for three college semesters.
2. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

Native speakers from foreign countries who have finished high school or the equivalent in that country will not be given credit for taking lower division courses in their native language except with advance approval from the department.

(B.M. Degree, Applied Arts and Sciences only)

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 — 12 units of one foreign language chosen from French, German, or Italian.
3. All other — eight units of one foreign language chosen from French, German, or Italian (except that classical guitar students may substitute Spanish).

V. Physical Activities Requirement

A. Physical Activities. A minimum of two semesters of physical education activity courses, or equivalent monitored activities (including intramural athletics), or a combination of courses and monitored activities are required for graduation. No more than one activity course or monitored activity in any one semester may be counted toward this requirement. An activity course taken in the summer session may be counted in lieu of one taken during the fall or spring semester. Any combination of activity courses and monitored activity may be used.

B. Exemptions: Veterans having served one continuous year on active duty in the United States armed forces are exempt from this requirement. In addition, students having passed their twenty-fifth birthday at time of entrance are also exempt.

VI. Unit Requirements

A. Total unit requirement. The total number of units necessary for a bachelor's degree is as follows:

1. For the Bachelor of Arts degree in Applied Arts and Sciences
2. For the Bachelor of Arts degree in Liberal Arts and Sciences
3. For the Bachelor of Science degree (except engineering)
4. For the Bachelor of Science degree in Engineering
5. For the Bachelor of Music degree
6. For the Bachelor of Vocational Education degree

The degree which applies to a particular student is determined by the student's choice of the applicable degree. The full statement of each major can be found by consulting

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
2. For the Bachelor of Arts degree in Liberal Arts and Sciences
3. For the Bachelor of Science degree (except engineering)
4. For the Bachelor of Science degree in Engineering
5. For the Bachelor of Music degree
6. For the Bachelor of Vocational Education degree

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 a student's American institutions and the general education requirements.

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

1. From transferable community and junior college courses
2. From credit by examination
3. From extension and correspondence courses
4. From credit/no credit courses
5. From topics courses numbered 296, 496, 596
6. From Study Skills courses and Mathematics 102
7. From University Studies courses numbered 200 and 400
8. From courses in the major

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 36 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 maximum 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 126 units).
4. Other degrees. The maximum number of units per department for other degrees is left to the discretion of the student, except the Bachelor of Arts degree in Applied Arts and Sciences with a major in Radio-Television in which no more than 27 upper division units in telecommunications and film may be counted toward the total units required for graduation.

VII. Residence Requirement

A minimum of 30 units must be earned in courses taken at San Diego State University. Twenty-four of these units shall be earned in upper division courses. In addition, 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 less than twelve units in the major. Courses taken in extension and units earned through credit-by-examination may not be used to fulfill this requirement.

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 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 enrich students' overall academic programs and to complement their mastery of a more specialized subject area.

The General Education program at San Diego State University is evolutionary in nature. A permanent committee of faculty and students reviews the program continuously and encourages the development of new courses, concepts, and learning experiences. The program has several major objectives: (1) to promote the development in students of the intellectual capabilities necessary to the enterprise of learning; (2) to introduce students to the models of thought characteristic of diverse academic disciplines; (3) to help them to understand the conditions and forces which shape their lives, and (4) to assist them in learning to apply critical and informed judgments to the cultural achievements of their own and other cultures.

Course Work Excluded from General Education. The general education program has certain educational objectives not characteristic of other types of course offerings in the curriculum. Hence, 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 102, 103, and all Study Skills courses.
3. Course work in excess of 12 units in one department.
4. Courses numbered 296, 496, 596 (Topics).
5. Course work in excess of three units used to satisfy the American Institutions requirement (hence, three of the six units of the requirement may be met by taking courses) may be counted in the Humanities or Social Sciences section of the general education program.
6. Course work used to satisfy the Physical Activities graduation requirement.

Transfer Students. Transfer students who are certified by their previous (regionally accredited) institutions to have completed the 40-unit, state-mandated general education requirements as outlined in the California Administrative Code, Title 5, will not be required to take additional general education courses at San Diego State University. Partial completion of course work in major areas of general education, will also be accepted.

The Program in General Education

The program consists of a minimum of 40 semester units, distributed as indicated below. The three major components—Basic Subjects, Foundations of Learning, and Explorations in the Humanities—should be taken sequentially so that the study of each rests on the foundation created in the one preceding it.

Undergraduate students spend approximately one-third of their college years taking courses designated as "general education." Course work in general education is an program, complementing their mastery of a specialized subject matter. In addition, it is expected of a responsible and enlightened individual.

BASIC SUBJECTS

Basic Subjects are courses in written and oral communication skills in English and in the analytic skills developed in logic, mathematics, and statistics. Basic Subjects, the context of the university at large, and are not "foundations" courses which are intended and the unique methodologies of such inquiries. These courses are required prior to the completion of the first year of college.

Course Work in Basic Subjects. A minimum of nine units distributed as follows:

1. English Composition (Three units):
   - Afro-American Studies 120A. Composition and Reading (3)
   - English 100. College Composition (3)
   - Mexican-American Studies 111B. Written Communication (3)

2. Logic, Mathematics, Statistics (Three units from any of the following courses):
   a. Logic
      - Philosophy 120. Logic (3)
   b. Mathematics
      - Mathematics 118. Topics in Mathematics (3), or higher numbered course, with the exception of Computer Programming courses.
   c. Statistics
      - Economics 201. Statistical Methods (3)
      - Mathematics 119. Elementary Statistics (3)
      - Political Science 201. Elementary Statistics for Political Science (3)
      - Psychology 270. Statistical Methods in Psychology (3)
      - Sociology 201. Elementary Social Statistics (3)

3. Intermediate Written Communication, Oral Communication (Three units selected from the following courses):
   - Afro-American Studies 140. Oral Communication (3)
   - English 200. Intermediate Composition (3)
   - English 280. Introduction to Creative Writing (3)
   - Mexican-American Studies 111A. Oral Communication (3)
   - Speech Communication 103. Oral Communication (3)

FOUNDATIONS OF LEARNING

Foundations of Learning courses follow and build upon Basic Subjects and prepare students to undertake more complex subject matters. Foundations of Learning courses are offered by individual departmental disciplines and in certain interdisciplinary areas in the social and behavioral sciences, the natural sciences, and humanities. Foundations of Learning courses should introduce students to a variety of disciplines, their subject matters and the diverse conceptual frameworks by which scholars in different fields approach these subjects. The purpose of this portion of General Education is to familiarize the student sufficiently with such modes of thought as to be competent to apply them to the varieties of human concerns and experiences. Courses in the Foundations of Learning should be taken prior to courses in the Explorations in the Human Experience section of General Education.

Course Work in the Foundations of Learning. A minimum of 22 units, distributed as follows:

1. Natural Sciences (Seven units to include a laboratory).
   a. Life Sciences — At least three units from the following courses:
      - 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 320. Agricultural Botany of the Imperial Valley (4)
      - Microbiology 110. Microbiology and Man (3)
      - Microbiology 110L Microbiology and Man, Laboratory (1)
      - Natural Science 110B. Energy in Nature with Laboratory (4)
      - Zoology 100. Evolution and Diversity of Animals (3)
      - Zoology 100L Evolution and Diversity of Animals Laboratory (1)
   b. Physical Sciences — At least three units from the following courses:
      - Astronomy 101. Principles of Astronomy (3)
      - Astronomy 103. The Structure of Scientific Thought (3)
      - Astronomy 109. Astronomy Laboratory (1)
Graduation Requirements

1. Physical Geography Laboratory (3)
2. General Geology Laboratory (3)
3. Physical Science Laboratory (2)
4. Natural History Laboratory (4)
5. Laboratory Exercises in Physical Science (2)
6. Energy in Nature Laboratory (4)
7. Physics for Poets (3)
8. Elementary Physics (4)

*Only one of these three courses may be taken for general education credit in Natural Science.

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 a student's major, he or she may substitute a course acceptable in preparation for the major in any of those disciplines, in lieu of courses listed above for general education.

b. If a student does so, 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. Undergraduates who take non-major science education courses in those disciplines, in anticipation of declaring a major which requires such course work, are included in a. and b. above.

2. Social and Behavioral Sciences (Six units to include a 3-unit course in two different disciplines):

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)
Mexican-American Studies 140. History and Sociology of Racism (3)
Political Science 101. Introduction to Political Science (3)
Political Science 102. Introduction to American Government and Politics (3)
Political Science 302. Modern Political Thought (3)
Psychology 101. Introductory Psychology (3)
Sociology 101. Introductory Sociology (3)
Women's Studies 201. Sexism and the Social Sciences (3)

*Either of these courses may be taken for general education credit, but not both.

3. Humanities (Nine units to include a 3-unit course in three of the following four areas):

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

b. Art, Drama, Humanities, Music
   Art 157. Introduction to Art (3)
   Art 258. Appreciation and History of Art (3)
   Art 259. Appreciation and History of Art (3)
   Drama 105. Introduction to the Theater (3)
   Drama 120. Dramatic Heritage (3)
   Humanities 101. Introduction to Humanities (3)
   Humanities 102A-102B. Introduction to European Heritage (3-3)
   Humanities 140. Mythology (3)
   Music 151. Introduction to Music (3)

EXPLORATIONS IN THE HUMAN EXPERIENCE

Based upon Foundations of Learning, the third section of the general education program affords students an opportunity to explore fundamental human concerns, especially as they affect contemporary men and women. These concerns cannot be addressed solely from the perspective of the humanist or the social scientist or the natural scientist, but require the intellectual collaboration of scholars and teachers from many diverse academic areas. Explorations in the Human Experience consists primarily of upper division courses organized around themes or topics relevant to general education. Students are encouraged and expected to complete course work in Basic Subjects and Foundations of Learning before undertaking course work in this section of the program.

Patterns of Study

Explorations in the Human Experience may be completed in one of the following ways:

1. Students may identify a theme listed below and complete any three courses (a minimum of nine units) listed under the theme.

2. Students may design their own themes in the following manner:
   - With the approval of the college of their major (or the Undergraduate Division for undeclared and Liberal Studies majors), students may design a theme containing nine units of course work. The courses selected must relate closely to a general topic or theme which the student has devised, and they must be offered by at least two colleges. At least six units must be selected from among courses approved for Foundations of Learning and/or Explorations in the Human Experience, and no courses from Basic Subjects may be used in student-designated themes.

Regardless of the pattern of study chosen, students are subject to the following additional qualifications:

1. Students may take no more than one course per department or interdisciplinary program, except for Theme 27 (National Cultures and Civilizations of the West) and Theme 28 (Foreign Language Study).

2. Students required to take foreign language courses among the requirements for a degree cannot use those courses to satisfy Explorations in the Human Experience.

3. Students may not use upper division courses in their major as part of the Explorations in the Human Experience.

Note: Within these patterns of study in the Human Experience, course work may be taken in the form of a foreign travel study tour directed by a faculty member when offered by the College of Extended Studies with credit approved by the department in which the course is regularly offered, the Dean of the College of that department, and the Dean of the College of Extended Studies.
1. The Way We Are: Human Nature and Behavior

The behavior of contemporary men and women is conditioned by psychological, genetic, and environmental factors of great complexity. This theme explores various dimensions of this behavior, including the impact on modern life of culture and society, racial and sexual characteristics, and genetic factors.

* Afro-American Studies 445. Ethnicity and Social Psychology (3)
* Anthropology 432. Principles of Personality in Culture (3)
* Biology 145. Introduction to Heredity (3)
* English 301. The Psychological Novel (3)
* Philosophy 310. Philosophy and Human Nature (3)
* Political Science 325. Political Behavior (3)
* Psychology 342. Public Opinion Measurement (3)
* Psychology 351. Psychology of Personality (3)
* Recreation 104. Challenges of Leisure (3)
* Religious Studies 353. The Human Dimension of Religion and Psychology (3)
* Women's Studies 325. Psychology of Women (3)
* Zoology 340. Sociobiology (3)

2. Social Change in the Third World

The relationship between the industrialized world, represented largely by the West, and the non-industrialized societies of Asia, Africa and Latin America is a central and continuing problem in the modern world. The aim of this theme is to introduce students to the problems and processes of social change in the Third World (non-industrialized societies) in an interdisciplinary and cross-cultural framework. The term "social change" is used here in a broad sense to embrace transformations in all major aspects of social life, particularly in the nineteenth and twentieth centuries, in Third World societies.

* Anthropology 425. Peasant Society and Culture (3)
* Anthropology 426. Cultural Change and Processes (3)
* Comparative Literature 272A. Third World Literature (3)
* Economics 365. Economics of Underdeveloped Areas (3)
* Geography 521. Urbanization and Modernization in Latin America (3)
* History 555. Revolution and Social Change in Asia (3)
* Political Science 364. Political Change in Contemporary Africa (3)
* Political Science 381. International Relations of the Developing Nations (3)
* Political Science 561. Governments and Politics of the Developing Areas (3)
* Sociology 506. Modernization of Traditional Societies (3)
* Women's Studies 310. Women in Comparative Cultures (3)

3. Ways of Thinking and Knowing

The idea that mankind can add to knowledge through scientific investigation and observation is, historically speaking, a fairly recent development. Other sources of knowledge such as intuition, revelation, religious revelation, artistic perceptions, and human knowledge, have much longer histories and continue to compete with science as sources of information. In this theme students will explore several "ways of knowing" and the acquisition of knowledge.

* Anthropology 425. Peasant Society and Culture (3)
* Anthropology 426. Cultural Change and Processes (3)
* Comparative Literature 272A. Third World Literature (3)
* Economics 365. Economics of Underdeveloped Areas (3)
* Geography 521. Urbanization and Modernization in Latin America (3)
* History 555. Revolution and Social Change in Asia (3)
* Political Science 364. Political Change in Contemporary Africa (3)
* Political Science 381. International Relations of the Developing Nations (3)
* Political Science 561. Governments and Politics of the Developing Areas (3)
* Sociology 506. Modernization of Traditional Societies (3)
* Women's Studies 310. Women in Comparative Cultures (3)

* Indicates courses with prerequisites, most of which are offered in Basic Subjects or Foundations of Learning.

4. The Environment and Human Life

Throughout human history, people have had to answer fundamental questions about their relationship to nature. Their answers have influenced the quality of their lives and even their existence. Concern for the environment is concerned for the human condition, a continual struggle to break out of the biological and social constraints of disease, famine, war, ignorance, and superstition. Courses in this theme explore the fundamental nature of ecosystems and the role of mankind in adapting to or modifying the natural world. Environmental degradation and the attendant ethical, social, political, and economic question will be emphasized.

* Anthropology 425. Ecological Anthropology (3)
* Biology 130. Ecosystems and Man (3)
* Chemistry 301. Chemical Principles in Environmental Protection (3)
* Economics 453. Economics and Ecology (3)
* Engineering 150. Control of the Human Environment (3)
* Geography 370. Conservation of Environmental Quality (3)
* Geology 303. Environmental Geology (3)
* History 340. Environmental Problems in Historical Perspective (3)
* Oceanography 320. The Oceans (3)
* Political Science 334. Politics of the Environment (3)
* Recreation 205. Wilderness and the Leisure Experience (3)
* Sociology 550. Population and Contemporary Issues (3)

5. Human Communication

Human beings spend more of their waking hours in communication than they do in any other single activity. It is the process of communication that holds society together. Communication constitutes the environment in which all of us must live, and is an inescapable—and as much a potential source of pollution—as the air we breathe. Without communication skills, both verbal and nonverbal, a human being cannot function effectively within this environment. In this theme we consider communication from three perspectives: as an abstract entity and an object for scientific examination; as it affects the individual within a single society; and as it affects individuals across cultural or societal boundaries.

* Anthropology 410. Language in Culture (3)
* Classics 120. Latin and Greek Word Derivation (3)
* Educational Technology and Librarianship 400. Technology and Lifelong Learning (3)
* Journalism 500. Current Problems in Mass Communications (3)
* Linguistics 551. Sociolinguistics (3)
* Linguistics 552. Psycholinguistics (3)
* Political Science 326. Political Communication (3)
* Sociology 545. Sociology of Mass Communication (3)
* Speech Communication 475. Intercultural Communication (3)
* Speech Communication 530. Semantics (3)
* Speech Communication 532. Persuasion (3)
* Speech Pathology and Audiology 305. Speech and Language Development and Communication Disorders (3)
* Telecommunications & Film 160. Cinema as Art and Communication (3)

* Indicates courses with prerequisites, most of which are offered in Basic Subjects or Foundations of Learning.
6. Natural Resources for the World's Future

The dependency of people upon limited resources and the need to improve the conservation of those resources to permit an acceptable quality of life for present and future generations of the world's population have been emphasized by environmental and energy experts for a number of years. The current generation of students is likely to be the first of many to receive the major impact of recent past and present policies for resource utilization, and it is likely to be the first of many which must effectively cope with the problems of diminishing resources and deteriorating environments. This theme provides a basis for students to understand the historical attitudes which have prevailed and which have led to present conditions, the particular problems which exist now, and possible consequences for the future. The questions of natural resource availability, utilization, and conservation are intrinsically interdisciplinary and constitute an increasingly significant problem for a world entering "an era of limits."

- Biology 320, Concepts of Ecology (4)
- Biology 420, Conservation of Wildlife (3)
- Economics 452, Economics of Energy Resources (3)
- Engineering 360, Energy: Issues and Ideas (3)
- Geography 531, Economic Geography: Primary Production (3)
- Geography 371, Conservation of Natural Resources (3)
- Geography 574, Water Resources (3)
- History 540, Environmental History of the United States (3)
- Physics 301, Energy and Conservation (3)
- Zoology 430, Insects in Perspective (3)

7. Cross-Cultural Understanding: Issues and Challenges

This theme presents an interdisciplinary approach to cultures, with an emphasis on patterns of contact, communication, and adjustment. Topics include basic relationships of values, language, and behavior; how environment and history produce cultural differences; how cultures interact socially and politically; American challenges to cultural understanding at home and abroad; and how different cultures can be appreciated and enjoyed.

- Afro-American Studies 102, Afro-American Life-Styles (3)
- Anthropology 350, World Ethnography (3)
- Comparative Literature 271B, Asian Literature (3)
- History 421, Asia's Emerging Nations (3)
- Mexican-American Studies 316, Chicano Literature (3)
- Political Science 381, International Relations of the Developing Nations (3)
- Sociology 529, Minority Group Relations (3)
- Sociology 536, The Family in Cross-Cultural Perspective (3)
- Sociology 540, Spanish Civilization (3)
- Speech Communication 475, Intercultural Communication (3)

8. Science, Technology and Society

This theme focuses on the historical and contemporary relationship between science technology and society. The theme will explore these relationships by studying the impact of science and technology on human values, the degree to which science and technology have affected the quality of human life, and the institutions society has developed to cope with the theme. The theme will study science as a social institution. Also, a survey of major included.

- American Indian Studies 400, American Indian Political Experience (3)
- American Indian Studies 450, American Indian Business History (3)
- American Indian Studies 455, American Business History (3)
- American Indian Studies 465, American Indian Political Experience (3)
- Anthropology 241, The California Indian (3)
- Anthropology 441, The California Indian (3)
- Comparative Literature 272B, Third World Literature (3)
- Economics 332, Capitalist Economy (3)
- Economics 333, Technology and Human Values (3)
- English 506, Mass Communication and Society (3)

9. The American Indian-Black-Chicano Experience in America

Many students are unfamiliar with the history, experience, cultures, and social patterns of the American Indian, Afro-American, and Mexican-American communities. These groups of courses are selected to improve their understanding and appreciation of America's ethnic mosaic and contributions of these communities to the development of American society.

- American Indian Studies 101, Introduction to Afro-American Studies (3)
- American Indian Studies 102, Afro-American Life-Styles (3)
- American Indian Studies 250, Psychology of Blackness (3)
- American Indian Studies 461, Afro-American Literature (3)
- American Indian Studies 110, American Indian Heritage (3)
- American Indian Studies 200, American Indian Literature (3)
- American Indian Studies 255, American Indian Music (3)
- American Indian Studies 265, American Indian Art (3)
- American Indian Studies 110A, Introduction to Mexican-American Studies (3)
- American Indian Studies 115, Mexican-American in Transition (3)
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10. Cultural Pluralism in America

Cultural pluralism is a fundamental characteristic of American society. This theme examines the group structure of society especially in terms of relations among racial and ethnic minority groups and between such groups and the dominant culture, and in terms of women, religious minorities and other significant groups within society. It also explores strategies that have been used to promote positive relations among the diverse groups and cultures in the United States.

- Afro-American Studies 101, Introduction to Afro-American Studies (3)
- Afro-American Studies 231, Cultural Patterns and Black Identity (3)
- Afro-American Studies 448, Black and Non-Black Interpersonal Relations (3)
- Afro-American Studies 452, Race Relations Strategies (3)
- American Indian Studies 320, American Indians in Contemporary Society (3)
- American Indian Studies 460, The American Indian Political Experience (3)
- American Indian Studies 440, American Indian History (3)
- Anthropology 441, The California Indian (3)
- Comparative Literature 272B, Third World Literature (3)
- Economics 330B, Chicano History (3)
- Economics 332, Capitalist Economy (3)
- Economics 333, Technology and Human Values (3)
- Economics 334, Technology and Public Policy (3)
- Economics 380, Labor Problems (3)
- History 485, Science and the Modern World (3)

11. Mass Society and the Individual

In many respects, the individual in contemporary society lives within a context of massive structures of power and influence over which he or she has no control and often little understanding. These include political and economic structures as well as social, religious, occupational, and community influences. To understand both the limitations and the opportunities which these power structures present to the individual, one must recognize their sources of power, their use of power to affect our lives, and the positive and negative implications such power has for individual freedom and autonomy.

- Afro-American Studies 231, Cultural Patterns and Black Identity (3)
- American Indian Studies 450, Bureaucracy and the American Indian (3)
- American Indian Studies 455, American Business History (3)
- American Indian Studies 460, The American Indian Political Experience (3)
- American Indian Studies 440, American Indian History (3)
- Anthropology 441, The California Indian (3)
- Anthropology 506, Mass Communication and Society (3)
- Philosophy 329, Social Ethics (3)

* Indicates courses with prerequisites, most of which are offered in Basic Subjects or Foundations of Learning.
12. The Arts and the Contemporary World

The proposed courses offer experience in each of the following arts: the visual arts, drama, dance, literature, and music. The arts undeniable reflect and express profound human experience. No time or place has been without them. From the beginning until now the arts give us a clear record of cultural value systems, reflecting the scope of ideals to which people have aspired.

The courses in this theme are intended to reveal past values as well as to contribute to defining contemporary ones. This theme is based on the premise that every individual needs to form at least a beginning understanding of the importance of art in our lives, not only in terms of enlightened daily living but as a vital means of expression and communication.

Afro-American Studies 180. Afro-American Music (3)
Art 598. Art of the 20th Century (3)
Comparative Literature 514. Modern European Literature (3)
Drama 408. History of the Theatre (3)
Music 345. Music in Contemporary Life (3)
Music 351B. Musical Masterpieces of the 20th Century (3)
Music 351D. Jazz History and Appreciation (3)
Philosophy 541. History of Aesthetics (3)
Philosophy 542. Philosophy of Art (3)
Political Science 310. Politics and the Arts (3)
Telecommunications and Film 363. International Cinema (3)
Telecommunications and Film 563. Film Classics (3)
Women's Studies 353. Women Writers (3)

13. The Patterns of Nature

This theme provides students with opportunities to expand their knowledge of the patterns and processes of nature. An appreciation of the processes at work in our world and the observable universe may be achieved by the study of natural phenomena revealed in geologic formations, the biosphere, and the stars.

Astronomy 301. Cosmology and Gravitational Collapse (3)
Biology 200. Natural History of Plants and Animals (3)
Biology 380. Evolution (3)
Geography 507. Geography of Natural Vegetation (3)
Geography 508. Physical Climatology (3)
Geological Sciences 105. Historical Geology (4)
Geological Sciences 391. Geology of National Parks and Monuments (3)
Geological Sciences 333. The History of Life (3)
Geological Sciences 431. The Origins of Life (3)
Geology 314. Natural History of the Vertebrates (3)
Zoology 330. Life in the Sea (3)

14. Power and Innocence in America

Americans sometimes see themselves as innocents pursuing values such as simplicity, spontaneity and isolation; at other times they view themselves as powerful, producing new self-images often clash, requiring new forms of reconciliation. These two cultures may be seen in our art, philosophy, popular America, students will be exploring their own values, elements of our social structure and an important influence on our relations with other peoples of the world.

* Indicates courses with prerequisites; most of which are offered in Basic Subjects or Foundations of Learning.

15. The Human Health Experience

Human survival and the quality of life are preeminently health dependent. Health experience derives from a complex interplay of genetic, cultural, environmental, psychological, and individual variables. Understanding of these variables suggests interdisciplinary study. This theme provides experiences relevant to optimizing human health potential and is of personal value in offering clues to orthobiosis (proper lifestyle) and social significance in its illumination of components of the interdependent health system.

Biology 310. Biology of Sex (3)
Biology 350. Human Heredity (3)
Biology 362. Principles of Human Physiology (3)
Biology 390. Environment, Health and Disease (3)
Biology 573. Biology of Aging (3)
Family Studies and Consumer Sciences 107. Nutrition Today (3)
Health Science 101. Health and Life-style (3)

16. The Urban Experience

Urbanization is a development that has had a very significant impact on modern life. In the United States 70 percent of the population now live in cities or suburbs. The trend gives no evidence of reversal, and an increasing percentage of future students likely will enjoy the benefits and endure the problems associated with urban living. This theme permits students to observe urban living from a variety of perspectives which should enhance their understanding of the urban environment with insights which may improve their contributions to it as well as benefits from it.

Afro-American Studies 220. Politics and Economics of Urban Development (3)
Anthropology 429. Urban Anthropology (3)
Economics 351. Biology of Populations (3)
Economics 458. Urban and Regional Economics (3)
Geography 354. Geography of Cities (3)
History 543A. The City in American History (3)
History 543B. The City in American History (3)
Mexican-American Studies 302. Community Organization and Development (3)
Political Science 522. Urban Politics (3)
Political Science 523. Community Political Behavior (3)
Social Welfare 351. Perspectives on Life in Urban Communities (3)
Sociology 557. Urban Sociology (3)

17. Ancient Sources of the Western Tradition

A study of the roots of Western civilization in the Mediterranean basin and Europe from early times through the classical age. The theme will be concerned prominently with the heritage of Greece, Rome, and the Jews in shaping the civilization of the West. Emphasis will be placed on humanistic achievements and on the development of ideas, art forms, and institutions which contributed to the emergence of Western civilization.

* Indicates courses with prerequisites; most of which are offered in Basic Subjects or Foundations of Learning.
Graduation Requirements

18. The Emergence of Western Civilization
A study of Europe and the Mediterranean region during the formative centuries from the end of the Roman Empire to 1500. This theme will be concerned prominently with the medieval tradition in Europe. Emphasis will be placed on humanistic achievements and on the development of the ideas, art forms, and institutions which came together to give Western civilization, by the end of the Middle Ages, its distinct character.

* Art 571. Medieval Art (3)
* Comparative Literature 510. Medieval Literature (3)
* History 503A. Europe in the Middle Ages (3)
* History 503A. Europe in the Middle Ages (3)
* Humanities 401A. The Cultural Heritage of Europe I (3)
* Philosophy 502. History of Philosophy II (3)
* Religious Studies 310. Greek and Latin Fathers (3)
* Religious Studies 314. Medieval Western Christianity (3)

19. Western Civilization from the Renaissance Through the Age of Enlightenment
A study of Western civilization from the sixteenth through the eighteenth centuries. Emphasis will be placed on humanistic achievements and on the development of the ideas, art forms, and institutions that characterized the early modern age of the West.

* Comparative Literature 511. Continental Renaissance (3)
* Comparative Literature 512. Seventeenth and Eighteenth Century European Literature (3)
* English 280A. English Literature (3)
* History 407A. Modern Europe (3)
* Humanities 401B. The Cultural Heritage of Europe II (3)
* Humanities 402A. The Cultural Heritage of Europe III (3)
* Music 351A. Musical Masterpieces of the 18th and 19th Centuries (3)
* Natural Science 316. History of Science II (3)
* Philosophy 303. History of Philosophy III (3)
* Political Science 301B. History of Western Political Thought (3)
* Religious Studies 316. The Reformation and Beginnings of Modern Christianity (3)

20. Western Civilization in the Modern Age
A study of Western civilization in the nineteenth and twentieth centuries. Emphasis will be placed on humanistic achievements and on the development of the ideas, art forms, and institutions that characterized the industrial and nuclear age.

* Anthropology 440. Cultures of Europe (3)
* Comparative Literature 513. Nineteenth Century European Literature (3)
* History 407B. Modern Europe (3)
* Humanities 131. The Jewish Heritage II (3)
* Humanities 402B. The Cultural Heritage of Europe IV (3)
* Natural Science 305. Modern Physical Science (3)
* Philosophy 504. Continental Philosophy After Kant (3)
* Philosophy 506. Twentieth Century Continental Philosophy (3)

* Indicates courses with prerequisites, most of which are offered in Basic Subjects or Foundations of Learning.
24. Cultures and Civilization of the Middle East

The theme will emphasize the study of the cultures and civilizations of the peoples of the Middle East in a temporal and spatial context, and their relevance to contemporary problems and issues. An understanding of how people in other societies and lands confront human and environmental conditions can provide a broader comprehension of the commonalities and diversity of man. The Middle East culture area provides a unique opportunity to understand the dynamics of tradition and change as they are faced by non-industrial societies moving rapidly into the industrial age. A cluster of courses in this thematic area allows an unusual opportunity for both depth and breadth of understanding of this important area.

- Anthropology 453. Near Eastern Societies (3)
- Art 566. The Art of Persia and the Islamic World (3)
- Comparative Literature 535. Near Eastern Literature (3)
- Economics 489. Economic Problems of Africa and the Middle East (3)
- Geography 335. The Middle East and North Africa (3)
- History 473A. Middle Eastern History from the Rise of Islam to the Present (3)
- History 473B. Middle Eastern History from the Rise of Islam to the Present (3)
- Humanities 157. Arab-Islamic Culture and Civilization (3)
- Political Science 563. Government and Politics of the Middle East (3)
- Religious Studies 340. Islam (3)

25. Culture and Civilization of Latin America

This theme is intended to provide students with an opportunity to come to grips with a major cultural component of the Western Hemisphere. Latin America encompasses the area from Tijuana to Tierra del Fuego. It constitutes one-sixth of the world’s land mass, and it incorporates a majority of the population in our hemisphere. Latin America will necessarily occupy a place of increasing importance in the concerns of the United States, and given its proximity to the area, these concerns will weigh even more heavily upon residents of southern California. The courses included under this theme will provide our students with an understanding of diverse aspects of Latin American culture that will enable them to deal more effectively with Latin America and civilization with reference to periods of time and/or areas covered.

- Anthropology 442. Cultures of South America (3)
- Anthropology 443. Contemporary Latin American Cultures (3)
- Anthropology 477. Postclassical Cultures of Mesoamerica (3)
- Art 561. Arts of the Pre-Hispanic Americas (3)
- Art 582. Colonial Art of Latin America (3)
- Comparative Literature 545. Modern Latin American Literature (3)
- Economics 464. Economic Problems of Latin America (3)
- Geography 323. Middle America (3)
- Geography 324. South America (3)
- History 415A. Latin America (3)
- History 415B. Latin America (3)
- Latin American Studies 101. Latin American Heritage (3)
- Latin American Studies 341. Latin American Civilization (3)
- Political Science 566. Political Change in Latin America (3)
- Political Science 567. Political Systems of Latin America (3)

26. The Other Europe: Soviet Russia and East Europe

In political, military, ideological, scientific, economic and many other realms, the Soviet- oriented European nations confront the United States with its major challenge of the twentieth century. Despite historic diversity and antagonism among many of these nations, the advent pressures toward conformity in social and ideological matters. This theme provides a broad principal force for development and change.

- Economics 313. Marxist Economic Theory (3)
- Economics 468. The Economics of the Soviet Union and Eastern Europe (3)
- Geography 337. Soviet Union (3)
- History 519A. Russia and the Soviet Union (3)
- History 519B. Russia and the Soviet Union (3)
- Humanities 331. Russian Civilization (3)
- Political Science 559. Government of the Soviet Union (3)
- Political Science 558. Comparative Communist Governments (3)
- Russian 305A. Survey of Russian Literature (3)
- Russian 305B. Survey of Russian Literature (3)
- Russian 563. Russian Literature of the Twentieth Century (3)

27. National Cultures and Civilizations of the West

This theme brings together various courses dealing with the cultures and civilizations of major Western nations. Rather than focusing on the whole of Western civilization, these courses seek to analyze the unique character of particular national cultures, deal with their historical development, and emphasize especially the humanistic achievements in the realms of ideas, art forms, and institutions which have been most of them. Courses will, therefore, be interdisciplinary in method and diverse in content, allowing students an unusual opportunity for developing depth and breadth of understanding of those cultures.

- Humanities 310. French Civilization (3)
- Humanities 311. French Civilization (3)
- Humanities 320. German Civilization (3)
- Humanities 321. German Civilization (3)
- Humanities 330. Russian Civilization (3)
- Humanities 331. Russian Civilization (3)
- Humanities 340. Italian Civilization (3)
- Humanities 341. Italian Civilization (3)
- Humanities 350. Spanish Civilization (3)

28. Foreign Language Study

At least nine units in courses in a single foreign language. Due to the irregular number of units in various foreign language courses, please note the following: by taking two or three courses in a foreign language, a student may accumulate more than nine units credit; however, no more than nine of these units may be applied to general education. Students required to take foreign language courses among the requirements for a degree cannot use those courses to satisfy Explorations in the Human Experience.

Foreign languages currently offered include: American Indian (Hopi, Kumeyaay, Sioux); Chinese; Classics (Greek, Latin); French; German; Hebrew; Italian, Japanese, Portuguese, Russian, and Spanish.

* Indicates courses with prerequisites, most of which are offered in Basic Subjects or Foundations of Learning.

Graduation Requirements

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, not later than the end of the third week of classes in the fall if they want to graduate in mid-year, and not later than the end of the eleventh week of classes in the fall if they want to graduate in May or at the end of summer session. The Class Schedule each semester specifies the exact date. An application fee of $6.00, which is nonrefundable and nontransferable, 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 and
Colleges 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.

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 is 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 work done at 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 GPA meets required standards at the beginning of the fall semester for mid-year graduates, and at the end of the fall 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. Grades for removal of Incompletes and 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 graduate, and the student must file an application for graduation by the published deadline.

Upon recommendation of their 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 of 3.5 grade point average in the major (upper division courses). Individual departments and programs may set additional or higher standards.

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.

Second Bachelor's Degree

A second bachelor's degree may be earned if the student has an excess of 24 units beyond the minimum requirements for the first bachelor's degree, makes a change in major, fulfills all requirements for the degree (including general education requirements) as required by this university, and has approval of the department and the Dean of Undergraduate Division.
## Summary of Curricula Offered

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<thead>
<tr>
<th>Majors</th>
<th>Applied Arts and Sciences</th>
<th>Liberal Arts and Sciences</th>
<th>Graduate Curricula</th>
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<td><strong>Accounting</strong></td>
<td>AB</td>
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<td><strong>Aerospace engineering</strong></td>
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<td><strong>Botany</strong></td>
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<td><strong>Business administration</strong></td>
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<td><strong>Chemistry</strong></td>
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<td><strong>Child development</strong></td>
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<td><strong>City planning</strong></td>
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<td><strong>Drama</strong></td>
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### SPECIAL CURRICULA

**Preprofessional Curricula**
- Preclinical
- Prelegal
- Premedical
- Preveterinary

**Medical Technology**
- Military Curricula
  - Aerospace studies (A.F.R.O.T.C.)

**Certificate (nondegree) Programs**
- Certificate in applied physical education
- Certificate in applied linguistics
- Certificate in business administration
- Certificate in clinical psychology
- Certificate in community college administration
- Certificate in human services
- Certificate in instructional technology
- Certificate in public administration
- Certificate in Spanish translation and interpretation
Teaching Credentials

- Multiple subjects teaching credential
- Single subject teaching credential
- Community college instructor credential (occupational)
- Community college instructor credential (academic)
- Health services credential
- Standard designated subjects, adult
- Specialist credentials
- Administrative services
- Bilingual/cross cultural
- Clinical rehabilitative services
- Early childhood
- Library services
- Pupil personnel services
- Reading specialist
- School psychology
- Special education
- Communication handicapped
- Physically handicapped
- Learning handicapped
- Severely handicapped
- Gifted

Minors for the Bachelor's Degree

Accounting
Aerospace studies
African studies
Afro-American studies
Anthropology
Art
Asian studies
Astronomy
Biology
Botany
Business management
Chemistry
Child development
Classical humanities
Classics
Comparative literature
Computer science
Dance
Drama
Economics
Educational technology and librarianship
Engineering
English
Environment and society
Finance
French
Geography
Geology
German
!Health science
History
History of science and technology
Home economics
Industrial arts
Information systems
Insurance
Italian
Jewish studies
Journalism
Linguistics
Marketing
Mathematics
Mexican-American studies
Middle East studies
Music
Oceanography
Personnel and industrial relations
Philosophy
Physical education
Physics
Political science
Portuguese
Production and operations management
Psychology
Public administration
Radio-television
Real estate
Recreation
Religious studies
Russian
Social welfare
Sociology
Spanish
Speech communication
Speech pathology and audiology
Women's studies
Zoology
Undergraduate Division

Objectives and Functions

The Undergraduate Division 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, the College Level Examination Program, the Advanced Placement Program and the preprofessional programs in medicine, dentistry, law and veterinary medicine. In addition, it offers special course work in the University Studies series and sponsors the liberal studies major for non-credit students.

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

Above all, the Undergraduate Division 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 Undergraduate 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 their other work from the regular offerings of the University. The program is open to students in all majors, and involves small classes, special advising in both academic and career options, opportunity for independent projects, and participation in similar programs across the nation.

Students may apply by contacting the Undergraduate Division (AD-223) at entrance, or before completion of three semesters. Eligibility at entrance is determined by an SAT score of 1150 or above (ACT 27), or a high school GPA of 3.75, or successful completion of advanced high school courses; later eligibility is determined by a superior GPA at the University.

Departmental Honors Courses

Some departments regularly offer honors classes which are independent of the University Honors Program; for these eligibility is determined according to achievement in the particular field. Students should consult the Class Schedule for such honors classes (most information are listed under the department's 300 number), and contact the department or instructor for further information.

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 their home campus while involved in the exchange, thus relieving them of additional tuition currently receiving financial aid may continue to be qualified for it. Credits earned at New Hampshire are transferable to the home campus. To be eligible, the student must have time of application and a minimum GPA required is 2.5. Students may apply to the Undergraduate Division office before February 9, 1981 for the spring semester exchange, and before March 2, 1981 for the following fall.

Preprofessional Health Advising Office

The preprofessional health advising office is responsible for advising premedical, predental and preveterinary 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 the Campus Laboratory School, Room 107.

CSUC International Programs (Study Abroad)

The California State University and Colleges (CSUC) offers opportunities for students to pursue their studies at a distinguished foreign university or special program center. Under the auspices of the CSUC Office of International Programs, participants in this program are concurrently enrolled at their home campus, where they earn academic credit and maintain campus residency, and at an overseas institution of higher education.

Cooperating universities abroad include the University of Provence, France; the Universities of Heidelberg and Tubingen, Germany; the Hebrew University of Jerusalem in Israel; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; the Universidad Catolica, Peru; the Universities of Granada and Madrid, Spain; the University of Upsala, Sweden; Lincoln University College of Agriculture and Massey University, New Zealand; and Waseda University of Japan. In the United Kingdom, cooperating universities (which may vary from year to year) include, among others, Aberystwyth, Edinburgh, Oxford, Cambridge, London, Manchester, Oxford, Liverpool, Lampeter, Sheffield, and Stratheclyde. In addition, CSUC students may attend special programs in art, business, or area studies in Taiwan, Republic of China; or programs in architecture or business in Copenhagen, Denmark.

Eligibility for application is limited to those students who will have upper division or graduate standing by September 1, 1981 at a CSUC campus; who have demonstrated the ability to adapt to a new cultural environment; and, who, in the cases of France, Germany, Mexico, Peru, and Spain, will have completed at least two years of college-level study in the language of instruction at the host university, or possess equivalent knowledge of the language. At the time of application, students must have a minimum cumulative grade point average (g.p.a.) of 2.75, or successful completion of advanced high school courses; later eligibility is determined by a superior GPA at the University.

Extended Studies; further information may also be obtained from the College of Extended Studies; further information may also be obtained from the College of Extended Studies; further information may also be obtained from the College of Extended Studies.
In addition to the international programs sponsored by CSUC, San Diego State University has special institutional arrangements for student exchange with three prominent Japanese Universities: Yokohama National University, Yokohama; Aoyama Gakuin University, Tokyo; and Seinan Gakuin University, Fukuoka. Information about student exchange opportunities in Japan may be obtained from the International Center.

San Diego State University also is a member of the Latin American Scholarship Program of American Universities (LASPAU). The purpose of LASPAU is to help strengthen university teaching, research, and administration in Latin America and the Caribbean. To this end, San Diego State offers tuition scholarships for graduate study to promising LASPAU scholars sponsored by institutions of higher learning in Latin America and the Caribbean.
Graduate Division

Organization and Administration
All graduate work leading to advanced degrees is under the jurisdiction of the Graduate Division and 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 curricula, determines their eligibility to continue in such curricula, and, in the cases of unsatisfactory performance, requires students to withdraw from graduate curricula and the University.

The Dean of the Graduate Division is 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 and Colleges upon recommendation of the faculty of San Diego State University. These degrees 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 and Colleges in the names of San Diego State University and the cooperating campus of the University of California and Claremont Graduate School.

Doctor of Philosophy
The Doctor of Philosophy degree in Chemistry is offered jointly with the University of California, San Diego.

The Doctor of Philosophy degree in Ecology is offered jointly with the University of California, Davis.

The Doctor of Philosophy degree in Genetics 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
- Drama
- Economics
- Education
- English
- French
- Geography
- German
- Health science
- History
- Industrial arts
- Latin American studies
- Linguistics
- Mathematics
- Music
- Philosophy
- Physical education
- Physics
- Political science
- Psychology
- Radio and television
- Russian
- Social science
- Sociology
- Spanish
- Speech major
- Speech communication
- Speech pathology
- Special major
- and audiology

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

- Aerospace engineering
- Astronomy
- Biology
- Business administration
- Chemistry
- Civil engineering
- Computer science
- Counseling
- Electrical engineering
- Geology
- Home economics
- Master of Business Administration
- Master of City Planning
- Master of Fine Arts in Drama
- Master of Public Administration
- Master of Social Work

Non-Degree 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 in reasons other than acquiring an advanced degree or credential. By selecting from the variety of academic experiences provided by the seven colleges of the University, the postbaccalaureate student may seek to satisfy intellectual curiosity and enhance personal growth, to upgrade professional skills, or perhaps to prepare for a change in career.

Not bound by a prescribed course of study or a time limit, the postbaccalaureate student is eligible to enroll in all courses for which he or she meets the prerequisites. Additionally, the minimum grade point average requirement as well as greater choice in the selection of grading systems (such as opting for "credit" grades or "audit") gives the postbaccalaureate student more academic flexibility than students seeking degrees.

Enrollment in 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, subject to the requirements of the particular degree program and the regulations of the Graduate Division.

Further information about non-degree 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 applicants judged by the University to be fully qualified and to those who can benefit from the experience. The requirements listed below are the minimum required for admission to the
University. For many programs, the departments have established additional requirements. Potential applicants should refer to the Graduate Division Bulletin under the departmental listings. Students are also advised to contact the departmental offices as soon as graduate work is contemplated in the final baccalaureate year for advice as to how to proceed. Some departments stop reviewing applications earlier than others because of the limited space available.

Application Procedures

All applicants for postbaccalaureate study (e.g., advanced degree applicants, those seeking credentials, and those interested in taking courses for personal or professional growth, etc.) must file a complete application within the appropriate filing period. Second baccalaureate degree candidates should apply as undergraduate degree applicants. A complete application for postbaccalaureate study includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. Postbaccalaureate applicants who completed undergraduate degree requirements and were graduated from this University are also required to complete and submit an application and the $25.00 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of a single campus on each application, redirection 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 a separate application (including fee) to each. Applications may be obtained from the Admissions and Records Office or the Graduate Division Office of any California State University or College 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 college attended. An applicant who does not qualify for admission under provisions (a) and (b) may be admitted by special action of the Dean of the Graduate Division if on the basis of other evidence (such as the GRE) her/his educational objectives merit such action.

Admission Categories

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

Postbaccalaureate Standing (Unclassified)

A student wishing to enroll in courses at the University with a personal or professional growth objective, but not necessarily with an objective of an advanced degree or credential, may be considered for admission with postbaccalaureate standing (unclassified) when the student meets the criteria specified under General Admission Requirements. Admission with postbaccalaureate standing (unclassified) does not constitute admission to, or assurance of consideration for admission to, 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. Additionally, all students in advanced credential programs must achieve a satisfactory score on the GRE Aptitude Test. (Students holding an advanced degree from an institution that is a member of the Council of Graduate Schools are exempted from this requirement.) A student must also meet the professional, personal, scholastic and other standards prescribed by the appropriate department. The applicant should contact the department involved for information concerning specific admission requirements, and should submit a departmental application during the appropriate filing period. Admission with postbaccalaureate standing (classified) does not constitute admission to, or assurance of consideration for admission to, advanced degree curricula.

Graduate Standing (Classified)

A student wishing to be admitted to a program of study leading to an advanced degree must meet the criteria specified under General Admission Requirements, and, in addition, must:

(a) Achieve a satisfactory score on the Graduate Record Examination Aptitude Test. (Students holding an advanced degree from an institution which is a member of the Council of Graduate Schools are exempted from this requirement; students applying to the College of Business Administration will take the Graduate Management Admission Test).

(b) Have completed an undergraduate major appropriate to the field in which he/she desires to earn an advanced degree.

(c) Satisfy the special departmental or college requirements as stated in Part Four of the Graduate Bulletin under "Fields of Study and Courses of Instruction."

(d) Meet the professional, personal, and scholastic Council of Graduate Schools are exempted from this requirement; students applying to the College of Business Administration will take the Graduate Management Admission Test)

(e) Have completed an undergraduate major appropriate to the field in which he/she desires to earn an advanced degree.

(f) Satisfy the special departmental or college requirements as stated in Part Four of the Graduate Bulletin under "Fields of Study and Courses of Instruction."

(g) Meet the professional, personal, and scholastic standards for graduate study established by the department and the Graduate Council.

Students admitted with graduate standing (classified) are admitted to authorized advanced degree curricula and may enroll in 600- and 700-numbered courses. Such admission does not imply that a student will be advanced to candidacy for an advanced degree.

Conditional Graduate Standing (Classified)

A student wishing to be admitted to a program of study leading to an advanced degree and meeting the criteria specified under General Admission Requirements but having deficiencies in the criteria for graduate standing (classified), may be granted conditional graduate standing (classified), if the deficiencies can be met by specific additional preparation, including qualifying examinations. Not more than 15 semester units may be assigned to satisfy undergraduate deficiencies in the major and all course conditions must be met within five semesters from the time of initial enrollment. Students admitted with conditional graduate standing (classified) are admitted to authorized advanced degree curricula and may enroll in 600- and 700-numbered courses. Once the conditions established by the department or college have been met, the student will be awarded full graduate standing (classified).

A student who is already enrolled in the University with postbaccalaureate standing may request acceptance into an advanced degree curriculum with graduate standing (classified). Applications for such continuing students are available at the Graduate Division Office. Scoring reports of the GRE Aptitude Test must be on file at the University before continuing students may apply for graduate standing (classified).

International Faculty Exchanges

In order to enhance the international character of instruction and research, San Diego State University has developed 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 four French universities: the Universities of Angers, Nice, Clermont Ferrand, and Aix-en-Provence.

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.
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.

Predental Curriculum

The predental program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology, chemistry or zoology, with a major in one area and selected course work in the others. Other departmental majors are permissible, however. Predental students must confer 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 200 and Zoology 200; Biology 215, 502, 503; Zoology 503 or Biology 541; Chemistry 200, 201, 231, 431; Mathematics 150 and 151 or 121 and 122; Physics 180A-180B and 182A-182B, or 195, 195L, 196L, 197, 197L; Psychology 101 plus one additional course in psychology. 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 Biology 502; Chemistry 361A, 361B; Microbiology 310, 330; Zoology 506, 508, 535. The students are also expected 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 the following subjects: elementary algebra, plane geometry, intermediate algebra, chemistry, physics and two or three years of French or German.

The Preprofessional Health Adviser will be available to high school or transfer students from May 15-30 and during the registration period by appointment. All predental students should establish a personnel file in the Campus Laboratory School, Room 107, 265-6638.

Prelegal Curriculum

The prelegal program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology, chemistry or zoology, with a major in one area and selected course work in the others. Other departmental majors are permissible, however. Prelegal students must confer with a prelegal 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, prelegal students should include the following courses in their program: Botany 200 and Zoology 200; Biology 215, 502, 503; Biology 541 or Zoology 503; Chemistry 200, 201, 231, 431; Mathematics 150, 151; Physics 180A-180B and 182A-182B, or 195, 195L, 196L, 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: Biology 572; Chemistry 361A-361B or 560A-560B; Microbiology 310, 330; Psychology 101; Zoology 506, 508, 535. 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 and two or three years of French or German.

The Preprofessional Health Adviser will be available to high school or transfer students from May 15-30 and during the registration period by appointment. All prelegal students should establish a personnel file in the Campus Laboratory School, Room 107, 265-6638.

Premedical Curriculum

The premedical program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology, chemistry or zoology, with a major in one area and selected course work in the others. 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; Biology 541 or Zoology 503; Chemistry 200, 201, 231, 431; Mathematics 150, 151; Physics 180A-180B and 182A-182B, or 195, 195L, 196L, 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: Biology 521A-521B; Chemistry 361A-361B or 560A-560B; Microbiology 310, 330; Psychology 101; Zoology 506, 508, 535. 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 and two or three years of French or German.

The Preprofessional Health Adviser will be available to high school or transfer students from May 15-30 and during the registration period by appointment. All premedical students should establish a personnel file in the Campus Laboratory School, Room 107, 265-6638.

Preveterinary Curriculum

The preveterinary program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology or zoology, with a major in one area and selected course work in the others. 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; Botany 200; Chemistry 200, 201, 231, 361A, 431; Mathematics 121, 122, or 150, 151; Physics 180A-180B and 182A-182B; Zoology 200; Microbiology 200, 310, 330; Zoology 503 or Biology 541; Zoology 540 or Biology 572; two semesters of English.

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

The Preprofessional Health Adviser will be available to high school or transfer students from May 15-30 and during the registration period by appointment. All preveterinary students should establish a personnel file in the Campus Laboratory School, Room 107, 265-6638.


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 if the liberal studies Option 1 major pattern of concentration is chosen. A copy of the master plan is to be filed with the Evaluations Office. The approval of a prelegal adviser is required for all master plans.
Preprofessional Programs

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 course work 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.
North County Center

Administration
Dean: William P. Locke, College of Extended Studies
Director North County Center: Lawrence A. Clinger
Assistant Dean for Student Affairs: Edward R. Mendez
Sr. Assistant Librarian: Nancy 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.

Degrees and Credential Programs Offered at the North County Center
Major in American studies with the A.B. degree in liberal arts and sciences.
Major in liberal studies, option 1, 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 a concentration in secondary curriculum and instruction.
Master of Arts degree in education with a concentration in educational administration or administrative services credential.

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 in Vista, California, with administrative facilities adjacent to the City of Vista offices at 150 Escondido Avenue, Vista, California.

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 the North 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 aid information, 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.

Continuing Education

Functions
The California State University and Colleges 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 six divisions—Summer and Special Programs, Continuing Education Programs, International Programs, Academy for Theatre Arts, Institute for Brazilian Programs, and Retired Adult Programs. The majority of the programs are operated on a self-support basis since state funds are not provided for Continuing Education activities.

Summer and Special Programs
The College of Extended Studies administers a comprehensive summer program for San Diego State University. Approximately 600 regular courses, workshops, short courses, interdisciplinary and experimental offerings, and special programs are available for matriculated students, students from other institutions and special groups. Selected degrees and certificate programs are available for individuals who can only attend school during the summer. Credit earned during the summer is applicable to graduation and residence requirements; however, admission to the University 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 during which seven units of credit may be earned. The summer program is offered from 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 during the summer session to satisfy the requirements for an advanced degree, he must make early in a summer session to satisfy the requirements for an advanced degree. The regular Summer Session is scheduled from the first of June through the middle of August each year.

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.

A preliminary schedule of summer session terms and class offerings will be available just prior to spring semester. The regular Summer Sessions Bulletin, which include the program is offered from 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 during the summer session to satisfy the requirements for an advanced degree, he must make early in a summer session to satisfy the requirements for an advanced degree. The regular Summer Session is scheduled from the first of June through the middle of August each year.

Conferences
The Conference Office designs, implements and administers a comprehensive, year-round, University operation for on- and off-campus conferences, meetings, seminars and workshops.

Wintersession
The College of Extended Studies administers a special academic program during the winter recess period titled "The Wintersession." This special session provides students an opportunity to earn resident academic credit through participation in concentrated and interesting course work.
International Programs
Two noncredit intensive English programs are offered throughout the year to students and professionals desiring to increase their proficiency. These are:

Academic English for the University Bound—a semester-long course for students planning to enter San Diego State or other colleges of universities. Classes are offered in reading, writing, grammar, research skills, English for special purposes (e.g., English for Science and Economics, English for Business Education) and cultural orientation.

American Language and Culture—a quarter-long course focusing upon oral skills. Classes include American culture, conversation, pronunciation and comprehension and usage.

Summer Language Institutes—a number of special short-term language programs are offered by the AII each summer (e.g., American Business English). All students at the institute are offered housing assistance, counseling for university entrance and orientation to university life. Information about and applications for the institute can be obtained from the Director or Admissions Counselor, 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 units of credit. Programs range from two to five weeks in length, with a maximum of six units of credit offered for the longer programs. Units of credit earned through travel/study may be used to satisfy the Human Experience section of the General Education requirements. However, participants need not be regularly matriculated students at SDSU. Independent study credit is available for study abroad. Students must select an instructor and prepare a plan of study to satisfy the requirements for units earned. For further information contact the Director of Foreign Travel/Study Programs.

Continuing Education
In order to meet the needs of the adult community, as well as matriculated students, the Continuing Education Division administers a variety of extension courses and workshops. Programs are open to qualified extension students. Concurrent enrollment, certificate, military and external degree programs are offered by the Division. For the convenience of adult students most courses are scheduled on the University campus or at convenient learning extension centers throughout the service area. The following categories of programs are offered through this division.

Extension
Extension courses are offered each semester in a number of areas including education, business administration, public administration, and the arts and sciences. Many courses are offered with specific needs. The usual class carries three units of extension credit, although one-weekend workshops are also offered throughout the year. These courses are listed in a special Extension Studies Program Bulletin (Open text) published each semester. There is no limit on the total number of extension units for which a student may enroll; however, the maximum extension and/or correspondence credit which may be used toward obtaining the same as transfer credit and is therefore not included in the student's San Diego State University scholastic average.

Certificate Programs
Professional Certificate Programs are coordinated by the Extension Division. Educational programs are offered in the following areas: Construction Practices, Fire Protection Administration, Materials Management, and Personnel Industrial Relations. The Division also coordinates the activities of the Center for Continuing Education in the College of Engineering.

Concurrent Enrollment
A limited number of regular, on-campus classes are open to qualified extension students by special permission of the department and the instructor. Students who take advantage of "Concurrent Enrollment" are required to pay regular extension fees. They are permitted to enroll only after matriculated students have completed their registration. Consult the Extension Division or the current Class Schedule for complete details on Concurrent Enrollment qualifications and registration procedures.

Military and External Degree Programs
In addition to its role of administering external degree programs for the civilian population, Military and External Degree Programs 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 College of Extended Studies, which has been designated by the Department of Defense as a Serviceman's 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, a Bachelor of Science degree in Health Care Administration, and a Bachelor of Arts degree in Liberal Arts. Classes are held on base and elsewhere in the community for the convenience of the students, while some are scheduled on the University campus to take advantage of laboratories and other resources. This unit also administers special certificate programs for the military including human resources management.

For additional information contact the Director of Military and External Degree Programs.

Retired Adults Education Program
Programs for retired adults are sponsored by the College of Extended Studies at San Diego State University and operate out of two locations—downtown San Diego (Educational Growth Opportunities—EGO) and Rancho Bernardo (Center for Continuing Education—CCE). These programs are planned and instructed by senior adults who are interested in furthering lifelong learning.

For further information, contact the Director of Retired Adult Education Programs.
External Degree Programs

Purpose
External degree programs have been established by the Board of Trustees of The California State University and Colleges 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 course work 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 admissions fee of $25.00.
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 semester units and resident 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 extension, summer sessions at San Diego State University or at other regionally accredited institutions.

Special Provisions for the Military
San Diego State University subscribes to the policy and criteria of the Department of programs. Through the College of Extended Studies academic programs are offered which afford service personnel special considerations by:
Increasing academic opportunities to pursue higher education through course offerings on military bases;

Providing opportunities for military students to complete academic work interrupted by military duties;
Providing a designated SOC Counselor who is familiar with the problems attendant to pursuing an education while in the Armed Forces;
Providing the maximum allowable recognition of credit from such nontraditional modes as DANTES, CLEP, CEEB, and ACE Guide to the Evaluation of Educational Experience in the Armed Forces;
Allowing a military student to continue to satisfy program curriculum requirements at another regionally accredited institution in accordance with the provisions of his/her Servicemen's Academic Agreement and Program of Study.

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

Undergraduate
*Major in health care administration with the B.S. degree.
*Major in liberal arts with the A.B. degree.

* Degree offered by Consortium of The California State University and Colleges.

Health Care Administration Major
With the B.S. Degree
This external degree program was designed to assist administrators of health care facilities, and those desiring second careers in this rapidly expanding field, to develop and improve their knowledge of and skills in administration and organization of patient care. Emphasis is on administration of programs, personnel and facilities in relation to the roles and responsibilities of the practitioner.

The courses which meet the requirements for this major are offered through the joint sponsorship of the appropriate academic departments and the College of Extended Studies. The degree is awarded by the Board of Trustees of The California State University and Colleges. All courses offered by SDSU for this major are at the upper division level only. Lower division requirements may be fulfilled through community college course offerings. In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total unit requirement of 124 units for this degree.

General Requirements
Preparation Courses — 12 units
General Education — 40 units
American Institutions (3 of the 6 units required are included in general education)

Major
Forty-five upper division units selected from Business Administration 350, 352, 496; Public Administration 305, 482, 496; Sociology 526, 527; and Psychology 350.

Approved Electives
The courses should be in the field of either health care administration or business administration. Consultation with the Academic Program Coordinator is recommended for planning and fulfilling all curriculum requirements.
Liberal Arts Major

With the A.B. Degree

In conjunction with the Consortium of The California State University and Colleges, courses are offered leading to a Bachelor of Arts degree in Liberal Arts. The major consists of 48 units of upper division course work. A San Diego State University Certificate is awarded after the successful completion of the first 24 credit units in one of several areas of emphasis (human resources management, etc.) and may be used to satisfy the 24-unit residency requirement in the A.B. in Liberal Arts degree.

The courses which meet the degree requirements are offered through the joint sponsorship of the appropriate campus academic departments and the College of Extended Studies. The degree is awarded by the Board of Trustees of The California State University and Colleges.

The lower division requirements for the degree may be fulfilled through community college offerings. The courses offered by San Diego State University are upper division. In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total requirement of 124 units.

General Requirements
General Education — 40 units
American Institutions

Major

Rather than requiring specific courses, this major designates areas which represent basic components involved in an educational process: literacy, methodological processes (heuristics) and synthesis. These three categories provide the individual not only with content materials but with the techniques and perspectives which allow learning to take place beyond formal degree programs.

Writing Skill

A 15-unit requirement of demonstrated proficiency in written English skills is required. The student must demonstrate his or her ability to write in courses other than English composition.
Courses and Curricula

Course Numbering

Courses numbered from 100 to 299 are lower division (freshman or sophomore) courses; those numbered 300 to 499 are upper division (junior or senior) courses intended for undergraduates; those numbered 500 to 599 are upper division courses also acceptable for advanced degrees; those numbered 600 to 799 are graduate courses; and those numbered 800 through 899 are doctoral courses. Courses numbered X-900 through X-999 are offered only through Continuing Education to meet the specific academic needs of community groups and are listed in the Extended Studies Program Bulletin (Portals). Courses numbered in the X-900 series unless otherwise stated in the course description are applicable toward degree requirements at San Diego State University. Courses at the X-900 level are not acceptable on advanced degree programs.

The Unit or Credit Hour

In the listing of courses that follow, figures in parentheses indicate the unit value of the course. One unit of 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 follow, 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 in the summer.

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 the fall semester.

Year course beginning either semester.

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

Common Courses

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

Any department or college which has received approval through the normal curricular channels to offer courses under the numbers 296, 496, 596 may do so subject to the following conditions:

1. Proposals shall be submitted with the Class Schedule Building and Maintenance forms on a 296, 496, 596 Course Proposal form.

2. Such courses may be offered no more than four semesters within a six-year period with the same title and content. (However, if a proposal has been submitted to the departments will be granted an extension beyond the four semesters to allow time for processing of the request for inclusion in the Catalog).

3. No more than nine units of such courses shall be applicable toward a bachelor's degree.

4. Such courses may be applicable toward preparation for the major only with the approval of the department chair.

5. Only those proposals submitted to the Office of the Vice President for Academic Affairs in time for inclusion in the printed Class Schedule will be approved.

6. Specified sections of such courses may be offered on a credit/no credit basis under the following conditions:

a. Requests to offer these courses for Cr/NC must be submitted with the Class Schedule Building and Maintenance forms.

b. Separate sections of the same course may not have different grading systems.

Honors Courses (300)

These courses are intended for students with superior scholastic records and aptitude. An interested student should direct his 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. He should seek out an instructor under whose supervision he wishes to work discuss the topic with him, and come to an understanding on the amount of time he is to devote to the topic, the credit he is to earn, and his 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.

Credit/No Credit Courses

Courses which are offered for credit/no credit are indicated by the symbols Cr/NC in the course title.
Aerospace Studies
In the College of Professional Studies and Fine Arts

Faculty
Professor: Neal (Chair)
Assistant Professors: Greer, McOmber

Offered by the Department
A.F.R.O.T.C. curriculum.
Minor in aerospace studies.

A.F.R.O.T.C. Curriculum
The department offers a 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 coursework 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. Summer training is required of all students, other than veterans, prior to enrollment in on-campus courses.

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 and existing Air Force needs. Graduates may request a delay from entry on active duty to begin immediately upon entry on active duty.

Applying for the Program
Any student or prospective student may take the Air Force Officer Qualifying Test and the physical examination during the year preceding entry into the program.

When selected, applicants attend a six-week field training course at an Air Force base in the summer prior to their last two years of college. No further summer training is required. Cadets who are granted credit for prior military service may enter the program as juniors and attend a four-week field training between their junior and senior year. Field training emphasizes military orientation for the junior officer and aircraft and aircrew familiarization. Cadets receive physical training and participate in competitive sports. They perform everyday operations of the Air Force.

Flight Instruction and Pay
The Flight Instruction Program (FIP) is offered to qualified senior cadets who have elected to enter pilot training when reporting for active duty. The cost of the flight training is paid by 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 $350 during the Field Training Unit and are reimbursed for the cost of travel to and from the unit.

Officer Training Program Requirement
Individuals enrolled in a technical academic major are particularly encouraged to apply. Technical majors include Engineering, Computer Science, Information Systems, Aerospace Studies Department Chair.

Aerospace Studies Minor
The minor in aerospace studies consists of a minimum of 15 units in aerospace studies 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: The military justice system; leadership theory and practice. Semester II: Management principles and functions; problem solving, briefing for commissioned service.

333-S. Field Training Unit (3)
Required for advanced cadets; military orientation and flight familiarization. Credit granted through the Extension Division on basis of individual student application with approval of the Aerospace Studies Department Chair.

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.

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, Services; and requisites for adequate national security forces. Semester II: Political, Services; and requisites for adequate national security forces. Semester II: Political, Services; and requisites for adequate national security forces. Semester II: Political, Services; and requisites for adequate national security forces.

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.

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
Professor: Chambers
Associate Professors: Kerri, Kornweibel, Meadows
Assistant Professors: Scarborough, Thomas, Weber
Lecturer: Smith

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 and 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.

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 II. Afro-American Studies 363, 460, 461, 470 and 480.
Area III. Afro-American Studies 362, 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) I, II
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 Life Styles (3) I, II
Afro-American life styles in the past, present, and future. Examination of contemporary problems, their roots and their effects on Twentieth Century America. (Formerly numbered Afro-American Studies 233.)

120A. Composition and Reading (3) I, II
Practice of composition skills utilizing analytical and critical writing and readings, as exemplified by various nonfictional works of scholarly Black personalities. Not open to students with credit in English 100 or higher numbered composition or creative writing course or Mexican-American Studies 111B.

120B. Composition and Literature (3) I, II
Outstanding works of fictional writings by Black authors. Practice of composition skills.

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.

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 and 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
Sociological concepts and models used to describe the social behavior of Afro-Americans in the interpretation of sociology from the Black perspective using the works of Black sociologists from 1900 to the present.

250. Psychology of Blackness (3) I, II
An analysis of 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) I
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 examination of relevant approaches to administration and management in relation to the development of skills in the analysis, development, and management of urban programs in low-income neighborhoods.

330. Black Child Development (3) I, 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, II**
Structure and functions of the Black family in contemporary American society.

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) II**
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. **Socio-Cultural Analysis of Black Languages (3)**
Prerequisite: Three units in Afro-American Studies.
Social and cultural function of Black languages, verbal and non-verbal, 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 attitude-value formation 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-development, conflict resolution, and proactive belief systems. Central aim 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.

452. **Race Relations Strategies (3)**
Prerequisite: Afro-American Studies 101 or 102 or 250.
Systematic inquiry into contemporary strategies and systems employed to ease racial tensions. Trends and approaches in military, religious, economic, educational, and other social institutions examined, focusing on those that offer most promise in terms of facilitating racial harmony.

453. **Issues in Mental Health: A Multicultural Perspective (3)**
Prerequisite: Afro-American Studies 230 or 250.
Examination of multicultural mental health issues, institutionalization, treatment, social policy, prevention, insurance, and community programs will be covered. Relevant research literature will be examined.

460. **Black Images in Western Literature (3) I, II**
Study of how the image of the Black has been portrayed in Western (white) literature and the attitudes and images of non-Black writers towards Blacks.

461. **Afro-American Literature (3) I, II**
Prerequisite: Afro-American Studies 101 or 260.
Contemporary writings of Afro-Americans. Analysis of themes, techniques, etc. of Afro-American fiction, poetry and drama.

470. **Comparative History: Afro-American and African Heritage (3) I, II**
Conceptual framework of African history and a comparative study of Afro-American institutions.
American Indian Studies

In the College of Arts and Letters

Faculty
Chair: Rouillard
Associate Professor: Rouillard
Lecturer: Russo

Offered by American Indian Studies
Courses in American Indian Studies
Major or minor work in American Indian studies is not offered.

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.

LOWER DIVISION COURSES

101A. Hopi Language Elementary (4) I
Development of beginning conversational competency in Hopi and the required insights into the culture as it affects language. Emphasis in acquiring the vocabulary necessary to carry on a basic conversation.

101B. Kumeyaay Language Elementary (4) I
Development of beginning conversational competency in Kumeyaay and the required insights into the culture as it affects language. Emphasis in acquiring the vocabulary necessary to carry on a basic conversation.

101C. Sioux Language Elementary (4) I
Development of beginning conversational competency in Sioux and the required insights into the culture as it affects language. Emphasis in acquiring the vocabulary necessary to carry on a basic conversation.

102A. Hopi Language Intermediate (4) II
Prerequisite: American Indian Studies 101A.
Continuation of Hopi 101A with emphasis on developing vocabulary, conversational skills and grammar.

102B. Kumeyaay Language Intermediate (4) II
Prerequisite: American Indian Studies 101B.
Continuation of Kumeyaay 101B with emphasis on developing vocabulary, conversational skills and grammar.

102C. Sioux Language Intermediate (4) II
Prerequisite: American Indian Studies 101C.
Continuation of Sioux 101C with emphasis on developing vocabulary, conversational skills and grammar.

110. American Indian Heritage (3) I, II
A study of 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 through creation and origin stories, legends, and poetry from the oral tradition to contemporary American Indian authors.

201A. Hopi Language Readings and Literature (4) I, II
Prerequisite: American Indian Studies 102A.
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.

201B. Kumeyaay Language Readings and Literature (4) I, II
Prerequisite: American Indian Studies 102B.
Study of Kumeyaay literature. Readings of legends, tales, stories, poetry of Kumeyaay. Translation of literature will be from English to Kumeyaay and from Kumeyaay to English.

201C. Sioux Language Readings and Literature (4) I, II
Prerequisite: American Indian Studies 102C.
Study of Sioux literature. Reading of legends, tales, stories, poetry of Sioux. Translation of literature will be from English to Sioux and from Sioux to English.

215. American Indian Psychological Perceptions (3) II
Topics relating to the dynamics of intercultural relations as reflected in the various levels of culture clash.

225. American Indian Music (3) I, II
Survey of American Indian music and the culturally diverse elements that differentiate music of North American tribes and culture groups. Traditional forms of study and investigation contrasted and compared with cultural elements as they relate to traditions.

225A. American Indian Art (3) I, II
American Indians 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

(Intended for Undergraduates)

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. (Formerly numbered American Indian Studies 120)

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.

430. American Indian Poetry and Fiction (3) II
American Indian literatures, focusing on selected tribal traditions. Relationship between American Indian poetry and fiction explored in works of Welch, Ortiz, Momaday, Silko and others.

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
Spiritual, religious, and cultural elements of the Indian way through symbols and ceremonies. Religions will be surveyed as they have been influenced by foreign elements and ceremonies. 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.
134 / American Indian Studies

499. Special Study (1-4)
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

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.

135 / American Studies

American Studies
In the College of Arts and Letters

Faculty
American Studies is administered through the American Studies Committee, composed
of faculty members from the departments of Afro-American Studies, Anthropology, English
and Comparative Literature, Geography, History, and Political Science. For names of
American Studies advisers, contact the College of Arts and Letters Student Advising Center,
I.E.-469.

Offered by American Studies
Master of Arts degree in American studies.
Major in American studies with the A.B. degree in liberal arts and sciences.

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 interrelation 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 semesters 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."

Major. A minimum of 36 upper division units to include American Studies 360 or 580;
469, 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 must take at least one course in each
area. The student may take no more than three courses in one discipline on the major
program.

Cultural Pluralism

People: Ethnic Community
Sociology 525 and one of the following: Afro-American Studies 471B, American Indian
Studies 440, Anthropology 446, History 539B, Mexican-American Studies 320 or 350B.
Process: Development of Identity
Afro-American Studies 362 or 461; Geography 356; Mexican-American Studies 335;
Music 344, Political Science 332 or 531; Sociology 422 or 547; Women's Studies 352 or 535
(when American in content).
Place: The City
Economics 458; Geography 354 or 555; History 543B; Mexican-American Studies 303;
Political Science 520 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, 526 (when appropriate); History 534, 535A, 541B, 548B;
Women's Studies 330 or 341B.
Special Study: American Studies 499.

Cultural Institutions and Artifacts
People: The Family
Afro-American Studies 331, Family Studies and Consumer Sciences 436, Mexican-
American Studies 320, Social Work 520, Sociology 536.
Process: Material Culture
Anthropology 302; Art 347, 550; Family Studies and Consumer Sciences 345; Geography
354B, 356; Natural Science 333.
+ Museum Internship when available.
Place: The Southwest
No more than one course in each discipline.
History 537B, 538A, 538B, 541A, 541B, Mexican-American Studies 320, 335, 350A, 350B,
376.
Period: Colonial
No more than one course in each discipline.
Anthropology 441, 446; English 521; History 530, 531, 543A, 548A.
Special Study: American Studies 499.

American Communication
People: Decision Makers
Business Administration 356; Economics 370; History 496; Political Science 335, 522,
531, 536; Public Administration 520; Sociology 521; Women's Studies 330.
Process: Communications
No more than one course in each discipline.
Afro-American Studies 360, 362, 461, 480; American Indian Studies 430; Art 568; English
524, 525; Journalism 500, 502, 503, 508; Mexican-American Studies 335; Music 351D;
Political Science 326; Psychology 540; Sociology 545, 546; Speech Communication 475.
Place: United States
Period: Nuclear Age
Two of the following:
English 526, History 536, Natural Science 333, Women's Studies 330.
Special Study: American Studies 499.

Majority American Goals and Values
People: The Middle Class
History 548B, Political Science 531, Sociology 521, Women's Studies 330.
Process: Tradition and Change in the Evolution of American Goals and Values
No more than one course in each discipline.
Business Administration 356, 456; Economics 474; Education 363; English 525;
Geography 356; History 435, 545A, 545B, 548A, 548B, Philosophy 564; Political Science
335, 345, 348, 546; Sociology 424, 537, 546, 547.
Place: United States
English 521, 523, 524, 525, 527; Geography 371; History 540, 546B, 547A, 547B, Political
Science 305, Religious Studies 520.
Anthropology in the College of Arts and Letters

Faculty
Emeritus: Anderson, Ezell, Rogers
Chair, Leach
Professors: Goldkind, Leach, Lippold, Pendleton, Stanford, Watson, Whitney
Associate Professors: Ball, Bartel, Greenfield, Henry, Himes, Moore, Pillsbury, Rohrl
Assistant Professors: Scollay, 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.

Preparation for the major. Anthropology 101, 102 (Six 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 of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units in Anthropology to include Anthropology 301, 302, 303, 304, 305, and nine units of electives selected from Anthropology with approval of the adviser.

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:

Bio-Cultural: Anthropology 101 and 301 and nine units selected from Anthropology 406, 496 (if appropriate), 499, 500, 501, 502, 503, 504, 505, 506 and 507.

Prehistory: Anthropology 101 and 302 and nine units selected from Anthropology 470, 471, 472, 474, 476, 478, 479, 481, 496 (if appropriate), 499, 561A, 561B.

Archaeology: Anthropology 101, 303, 304 and six units selected from Anthropology 305, 423, 424, 425, 426, 427, 428, 429, 430, 496 (if appropriate), 520, 522, 532.

Anthropology 303, 305, 423, 496 (if appropriate), 499, 500, 501, 502, 503, 504, 505, 506, and 507.

Courses in the minor may not be counted toward the major, but may be used to satisfy lower division requirements, if applicable.

LOWER DIVISION COURSES

101. Human Bio-Cultural Origins (3) I, II
Man's place in nature; fossil evidence for hominid evolution; evolutionary theory; racial, cultural, and genetic variability; relationship of physical and cultural adaptations; the rise of prehistoric and historic societies. (Formerly numbered Anthropology 100.)

102. Introduction to Cultural Anthropology (3) I, II
Prerequisite: Anthropology 101. 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. (Formerly numbered Anthropology 101.)

290. 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 290, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Principles of Physical Anthropology (3) I, II
Two lectures and three hours of laboratory. 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.

302. Principles of Archaeology (3) I, II
Prerequisite: Anthropology 101. Methodology of concept formation, hypothesis testing, model building and law development in archaeology. Emphasis on theories of culture change and process. Archaeological examples from a worldwide sample of prehistoric and historic societies.

303. Principles of Cultural Anthropology (3) I, II
Prerequisite: Anthropology 101. Development of theories which lie behind the science of anthropology. Applications of the theory of culture to field methods and interpretation of findings.

305. History of Anthropological Theory (3) I, II
Prerequisite: Anthropology 102.

350. World Ethnography (3)
Prerequisite: Anthropology 102.

351. Primitive Technology (3)
Two lectures and three hours of laboratory. Prerequisite: Anthropology 101 or 102.

400. Nonhuman Primates (3)
Prerequisite: Anthropology 101.

410. Language in Culture (3)
Prerequisite: Anthropology 102.

411. Survey of Anthropological Theory (3)
Prerequisite: Anthropology 101. Introductory survey of modern anthropological theory and history.
420. 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.

422. Music and Culture (3)
Prerequisite: Anthropology 102.
How the forms, functions and meanings of music vary cross-culturally. Understanding a society's music historically, historically and experientially, with emphasis on non-Western music. Universals of music and music use. Ethnological theories of music and music change.

423. Kinship and Social Organization (3)
Prerequisite: Anthropology 102.
Comparison of kinship systems and the structure of social relationships throughout the world. The methodological orientations and theories relating to social organization with emphasis on non-Western societies. (Formerly numbered Anthropology 523.)

424. Primitive Religion (3)
Prerequisite: Anthropology 102.
Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism. Primitive mentality and the supernatural. (Formerly numbered Anthropology 524.)

425. Peasant Society and Culture (3)
Prerequisite: Anthropology 102.
The social organization and culture of present-day small agricultural communities with emphasis on changes brought about by modernization. (Formerly numbered Anthropology 525.)

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 interpenetration of cultures. Illustrations from contemporary and historical societies: Indians of the Southwest, Eskimos, aboriginal groups of Australia, Africa and Oceania. (Formerly numbered Anthropology 526.)

427. Economic Anthropology (3)
Prerequisite: Anthropology 102.
Social relationships and cultural values inherent in the economies of primitive and peasant societies. Cross-cultural comparisons made of various means by which goods and services are acquired and distributed in non-Western, non-market-industrial societies. (Formerly numbered Anthropology 527.)

428. Ecological Anthropology (3), I, II
Prerequisite: Anthropology 102.
Biological and cultural interactions with the environment in relation to adaptations of human populations. Examples from a worldwide sample of societies. (Formerly numbered Anthropology 528.)

429. Urban Anthropology (3)
Prerequisite: Anthropology 102.
Cultural roles of urban centers and processes of urbanization in non-Western, non-industrial societies of past and present. Urban influence of traditional peasant and primitive peoples of Africa, Asia, and Latin America. (Formerly numbered Anthropology 529.)

430. Political Anthropology (3)
Prerequisite: Anthropology 102.
Political processes, institutions, and ideologies in primitive and peasant societies. (Formerly numbered Anthropology 530.)

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' operative capabilities. American Indian, African, Asian and other societies' cosmologies compared and applied to contemporary American issues and progress.

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 relations. (Formerly numbered Anthropology 540.)

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 evidence. (Formerly numbered Anthropology 541.)

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. (Formerly numbered Anthropology 542.)

443. Contemporary Latin American Cultures (3)
Prerequisite: Anthropology 102.
A social anthropological approach to the structure and dynamics of contemporary Latin American cultures. 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, institutions, and institutions. (Formerly numbered Anthropology 543.)

444. American Culture (3)
Prerequisite: Anthropology 102.
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. (Formerly numbered Anthropology 545.)

446. Southwestern Ethnology (3)
Prerequisite: Anthropology 102.
Indian cultures of the American Southwest in historic times, ecological adaptations, and the relationship of the aboriginal peoples to modern American life. (Formerly numbered Anthropology 546.)

447. Cultures of Southeast Asia (3)
Prerequisite: Anthropology 102.
Prehistoric, protohistoric and cultures of Indonesia, Philippines and neighboring Southeast Asian peoples. Includes both primitive and peasant societies and reviews them with respect to environment and the historical and cultural factors. (Formerly numbered Anthropology 547.)

448. Cultures of Oceania (3)
Prerequisite: Anthropology 102.
The aboriginal cultures and people of Australia, New Zealand, Micronesia, and Polynesia in prehistoric, historic and modern times. (Formerly numbered Anthropology 548.)

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. (Formerly numbered Anthropology 549.)
478. Post-Pleistocene Archaeology of Europe (3)
Prerequisite: Anthropology 101 or 102.
Culture change in the area from Ireland eastwards to European Russia in the time period from the initial Holocene hunter-gatherer-fisher adaptations and domestication of plants and animals through Roman Colonialism. (Formerly numbered Anthropology 578.)

479. Archaeology of Africa (3)
Prerequisite: Anthropology 101 or 102.
Culture change in the regions of northern Africa and sub-Saharan Africa beginning with the first evidence of hominid activity through ethnohistorically known societies. (Formerly numbered Anthropology 579.)

480. Topics in Arctic Archaeology (3)
Prerequisite: Anthropology 101 or 102.
Discussion of selected areas, periods or problems in the context of broad considerations of prehistoric, historic or contemporary cultural development and human ecology throughout the arctic and subarctic regions. See Class Schedule for specific content. (Formerly numbered Anthropology 580.)

481. Archaeology of East Asia and Oceania (3)
Prerequisite: Anthropology 101 or 102.
Culture change in the areas of China, Siberia, southeast Asia, Australia, Japan and Oceania beginning with the first evidence of hominid activity through ethnohistorically known societies. (Formerly numbered Anthropology 581.)

482. Ethnoarchaeology (3)
Prerequisite: Anthropology 302.
Theoretical perspective and method for analyzing contemporary societies in order to acquire archaeological insight of behavioral patterning. Survey of experiments duplicating technology of the past. Worldwide ethnographic examples.

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. 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. Human Paleontology (3)
Prerequisite: Anthropology 101.
Comparative anatomy of fossil man and other primates; evolutionary relationships and cultural associations.

502. Microevolution (3)
Prerequisite: Anthropology 101. Recommended: Anthropology 301.
The evolution of human populations over a short period of time. Interaction of the cultural systems of 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 population. Biology of blood groups, serum proteins, enzymes, etc., and analyses of gene frequencies. Significance of genetic markers in evolutionary studies.

508. Medical Anthropology (3)
Prerequisite: Anthropology 101 or 102.
Evolution and ecology of disease, medical beliefs and practices in non-Western cultures, and complexities of health care delivery in pluralistic societies.

511. Field Methods in Linguistics (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 102.
Principles and techniques of linguistic analysis. Problems and methods in the phonetic transcription and analysis of unwritten, non-Indo-European languages. Emphasis on phonetics, phonemics, field techniques, and work with informants.

520. Ethnological Field Methods (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 102.
The problems and techniques of obtaining data in ethnological and social anthropological field work; preparation, gaining and maintaining rapport, evaluating data, participant observation. A review of literature followed by work with informants.

522. Social Anthropology (3)
Prerequisite: Anthropology 102.
Development of social anthropology as a distinct subfield of cultural anthropology. Readings and analysis of functionalism as theory and methodology in the explanation of social and cultural processes. (Formely numbered Anthropology 352.)

531. Applied Anthropology (3)
Prerequisite: Anthropology 102. Recommended: Anthropology 426.
Application of anthropological concepts to solution of practical problems of culture change in community development, complex organizations, and interdisciplinary and cross-national programs.

532. Culture and Personality (3)
Prerequisite: Anthropology 102.
The relationship of individual personality to culture in a variety of cultures. A consideration of various theories and studies in the social and personality sciences.

560. Advanced Archaeological Field Methods (3)
One lecture and six hours of laboratory.
Prerequisite: Anthropology 101 or 102.
Advanced projects in excavation and stabilization of ruins, archaeological surveys, laboratory analysis and preparation of reports.

561A-561B. Archaeological Laboratory Methods (3-3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 560. Anthropology 561A is prerequisite to 561B. Semester I: Application of palynology, paleontology and technologies. Semester II: Practical applications of materials from 561A. Individual laboratory research project required.

582. Regional Anthropology (3)
Prerequisite: Anthropology 102.
In-depth study of a major geographical region of the world such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. See Class Schedule for specific content.

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 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 in art may be planned with an emphasis in crafts, environmental design, graphic communication, painting and printmaking, or sculpture. The programs in environmental design and in graphic communication have a preprofessional orientation supplemented by a strong liberal arts background. Environmental design can lead to interior, architectural, landscape design or city planning. Graphic communication 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 continuance 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 education prepares the student for teaching in either elementary or secondary schools.

Preparation for the major. Art 100, 101, 102, 103, 203, 258, 259. and six units of art electives. (27 units.)

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: Twelve units of advanced work in one area are strongly recommended.

Emphasis in Crafts

Preparation for the major. Art 100, 101, 102, 103, 203, 240, 243. (27 units)

Major. A minimum of 24 upper division units in art to include Art 341, 441, 541, 557; three additional units of art history; and nine units selected from Art 340, 440, 442, 443, 444, 541, 543, 544.

Emphasis in Environmental 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.

Major. A minimum of 24 upper division units in art selected from Group I (Interior Design) or Group II (Environmental Design) in consultation with an adviser.

Emphasis in Graphic Communication

Preparation for the major. Art 100, 101, 102, 103, 241, 258, 259; and six units selected from Art 203, 204, 205, 240, 243. (27 units)

Major. A minimum of 24 upper division units in art to include Art 341, 441, 541, 557; three additional units of art history; and nine units selected from Art 340, 440, 442, 443, 444, 541, 543, 544.

Emphasis in Painting and Printmaking

Preparation for the major. Art 100, 101, 102, 103, 203, 258, 259, and six units selected from Art 204, 205 or 210. (27 units)

Major. A minimum of 24 upper division units in art to include Art 557; three additional units of art history; and 18 units selected in consultation with the adviser from Art 403, 404, 405, 406, 410, 411, 500, 502, 503, 504, 505, 506, 509, 510, 511, 512.
Emphasis in Sculpture

Preparation for the major. Art 100, 101, 102, 103, 216, 258, 259; and three units selected from Art 203, 204, 220, 225, 231, 234. (24 units.)

Major. A minimum of 27 upper division units to include Art 517, 498A-498B, 518, 557, three additional units of art history; and nine units selected from Art 323, 331, 403, 404, 500.

Alternate Program for Advanced Degree Preparation

Students planning to pursue an advanced degree may elect a 63-unit (27 units lower division, 36 upper division) alternate degree program in Applied Arts and Sciences. This program involves the completion of the requirements for one of the emphasis areas listed above and 12 additional units of art planned in consultation with the adviser in the student’s area of emphasis.

Art 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. Art 100, 101, 102, 103, 220, 258, 259, and six units of electives in art. (27 units.)

Teaching Major. A minimum of 26-27 upper division units in Art to include Art 557, three units of art history; and 20-21 units from Group I or Group II in consultation with the Art Education Adviser.

Group I: Seventeen units of one major emphasis area, including Art 485 and 586, and three units of one other emphasis area. (20 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.)

Art Minor

The minor in art consists of a minimum of 22 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.

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. (Formerly numbered Art 200.)

103. Design and Aesthetics (3) I, II
Six hours.

Prerequisite: Art 101.
Continuation of Art 101. Original work in creative design including projects in three dimensions. (Formerly numbered Art 201.)

157. Introduction to Art (3) I
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. Tribal Arts of Native America, Sub-Saharan Africa and Oceania (3) I, II
Introduction to tribal arts of Native America, Sub-Saharan Africa and Oceania in cultural context, from the ancient to the 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) II
Six hours.

Prerequisites: Art 101, 102.
Composition of still-life and landscape in aqueous media. Maximum credit six units.

210. Printmaking (3)
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.
Three-dimensional sculpture using various ideas and materials. Maximum credit six units.

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.
Introduction of glaze for surface enrichment. Maximum credit six units.

231. Beginning Jewelry Design (3) I, II
Six hours.

Prerequisite: Art 220.
Design and construction of hand-built ceramic forms. Introduction of glaze for surface enrichment. Maximum credit six units.

234. Weaving (3) I, II
Six hours.

Prerequisite: Art 220.
Structure and design of woven fabrics. Maximum credit six units.

240. Graphic Imagery (3)
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 100 and 103.
Creative projects exploring the interrelation of fundamental art principles and design using phonetic symbols and typography. (Formerly numbered Art 141.)
242. Fashion Imagery (3) I, II
Six hours.
Prerequisites: Art 100 and 101.
Design of original contemporary costumes and the drawing of the fashion image.
Maximum credit six units.

243. Intermediate Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 241.
Typographic and design concepts applied to layout for contemporary media. (Formerly numbered Art 241.)

247. The House and Its Environment (3) I, II
Architecture, interior design, landscape and city planning for forming man's physical and aesthetic environment.

248. Visual Presentation (3) I, II
Six hours.
Prerequisite: Art 241.
Methods, materials, and tools of the professional environmental designer stressing art principles.

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.
Prerequisites: Art 100, 101, and 248.
Elementary problems in neighborhood planning, house design, and landscaping.

251. Interior Design (3) I, II
Six hours.
Prerequisite: Art 103.
Elementary functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume.

257. Modern Art (3) I, II
Development of painting, sculpture and architecture from the French Revolution to the present.

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)

300. Honors Course (1-3) I, II
Refer to Honors Program.

323. Furniture Design (3) I
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 Design (3) I, II
Six hours.
Prerequisite: Art 220.
Design and fashioning of jewelry. Not open to students with credit in Art 231.

334. Advanced Weaving (3) I, II
Six hours.
Prerequisite: Art 234.
Advanced problems in fabric design and weave construction including tapestry and rug weaving techniques. Maximum credit six units.

340. Advanced Graphic Imagery (3) I, II
Six hours.
Prerequisite: Art 240.
Investigation of experimental photographic and technical reproductive media. Maximum credit six units.

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, mock-ups, and transfers with terminal emphasis in transparency projection.

351. 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. (Formerly numbered Art 587.)

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.
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.

410. Intaglio Printmaking (3) I, II
Six hours.
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.

416. Advanced Sculpture (3) I, II
Six hours.
Prerequisite: Art 216.
Sculpture in diverse materials and techniques. 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 220.
Design and production of vitreous enamels. Maximum credit six units.

431. Jewelry and Metalwork (3) I, II
Six hours.
Prerequisites: Art 231, 331.
Design and production of jewelry and hollow ware.

435. Nonwoven Textile Construction (3) I, II
Six hours.
Prerequisite: Art 220.
Textile structures with an emphasis on nonloom techniques.

436. Textile Design (3)
Six hours.
Prerequisite: Art 220.
Application of design for the textile surface, using a broad variety of media and processes appropriate for both the individual designer and commercial reproduction. Media include stencil, block, silkscreen, batik, and tie-dye. Maximum credit six units.

440. Contemporary Environmental Graphics (3) I, II
Six hours.
Prerequisites: Art 101, 103 and 241.
Study of creative design for contemporary architectural and motivational graphics.

441. Advanced Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 341.
The relation of art structure and the aspects of visual communication.

442. Advanced Fashion Imagery (3) I, II
Six hours.
Prerequisites: Art 101, 242.
Emphasis on developing individual drawing concepts and creative techniques in fashion illustration. Creation of fashion drawings and fashion advertising layouts. Development of a professional portfolio. Maximum credit six units.

443. Drawing and Illustration for Graphic Communication (3) I
Six hours.
Prerequisites: Art 101 and 403.
The disciplines of realistic descriptive illustration including problems in imaginative, aesthetically refined painterly illustration. Media to include gouache, watercolor, scratch board, mixed media, and pen and ink.

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.

450. Synergetic Environments (3)
Six hours.
Prerequisites: Art 249, 454.
Synthesis of materials, space, sound and light using exploratory methods in full scale projects.

451. Residential Interior Design (3) Irregular
Six hours.
Prerequisites: Art 249 and 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) Cr/NC
Nine hours of laboratory.
Prerequisite: Credit or concurrent registration in Art 552.
Field experience with local professional interior designers in client relationships, business procedures, supervision of subcontracted work and installation, and execution of contracts.

454. Environmental Design (3) I, II
Six hours.
Prerequisite: Art 247.
Study, analysis and design synthesis of problems of more complexity, through interiors, landscape to architectural planning and, finally, concern for city design.

481. History and Theory of Environmental Design (3) Irregular
Prerequisites: Art 258 and 259.
Environmental arts. From the 15th to the 19th century.

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. (Formerly numbered Art 585.)

486. 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.

487. 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 the 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.

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 403.
Drawing and painting from nude and costumed models. Maximum credit six units.

504. Advanced Painting (3) I, II
Six hours.
Prerequisite: Art 404.
Pictorial composition and painterly process. Maximum credit six units.

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, gessocut, linoelum, collograph, 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, 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 silkscreen process. Maximum credit six units.

516. Advanced Sculpture (3) I, II
Six hours.
Prerequisite: Art 416.
The influence of art media, tools, and materials on aesthetic organization in sculpture in relief and in the round. Maximum credit six units.

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. Jewelry and Metalwork (3) I, II
Six hours.
Prerequisites: Art 231, 331, 431.
Advanced individual problems in jewelry. Maximum credit six units.

532. Metalsmithing (3) I, II
Six hours.
Prerequisites: Art 331, 431.
Individual problems involving fabrication processes already studied in order to increase technical competence while exploring personal design statements. Individual and small group study of specialized techniques such as phototetching, electroforming, small-scale forging in iron and cut steel. Maximum credit six units.

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.

### 541. Problems in Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 441.
Refinement of personally developed design concepts for visual communication with emphasis on individually directed solutions. The development of a portfolio of professional quality. Maximum credit six units.

### 543. Drawing and Illustration for Graphic Communication (3) I
Six hours.
Prerequisite: Art 443.
The disciplines of realistic descriptive illustration including problems in imaginative, aesthetically refined painterly illustration. Media to include gouache, watercolor, scratch board, mixed media, and pen and ink.

### 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, 347.
Survey of alternative solutions to the problem of design of the physical environment.

### 550. Environmental Prototypes (3)
Six hours.
Prerequisites: Art 247, 249, 250, 251, 450.
Research and development of creative architectural concepts with emphasis in space enclosure systems and cybernetics.

### 552. Professional Methods of Interior Design (3) Irregular
Two lectures and two hours of activity.
Prerequisites: Art 250, 251, 451.
Projects in nonresidential architectural interiors involving space planning systems analysis, specification writing, equipment and materials appropriate to commercial function. Maximum credit six units.

### 554. Proxemics and Interior Design (3) Irregular
Prerequisites: Art 249, 251, 451.
Lectures in proxemics and study of literature pertaining to relevant controlled experiments involving use and perception of enclosed spaces. Application of theories to field problems.

### 555. 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.

### 556. 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. Arts of the Pre-Hispanic Americas (3) I
Prerequisite: Art 158.
Arts of ancient Meso-America, Central America, Caribbean and South America from earliest times until contact with Europe.

### 562. Colonial Art of Latin America (3) II
Prerequisite: Art 259.
The art and architecture of Latin America from the colonial period to the present. Field trips included.

### 565. The Art of India and Southeast Asia (3) II
Prerequisites: Art 258 and 259.
Painting, architecture and sculpture of India and Southeast Asia viewed through their cultural history and aesthetic values. Field/museum trips.

### 566. The Art of Persia and the Islamic World (3) I
Prerequisites: Art 258 and 259.
Painting, architecture and sculpture of Persia and the Islamic world which manifest cultural history and heritage. Field/museum trips.

### 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: Art 158.
Form and content of the arts of Sub-Saharan Africa viewed within a cultural context.

### 570. Art of Oceania (3) II
Prerequisite: Art 158.
Form and content of the arts of Australia, Melanesia, Polynesia, and Micronesia viewed within a cultural context.

### 571. Medieval Art (3) II
Prerequisites: Art 258 and 259.
Development of painting, sculpture, architecture and architecture from the time of Constantine through the Gothic period.

### 572. Coptic and Byzantine Art (3) I
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.
The art of the Eastern Church from the reign of Justinian to the Russian Revolution.

### 574. Northern Renaissance Art (3) II
Prerequisites: Art 258 and 259.
Architecture, painting and sculpture of the Renaissance period in Italy.

### 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: Art 158 or American Indian Studies 245.
Form and content of the arts of Native North America viewed within a cultural context. Field trips.
577. History of Architecture (3) Irregular
Prerequisites: Art 157, 258, 259.
Architectural history from primitive times to the present

580. History of Costume (3)
One lecture and three hours of activity.
Prerequisites: Art 258 and 259.
Aesthetic, sociological, political, and cultural influences are interrelated to costumes. Lecture with visual activities developing into term projects, both verbal and visual.

581. History and Theory of Environmental Design (3) Irregular
Prerequisites: Art 258 and 259.
Environmental arts in the 19th and 20th centuries.

582. The Decorative Arts (3)
Investigations into the arts of ceramics, enameling, 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: Senior standing and Art 157.
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.

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 and Education; and the Library. Professor Alvin D. Cox is student adviser.

Offered by Asian Studies
Master of Arts degree in Asian studies.
Major in Asian studies with the A.B. degree in liberal arts and sciences.
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, 120, 121, or Philosophy 101 and 102; six units in Anthropology 101 and 102, Economics 101 and 102, Geography 101 and 102, or Political Science 101 and 103; and Asian Studies 105A-105B. Art 258 and 259 (unless waived by the instructor) are needed if Art 565 is selected in the major. Art 264 and 265 and Comparative Literature 271A-271B are recommended.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in a foreign language as part of the preparation for the major. Asian language recommended. Refer to section in catalog on "Graduation Requirements."

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 566; from the humanities not less than 12 units from at least two departments selected from Art 565; Comparative Literature 490*; 495*; 530, 570*, 571*, 577*, 580, 581*; History 496*; 561A-561B, 562, 563, 564A-564B, 565, 566, 567, 568, 569, 570, 571, 596*; Philosophy 301 (unless waived by the instructor) and 575*, 596; Religious Studies 501, 503, 506, 508, 509*, 540, 549*; Social Sciences 301, 360, 365*, 405, 498, 496* and 499*; Geography 331, 350, Political Science 499, 561, 562.

* 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; Comparative Literature 271A-271B, 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, 565, 566, 567, 568, 569, 570, 571; Philosophy 301 (unless waived by the instructor) and 575, 596; Religious Studies 501*, 503*, 506*, 508*.

Graduate Courses
Refer to the Graduate Bulletin.
Social Sciences: No less than six units selected from Anthropology 447*, 450*, 451*, 480; Business Administration 376; Economics 330, 465; Geography 331; Political Science 499, 562. No more than six units may be selected from among History 566, 567, 568, and Anthropology 451. No more than six units may be selected from among History 569, 570, and Anthropology 452. Three units from Asian Studies 499 or 596 may be substituted for these 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. (Formerly numbered Asian Studies 159A-159B.)

UPPER DIVISION COURSES (intended 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: Nelson
Professors: Angione, Daub, Nelson, 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 or 103, 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."


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 531, 541A, 550.

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 or 103, 109; Physics 195, 195L, 196, 196L, 197, 197L (16 units.)


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 or 103, 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.

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### 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.

**103. The Structure of Scientific Thought (3)**
- An inquiry into the origins and development of human thought about natural phenomena using historical perspective. Emphasis on the development of physics and astronomy from ancient notions to current conceptions—insight into the nature of human science.

**109. Astronomy Laboratory (1) I, II**
- Three hours of laboratory.
- Prerequisite: Credit or concurrent registration in Astronomy 101 or 103.

**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

**UPPER DIVISION COURSES**

(Also Acceptable for Advanced Degrees)

**520. Solar System Astronomy (3)**
- Prerequisites: Astronomy 101 or 103 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.

**598A. Senior Project (1)**
- Prerequisite: An acceptable master plan for graduation within one year.

**598B. Senior Project (2)**
- Six hours of laboratory.

**499. Special Study (1-3) I, II**
- Prerequisite: Consent of instructor.
- Individual study. Maximum credit six units.

### GRADUATE COURSES

Refer to the Graduate Bulletin.
Athletics

In the College of Professional Studies and Fine Arts

Faculty
Director: Bourdel
Associate Director: Hill, M.
Professor: Karr
Assistant Professors: Gilbert, Templeton
Head Coaches: Dietz, Gaines, Hill, R, Plunkett, Spears, Suwara
Coaches: Falk, Hammerschmidt, Kolf, LaPlante, Lay, Rea, Shafer, Stoglin, Toller
Coaching Specialist: Judd

Offered by the Department
Courses in athletics.
Major or minor work in athletics is not offered.

UPPER DIVISION COURSES

(1ntended for Undergraduates)

380. Intercollegiate Sport Practicum (2-3)
Major sports meet more than nine hours for three units; minor sports meet more than six hours for two units.
Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures for varsity team members. A sport may be taken only once for credit in either Athletics 380 or 381.

Subject fields of 380 are as follows:

Offered in the Fall
A Basketball (3)
B Cross Country (2)
C Football (3)
D Gymnastics (3)
E Swimming (2)

Offered in the Spring
H Baseball (3)
I Golf (2)
K Tennis (2)
L Track (3)
M Volleyball (2)
N Soccer (2)

381. Competitive Sport Practicum (2-3)
Major sports meet more than nine hours for three units; minor sports meet more than six hours for two units.
Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures. A sport may be taken only once for credit in either Athletics 380 or 381.

Subject fields of 381 are as follows:

Offered in the Fall
A Basketball (3)
B Cross Country (2)
C Football (3)
D Gymnastics (3)
E Swimming (2)

Offered in the Spring
H Baseball (3)
I Golf (2)
K Tennis (2)
L Track (3)
M Volleyball (2)
N Soccer (2)

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.

Biology

In the College of Sciences

Faculty
Emeritus: Taylor
Chair: Collier
Professors: Awbrey, Bae, Brandt, Clark, Collier, Cooper, Cox, Ebert, Farris, Ford, Hazen, Hurbert, Johnson, A, Kriksan, McBlair, Miller, Neil, Paolini, Parsons, Ratty, Rinehart, Schaprio, Shepard, D, Sloan, Zedler, P.
Associate Professors: Barnett, Daugherty, Diehl, Futch, Johnson G, Thwaites, Zedler, J.
Assistant Professors: Davis, C, Hanscom, McClennagen, Sabaddini, Schum

Offered by the Department
Doctor of Philosophy degree in genetics and in ecology.
Master of Arts degree in biology.
Master of Science degree in biology.
Major in biology with the A.B. degree in liberal arts and sciences.
Major in biology with the B.S. degree in applied arts and sciences.
Single subject teaching credential in life sciences in the area of biology.
Minor in biology.
Curricula which prepare for the fields of dentistry, conservation, fisheries, marine biology, medicine, veterinary medicine, and wildlife management.

Biology 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 total of 45 upper division units must be taken, of which 24 must be selected from the General Biology Degree requirements and the list of courses acceptable for electives.
A minor is not required with this major.

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 of catalog on "Graduation Requirements."

Biology 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 total of 36 upper division units must be selected from the general Biology Degree requirements and the list of courses acceptable for electives.
A minor is not required with this major.

General Biology Degree Requirements

Preparation for the Major. Botany 200; Biology 215; Chemistry 200, 201, and 230 or 231; Microbiology 121 and 122 or 125 or 155; Physics 180A-180B and 182A-182B; Zoology 200, 330 or 332. All courses not covered in this list must have prior approval by the Biology Department Chair.

Major. A minimum of 24 upper division units for the A.B. 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; one course for which Biology 411, 502 or 503 is prerequisite (exclusive of 501); and Biology 497E, 497G or 497P. Additional courses should be selected from the following elective courses: All 400 and 500 series biology, botany, chemistry, microbiology and zoology courses. 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. (38-39 units)

Major. A minimum of 36 upper division units in the biological sciences to include Biology 400; Biology 411, 430, 531, or Biology 411, 502, 503, Biology 572; Biology 497E, 497G; and eight units selected with the approval of the Teaching Credential adviser.

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.

LOWER DIVISION COURSES

100. General Biology (3) I, II
Prerequisite recommended: Concurrent registration in Biology 100.
A beginning 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.

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 reestablish 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) I, II
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.
Prerequisite: Mathematics 121 or 150.
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 (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Chemistry 100; Zoology 108; 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.

UPPER DIVISION COURSES

(3) intended for undergraduates

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) 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 of Learning requirement.
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.

320. Concepts of Ecology (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Biology 100.
Basic aspects of ecological theory relating to the organismal population, community and ecosystem levels of organization. Not open to biological sciences majors.

325. Ecology of Agrarian Societies (3)
Prerequisite: Biology 100.
Agricultural ecology of non-Western societies in the past and present: food and nutrition, disease, culture, energy relationships. Not open to biological sciences majors.

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 430, 503, or 544 or to biology majors.

351. Biology of Populations (3) I, II
Prerequisite: A college course in biology.
The relation of modern concepts of genetics, ecology and physiology to natural sciences based on experiences with problems of human populations. Not open to majors in the biological sciences.

362. Principles of Human Physiology (3) I, II
Prerequisite: Biology 100 or Zoology 108.
Principles of human physiology. Body maintenance and nerve and muscle physiology. Not open for credit to students with credit in Biology 261 or 572. Not acceptable for credit for Biological Sciences graduate or premedical curriculum programs; not recommended for Biology majors majoiing in a natural science; see Biology 572. (Formerly numbered Biology 462.)

380. Evolution (3) I, II
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.

390. Environment, Health and Disease (3) I, II
Prerequisite: Biology 100.
Features of man's physical, chemical, biological, emotional, and cultural environment and their relationship to specific problems of human pathology and disease. Not open to biological sciences majors.

400. Bioscience Methodology (3)
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. (Formerly numbered Biology 410.)
411. Ecology (4)  
Three lectures and three hours of laboratory.  
Prerequisites: Biology 215; Physics 160B and 182B; Chemistry 201.  
Ecological concepts covering all levels of organization from the individual to the ecosystem. (Formally numbered Biology 520.)

420. Conservation of Wildlife (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.

482L. 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.

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 Ecology (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.

499. Special Study (1-3) I, II  
Prerequisites: Fifteen units in biological sciences with grades of A or B and consent of instructor.  
Individual study. Maximum credit six units.

UPPER DIVISION COURSES  
(Also Acceptable for Advanced Degrees)

501. Population Biology (4)  
Two lectures and six hours of laboratory.  
Prerequisites: Biology 411 and credit or concurrent registration in Biology 430.  
Principles of population genetics and evolution, advanced topics in population and community ecology.

502. Cellular Physiology (4)  
Two lectures and six hours of laboratory.  
Prerequisites: Biology 215, Chemistry 230 or 231; Physics 160B and 182B.  
Cellular structure, macromolecules, energetics, growth, division, transport, excitability and motility. (Formerly numbered Biology 560.)

503. Genetics (4)  
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. (Formerly numbered Biology 540.)

505. History of Biology (3) I, II  
Prerequisite: A college course in biology.  
Lectures and reports tracing scientific development of biology.

519. Statistical Methods in Biology (3) I  
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) I, II  
Two lectures and three hours of laboratory.  
Prerequisite: Biology 411 or 420.  
Mechanisms controlling fertility, productivity, and regulation in agricultural ecosystems.  
The ecological design and management of agroecosystems.

528. Ecology of Renewable Resources (3) I, II  
Two lectures and three hours of laboratory.  
Prerequisite: Biology 520, 411, or 420.  
Ecological principles in exploitation and management of forest, range, watershed, and recreation lands for sustained human benefit.

530. Limnology (4) I, II  
Two lectures and six hours of laboratory.  
Prerequisite: Biology 411.  
Biological, chemical, and physical considerations of inland waters.

531. Biological Oceanography (4) I, II  
Two lectures and six hours of laboratory.  
Prerequisite: Biology 411.  
Ecological concepts as applied to pelagic and benthic marine organisms and their environment. Field and laboratory experience in oceanographic techniques, particularly the application to coastal environments.

532. Fisheries Biology (3) I, II  
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.  
Principles of population ecology and the application of 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 (4) I, II  
Two lectures and six hours of laboratory.  
Prerequisites: Biology 430 or 503.  
Analysis of development with emphasis on embryonic differentiation.

544. Human Genetics (4) I, II  
Three lectures and three hours of laboratory.  
Prerequisites: Biology 503 and either Biology 502 or Chemistry 361A.  
Principles of transmission as related to human biology. Molecular and cytogenetic causes of genetic disease and the genetics of human populations.
545. Cytogenetics (4) I
Two lectures and six hours of laboratory.
Prerequisite: Biology 430 or 503.
The physical basis of heredity. Study of the chromosomes and chromosome behavior in relation to problems in heredity and evolution.

546. Mutagenesis (3)
Prerequisite: Biology 430 or 503.
Basic principles and applications of mutation induction, expression, and detection at all levels of biological organization. Emphasis on mutation induction by chemicals and ionizing radiations.

547. Microbial Genetics (3) I, II
Prerequisite: Biology 430 or 503.
Theory underlying microbial genetics.

548. Behavioral Genetics (3) I, II
Prerequisite: Biology 503.
The genetic involvement of single and multiple gene systems in animal behavior.

549. Evolution and Population Genetics (3) I, II
Prerequisites: Biology 430 and 501, or 503.
Theory of evolution and modeling of genetic systems.

550. Ecological Genetics (3) I, II
Prerequisites: Biology 411 and 503, or 501.
Theory of adaptations of natural populations to their environments.

551. Advanced Genetics (3) I, II
Prerequisites: 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)
Prerequisite: 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; hormone mechanisms. May be repeated once with new content.

562L Comparative Physiology Laboratory (2)
Six hours of laboratory.
Prerequisites: Biology 502; credit or concurrent registration in Biology 562.
Directed laboratory projects emphasizing the design of experiments in physiological research. Emphasis on topics presented in Biology 562. (Formerly numbered Biology 562A)

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 photomorphogenesis, photomovement, photosynthesis and bioluminescence.

568. Immunochemistry (3) I, II
Prerequisite: Biology 502 or Microbiology 330.
Structure and function of the immunoglobulins and the chemical and physical nature of the antigen-antibody reaction.

570. Radiation Biology (3) I, II
Prerequisites: Physics 180B and 182B, Biology 100 or Zoology 200. Recommended: Biology 430 or 502.
Principles underlying radiological reactions of ionizing radiations. Effects of ionizing radiations at the biochemical, cell, organ, and organism levels.

570L Radiation Biology Laboratory (2) I, II
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) I, II
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 (3) I, II
Prerequisites: Physics 180B and 182B; Zoology 200.
Intended for students majoring in one of the natural sciences or engineering. Not open to students with credit in Biology 261 or 362.
Survey of basic themes in human physiology, presented at the cellular and organ system levels. Topics include membrane transport, nerve excitation, muscle contraction, hormone function, cardiovascular physiology, renal function, immunology, and sensory reception and integration.

573. 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. Not open to biological science majors for graduate credit.

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 natural sciences or engineering, Not open to students with credit in Biology 261 or 362.
Survey of basic themes in human physiology, presented at the cellular and organ system levels. Topics include membrane transport, nerve excitation, muscle contraction, hormone function, cardiovascular physiology, renal function, immunology, and sensory reception and integration.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Botany
In the College of Sciences

Faculty
Emeritus: Harvey, Preston
Chair: Rynie
Professors: Gallup, Kummerow, Rayle, Wedberg
Associate Professors: Alexander, Johnson
Assistant Professors: Carmichael, Weiss

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.

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 the 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 semesters 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."

Major. A minimum of 24 upper division units to include either Biology 411, 430, 501, or 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 the 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 semesters 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."

Major. A minimum of 36 upper division units in the biological sciences to include Biology 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 four units selected from a 400- or 500-level course in zoology.

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.

200. Introduction to Botany (4)
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

(Interested for Undergraduates)

312. Cultivated Trees and Shrubs (3) I, II
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.

319. Field Botany (4) (Offered at Imperial Valley Campus only)
Two lectures and six hours of laboratory.
Prerequisite: A course in college biological science.
Local native vegetation with emphasis on ecological units within floristic areas. Primarily for students not majoring in the College of Sciences.

320. Agricultural Botany of the Imperial Valley (4) (Offered at Imperial Valley Campus 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.

400A. 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 and design of individual project; oral and written reports.

400B. 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) I, II
Two lectures and six hours of laboratory.
Prerequisite: Botany 200.
Morphology and phylogenetic relationships of the algae.

502. Mycology (4) I, II
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.

511. Advanced Phycology (3)
One lecture and six hours of laboratory.
Prerequisite: Botany 501.
Physiology, ecology, culture and economic aspects of the algae. Maximum credit six units with three units applicable on a master's degree.

514. Plant Taxonomy (4) II
Two lectures and six hours of laboratory, field trips.
Prerequisite: Botany 200.
The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.

528. Plant Pathology (4)
Two lectures and six 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 (4)
Two lectures and six hours of laboratory.
Prerequisites: Botany 200; Chemistry 200, 201, and either 230 or 231.
The activities of plants, including food manufacture, absorption, conduction, transportation, respiration, growth, and movement.

532. Plant Metabolism (3)
Prerequisite: Botany 530 or Biology 502.
An examination of metabolic pathways in plants and their regulation and control.

540. Plant Anatomy (4) II
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.

562. Agricultural Botany (2)
Field trips to be arranged.
Prerequisite: Botany 200.
California crop plants, their general identification, cultural methods, and regional distribution.

572. Palynology (3) I
One lecture and six hours of laboratory.
Principles and methods of pollen and spore diagnosis, with reference to use in taxonomy, paleontology, anthropology, and medicine.

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 with three units applicable to a master's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.
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 admitted to the general business 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 — Business Administration 140, Business Law; Business Administration 180, Principles of Information Systems; Business Administration 212, Accounting Fundamentals, Business Administration 290, Written Communications in Business; Economics 101, Principles of Economics (Micro); Economics 102, Principles of Economics (Macro); Mathematics 119, Elementary Statistics; and Mathematics 120, Mathematics for Business Analysis.

After students complete the preparation for the business major core courses listed above with no less than a grade of "C" for any course, they must present evidence of completion of these courses in the form of college or university transcripts or official grade sheets to the Graduate Studies Office for the college of Business Administration.

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, and no less than 40 percent must be in courses outside of the areas of business administration and economics.

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 competence in American history, institutions and ideals, U.S. Constitution, and California state and local government.

9. Forty units in general education exclusive of courses in the major.

10. Application for graduation.

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. Also required as preparation for the major are the lower division prerequisite courses. 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 on general education and other degree requirements.

Any student majoring in Business Administration must make sure that 40 percent of the units counting toward graduation are taken outside of the fields of business and economics.

Accounting Major

With the B.S. Degree in Business Administration

Economics 101 and 102; Economics 201 of Mathematics 119, and Mathematics 120 or 150.

Required for the major, Business Administration 140, 180, 210A-210B or 212, 290W; 220.
Major. A minimum of 48 upper division units to include Business Administration 301 or 302, 310, 311, 312, 323, 350, 370, 405, 410, 490; Economics 320 or 321; and nine units selected from the following (must include two or more of listed accounting courses): Business Administration 314, 414, 417, 511, 512, 515; and all upper division courses except those listed above in the Departments of Finance, Information Systems, Management, and Marketing. A minimum of 40 percent (52 units) must be in course work outside Business Administration and Economics.

Finance Major
With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 290W; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (25-27 units.)

Major. A minimum of 40 upper division units to include Business Administration 301 or 302, 310, 311, 312, 323, 325, 327, 350, 405, 423; Economics 490; at least three units selected from Business Administration 329 and 425; and three units of electives selected from Business Administration. Fifty-two units must be taken outside Business Administration and Economics.

Information Systems Major
With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 280, 290W; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (29-30 units.)

Major. A minimum of 43 upper division units to include Business Administration 301, 315, 323, 350, 370, 380, 384, 390, 405, 480; three units of electives selected from Business Administration 360, 381, 383, 388, 482, 484, 485, 486, and nine units from one of the following areas: Applications Programming; Business Administration 381, 383, 485. Systems Analysis: Business Administration 388, 482, 484. Fifty-two units must be taken outside Business Administration and Economics.

Insurance Major
With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 141, 180, 210A-210B or 212, 290W; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (30-31 units.)

Major. A minimum of 39 upper division units, to include Business Administration 301 of Administration 315 or 410, 325 or 327, 341 or 456, 344, 352, 425, 445, 473 or 479, and Economics 390. Fifty-two units must be taken outside Business Administration and Economics.

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 management in one of the areas of study within the major.

1) Professional Curriculum Within the Major Field
Economics 101 and 102; Mathematics 119; and Mathematics 120 or 150. (25-27 units.)


2) Areas of Specialization Within the Major Field
Select 12 units from Business Administration 366, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459A, 460, 461, 462, 463, 464, 465, 466, 467. (Six units must be within one of the areas below.)
(a) Personnel and Industrial Relations: Business Administration 452, 453, 460.
(b) Production and Operations Management: Business Administration 461, 462.
(c) Organizational Behavior: Business Administration 451, 454.
(d) Statistics and Management Science: Business Administration 366, 463, 464.
(e) Business Environment: Business Administration 455, 456.
(f) Strategic, General, and International Management: Business Administration 450, 457, 458, 459A, 465, 466, 467.

3) Pattern Requirements Outside the Department of Economics and the College of Business Administration
A minimum of 12 units must be taken in upper division courses outside of the Department of Economics and the College of Business Administration. Acceptable courses at the upper division level are Mathematics 151 or higher and units in a foreign language. These courses are in addition to and may not be used to satisfy any general education requirements.

Marketing Major
With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 290W; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (25-27 units.)

Major. A minimum of 37 upper division units to include Business Administration 301, 302, 335, 370, 371, 405, 470, 471, and 479; nine units selected from Business Administration 372, 373, 374, 375, 376, 472, 473, 474, 475, and 476; and three units of electives selected from Business Administration 377, 378, 379, 472, 473, 474, 475, and 476. Fifty-two units must be taken outside Business Administration and Economics; 12 of these units must be at the upper division level.

Real Estate Major
With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 231, 290W; Economics 101 and 102; and Economics 201 or Mathematics 119. (25-27 units.)

Major. A minimum of 39-40 upper division units to include Business Administration 301 or 302, 323, 335, 350, 370, 406, 405, 433, 437; Public Administration 320, and 12-13 units from Business Administration 315, 333, 342, 373, 410, 431, 435, 441; Economics 322, 490, 559; Geography 354, 559. Fifty-two units must be taken outside 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 the requirements for the applicable specialization as outlined in this section of the catalog under the requirement for the applicable specialization. In consultation with the five departments within the College of Business Administration, undergraduate Coordinator of Teacher Education in the College of Business Administration, undergraduate Coordinator of Teacher Education in the College of Business Administration, and the College of Education, students shall develop programs which fulfill the State credential requirements.
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.

**Accounting:** A minimum of 16 units to include Business Administration 212, 310, 312 and 410.

**Business Management:** A minimum of 9 units to include Economics 101 and 102, Business Administration 210A-210B or 212, 350, and nine units selected from Business Administration 351 or 352, 356, 360.

**Personnel and Industrial Relations:** A minimum of 12 units to include Economics 101 and 102, Business Administration 210A-210B or 212, 350, 352, and six units selected from Business Administration 351, 452, 453, 460.

**Finance:** A minimum of 19 units to include Business Administration 210A-210B or 212, 321, 323, 327, and 329; Mathematics 119.

**Information Systems:** A minimum of 21 units to include Business Administration 180, 280, 380, 381, 384, 480, and three units selected from Business Administration 383, 386, 390, 482, 484, 486.

**Insurance:** Fifteen units required, including Business Administration 140, 342, 348, 441 or 443, and three additional upper division units in business administration with consent of insurance advisor.

**Marketing:** A minimum of 20 units to include Business Administration 210A, 370, Economics 102, and 12 units selected from Business Administration 301, 371, 372, 373, 374, 375, 376, 470, 472, 473, 474, 475, and 476.

**Production and Operations Management:** A minimum of 22 units to include Economics 101 and 102, Business Administration 210A-210B or 212, 301 or 302, 360, 390.

**Real Estate:** A minimum of 18 units to include Economics 102, Business Administration 140, 331, 333, 433, and three units selected from Business Administration 333, 431, and 437.

**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 finance, accounting, marketing, information systems, insurance, or real estate at the San Joaquin Valley campus. For those not seeking the B.S. degree, it provides a program designed to give upward mobility on the job.

All students seeking admission to the program must have successfully completed 56 units of lower division units with a grade point average of 2.0. This includes completion of Business Administration 140, 180, 210A-210B or 212, 290, Economics 101 and 102, Mathematics 119 and 120. (The Imperial Valley Campus equivalents are Business Administration 210A and 210B, Mathematics 119 and 120.) The Certificate will be awarded upon successful completion of the following courses: Administration 315, 321, 323, 339, 341, 356, or 389. (15 units)

**LOWER DIVISION COURSES**

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.

141. Business Law (3) I, II

Prerequisite: Business Administration 140.

Legal concepts and cases to be selected from business organization, negotiable instruments, property, security devices, creditors' rights and bankruptcy, trade regulation, insurance, instead of 141.

150. The Business Enterprise (3) I, II

The business enterprise and its function in society; interrelations of ownership, entrepreneurship, and administration; interactions within the firm and within and among industries.

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.

190. Beginning Typewriting (2)

Four hours.

Fundamentals of typewriting. Development of personal-use skills. Not open to students with credit for high school typewriting.

191. Advanced Typewriting (2)

Four hours.

Application of typewriting skills in solution of typical business problems.

192. Computational Machines Laboratory (1) I, II

Two hours of laboratory.

Laboratory course in figuring and calculating machine principles and operation.

193. Communicative Machines Laboratory (2) I, II

Four hours of laboratory.

Laboratory course in communication and duplicating machine principles and operation.

194A-194B. Shorthand (3-3)

Five hours of lecture and activity.

Prerequisite: Business Administration 194A is prerequisite to 194B. General shorthand theory; dictation and transcription.

210A-210B. (2-2) or 212. (4) Accounting Fundamentals I, II

Prerequisite: Business Administration 210A is prerequisite to 210B.

Organizing, recording, and communicating economic information relating to the business entity.

231. Real Estate Principles and Practices (3) I, II

Functions and regulation of the real estate market; transfers of property including escrows, mortgages, deeds, title insurance; appraisal techniques; financing methods; leases; subdivision development; property management. Prerequisite for major in Real Estate.

280. COBOL Programming (3)

Prerequisite: Business Administration 180.

Introduction to COBOL programming. Emphasis on coding techniques, file organization, and report preparation.

290W. Written Communications in Business (3) I, II

Principles of effective writing applied to business and industrial situations and to the organization and presentation of reports.

**UPPER DIVISION COURSES**

(Interested for Undergraduates)

300. Honors Course (1-3) I, II

Refer to Honors Program.

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 linear programming and queuing theory.

306. Scope and Function of Business Education (3)

Philosophy, scope, and functions of business education; analysis and development of curricula; instructional foundations of basic business subjects.
310. Intermediate Accounting (4) I, II
Prerequisite: Minimum grade of C in Business Administration 210A-210B or 212.
Theories and principles underlying financial statements and determination of income of profit-seeking enterprises. Emphasizes asset and liability accounting.

311. Financial Accounting Theory (4) I, II
Prerequisite: Business Administration 310 with minimum grade of C.
Equity accounting issues; theory construction; various income concepts; contemporary financial accounting issues; statement analyses.

312. Managerial Cost Accounting (4) I, II
Prerequisite: Minimum grade of C in Business Administration 210A-210B or 212.
Management use of accounting data for planning and control; theories and practices of cost accounting, standard cost systems, distribution analysis, and capital budgeting.

314. Advanced Accounting Problems (4) I, II
Prerequisite: Credit or concurrent registration in Business Administration 311.
Problems involved in partnerships, consignments, consolidations, receiverships, foreign exchange, fund accounting, and other specialized areas.

315. Accounting for Managers (4) I, II
Prerequisite: Business Administration 212 and credit or concurrent registration in Business Administration 390.
Managerial accounting and financial accounting for nonaccountants. Not open to students with credit in Business Administration 310 or 312.

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.

322. 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. 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: Business Administration 233 and 301 or 302.
The cost of capital and the evaluation process. Capital rationing problems. Risk and decision-making process. Emphasis on quantitative and computer methods in the decision-making process.

326. Financial Institutions Management (3)
Prerequisite: Business Administration 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.

327. Investments (3) I, II
Prerequisite: Business Administration 323.
Investment principles and practices with emphasis on problems of the small investor. Mechanics of purchase and sale, investment trusts, real estate mortgages, and the like.

329. International Business Finance (3) I, II
Prerequisite: Business Administration 323.
The financing of international business transactions; international payments and their environments; international financial institutions.

331. Real Estate Development (3) I, II
Prerequisite: Completion of lower division course requirements in business major or minor.
Operation of the real estate market; principles of valuation, financing, leasing and property management. Not open to students with credit for Business Administration 231.

333. Law of Real Property (3) I, II
Prerequisite: Business Administration 231.
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. Real Estate Institutions and Urban Development (3) I, II
Prerequisite: Business Administration 231.
The real estate market as a land use determinant. Housing as a public resource. Land as an agent of production. Real estate and the quality of urban life. Real estate development and urban infrastructure. Property taxation. Urban decline and property redevelopment.

339. Consumer Law (3) I, II
Prerequisite: Business Administration 140.
Consumer law as it relates to corporate responsibility and consumer protection, both from the consumer's and the managerial point of view.

340. Advanced Business Law (3) I, II
Prerequisites: Business Administration 140, accounting major.
Legal concepts and principles involving business organization, negotiable instruments, and security devices, creditors' rights, bankruptcy, insurance, wills, trusts, estates, and property.

341. Law in a Business Society (3) I, II
Prerequisite: Business Administration 140.
The nature of law and its impact on resolving economic disputes and social conflicts. The role of law in the 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 concepts, policies including life, fire, marine, inland marine, casualty and surety bonding.

344. Social Insurance (3) I, II
Prerequisite: Economics 102.
Public assistance, old age, survivors, disability, and hospitalization insurance. Workmen's compensation, unemployment compensation and disability insurance. Administration, coverage, financing, and benefit provisions. Strength and weakness of existing systems.

348. Employee Benefit Plans (3) I, II
Theory of employee benefit plans. The group technique. Group life and health insurance.

349. Life Insurance Principles and Practices (3) I, II
Prerequisite: Business Administration 342.
Economic and social aspects of life insurance; nature of life insurance and annuities; basic legal principles; theory of probabilities; premiums, reserves, and contracts; agency and management.

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, 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: Business Administration 330.
Human behavior in groups and organizations at the individual, interpersonal, and group level including the effect of organization structure on behavior. Emphasis on management as it relates to human motivation, influence, leadership, communication, group dynamics and conflict resolution.
352. Personnel and Industrial Relations (3) I, II
Prerequisite: Business Administration 350.
Management of human resources, including manpower planning and staffing, training and development, performance appraisal, compensation, and union-management relations. Emphasis on effects of economic, sociological and psychological factors on concepts and practices.

356. The Corporation in Modern Society (3)
Prerequisite: Business Administration 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: Business Administration 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: Business Administration 301.
Introduction to basic statistical methods related to business research, with an applied emphasis on descriptive statistics, regression, research reporting, and analysis of methodology appearing in business literature.

370. Marketing Principles (3) I, II
Prerequisite: Completion of all lower division coursework for the major or minor.
Marketing functions, activities of producers, wholesalers, retailers and other middlemen; channels of distribution; integration of marketing activities; price policies; government regulation.

371. Consumer Behavior (3) I, II
Prerequisite: Business Administration 370.
Examination of the nature of the market 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: Business Administration 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.

373. Marketing Communication and Promotion (3)
Prerequisite: Business Administration 370.
Management of the marketing communications function. Topics include advertising theory and measurement, communications theory, promotional strategies, public relations, and consumer behavior and analysis.

374. Physical Distribution Management (3)
Prerequisite: Business Administration 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: Business Administration 350 and 370.
Policies for purchasing raw materials, parts, supplies and finished goods, for commercial uses, and for wholesale and retail resale. Buying procedures, inventory control, vendor relations, legal problems, quality control, financing.

376. International Marketing (3) I, II
Prerequisite: Business Administration 370.
Bases and promotion of marketing; foreign marketing; organizations and methods, technical and financial features of international markets; selection of organization and trade channels. Determinants and principles of foreign marketing policies.

380. Information Systems Analysis and Design (3)
Prerequisite: Completion of lower division coursework 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 coursework required in the major or minor.
Assembly language programming and computer organization for business applications.

382. Information Systems Analysis (3) I, II
Prerequisites: Business Administration 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, management. Not open to students with credit in Business Administration 380.

383. Advanced COBOL Programming (3)
Prerequisite: Business Administration 380.
Advanced COBOL programming emphasizing documentation standards and program efficiency. (Formerly numbered Business Administration 481.)

384. Comparative Programming Languages (3)
Prerequisite: Business Administration 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.

385. Automated Administrative Systems (3)
Prerequisite: Business Administration 380.
Computer as an information and symbol processor. Text data storage and representation, non-numerical processing, computer systems in business. Includes general 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, management. Not open to students with credit in Business Administration 380.

386. Administrative Information Systems (3)
Prerequisite: Business Administration 380.
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, management. Not open to students with credit in Business Administration 380.

389. Consumer Income Management (3)
Prerequisite: Business Administration 380.
Consumer income management. Determinants and 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, management. Not open to students with credit in Business Administration 380.

390. Report Writing (3) I, II
Prerequisite: Business Administration 290W.
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.

401. Business Internship (1-3) I, II
Prerequisite: Consent of Dean of College of Business Administration.
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.

405. Business Strategy and Integration (3) I, II
Prerequisites: Business Administration 301 or (302), 323, 350, 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.

406. Methods in Teaching Business Skills (3) II
Prerequisite: Business Administration 350.
Philosophy and psychology of teaching business skills; presentation and evaluation of objectives, techniques, and materials for skill development.
410. Federal Income Tax (4) I, II
Prerequisite: Minimum grade of "C" in Business Administration 310 or 315.
Taxation of individuals, including income, deductions, credits, social security taxes, and property transactions.

414. Auditing (4) I, II
Prerequisites: Business Administration 311, 312 and 314.
Consideration of internal control in the design of accounting systems; flow-charting techniques; duties, ethics and responsibilities of the auditor; procedures for verification of financial statements; auditor’s reports.

417. Contemporary Accounting Problems (3) I, II
Prerequisite: Business Administration 414.
Integrative analysis of contemporary financial reporting issues, utilizing case studies, projects and field work.

421. Security Analysis and Investment Strategies (3) I, II
Prerequisite: Business Administration 327.

423. Financial Analysis and Management (3) I, II
Prerequisites: Business Administration 325 and Economics 490.
Utilization of financial data as related to the problems of business enterprises. Emphasis on decision making and research in finance.

425. Business Forecasting (3) I, II
Prerequisites: Business Administration 323, 370, and 301 or 302.
Techniques; specific forecasts, The use of forecasts in the firm.

431. Real Estate Finance (3) I, II
Prerequisite: Business Administration 231 or 331.

433. Theory of Real Property Value (3) I, II
Prerequisite: Business Administration 336.
Introduction to theories of real property value. Techniques of value determination. Data analysis techniques.

435. Income Real Estate Analysis (3)
Prerequisite: Business Administration 433.
Analysis of income producing real estate in order to establish its value for investment and financing purposes.

437. Housing, Renewal and Real Estate Dynamics (3)
Prerequisite: Business Administration 231.

441. Property Insurance (3)
Prerequisite: Business Administration 342.
Standard forms of property insurance including fire and allied lines, business interruption marketing, underwriting, investment, rate-making, loss adjusting, reinsurance, and consequential loss coverages, inland marine, and ocean marine. Other areas including government regulation.

443. Casualty Insurance (3)
Prerequisite: Business Administration 342.
Basis for legal liability; identification of personal business and professional liability situations, liability risk management. Analysis of major liability insurance contracts including automobile, malpractice, general liability, workmen’s compensation. Other areas including underwriting, rate-making, regulation, and reserves of casualty insurers.

445. Estate Planning (3) I, II
Programming fundamentals with emphasis on economic, actuarial, and legal principles, program coordination and integration with wills; guardianships; estate planning fundamentals; taxation; business life insurance. Analysis of life insurance selling as a career.

450. Venture Management (3)
Prerequisites: Business Administration 350 and senior standing.
Process of initiating, expanding, purchasing, and consolidating businesses. Concepts, theories and techniques of managerial innovation and implementation.

451. Organization Theory and Analysis (3)
Prerequisite: Business Administration 351.
Organizations as systems. Analysis of the impact of technological, structural and administrative factors on management.

452. Wages and Salary Administration (3) I, II
Prerequisite: Business Administration 352.
Major problems in the determination and control of compensation from employment. Comparison of underlying theory and practice.

453. Union-Management Relations (3) I, II
Prerequisite: Business Administration 353.
Relationships and interactions among unions, workers, and management. Emphasis on unionization, collective bargaining and central administration, interaction of union and management relative to society.

454. Interpersonal Processes (3)
Prerequisite: Business Administration 354.
Interpersonal aspects of management: interpersonal perception, communication, group dynamics, and influence from a managerial perspective.

455. American Business History (3)
Prerequisite: Business Administration 355.

456. Conceptual Foundations of Business (3) I, II
Prerequisite: Senior standing.
Interdisciplinary study of the foundations of business values and their evolution. The influence of institutional business values expressed in the impact of business on society.

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.
Management decision making within a dynamic environment through the use of interactive decision games.

459A. Strategic Management of Not-For-Profit Organizations (3)
Prerequisite: Business Administration 405.
Use of the latest management 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: Business Administration 352.
Design of personnel activities for matching people and jobs. Includes development of environmental techniques for personnel planning, staffing, appraisal, and development. Environmental constraints including legal and market forces.

461. Systems and Methods Analysis (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Business Administration 360.
Examination of systems approach as applied to methods analysis and work measurement. Modeling, analysis, synthesis, and management of systems. Analysis of case studies.
476. Analysis of Marketing Information (3) I, II
Prerequisite: Business Administration 301 and 370. The analysis and interpretation of marketing and business information. Decision-making procedures used in conjunction with marketing information.

479. Marketing Management (3) I, II
Prerequisite: Business Administration 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.

480. Data Management Systems (3)
Prerequisite: Business Administration 380. Principles of data base systems design: File creation, organization, and maintenance. Evaluation of current data base management systems.

482. Data Processing Practicum (3) I, II
Prerequisites: Business Administration 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)
Prerequisite: Completion of lower division courses required in the major or minor.
Public and private communication networks, data transmission, information flow and control, message switching, systems networking, distributed data processing.

485. Operating Systems Analysis (3)
Prerequisite: Business Administration 381.
Batch and interactive processing, storage management, file structures, and current operating systems for business data processing.

486. Advanced Systems Analysis and Design (3)
Prerequisite: Business Administration 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.

487. Strategic Management Through Negotiation (3)
Prerequisite: Business Administration 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.

488. Advanced Systems Analysis and Design (3)
Prerequisite: Business Administration 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.

489. Report Writing for Accountants (3)
Prerequisite: Business Administration 410. Advanced report writing with application to the professional needs of accountants.

490. Selected Topics in Business Administration (1-4) I, II
Prerequisite: Consent of Dean of College of Business Administration.
Selected areas of concern in business administration; see Class Schedule for specific content. May be repeated with new content with consent of Dean of College of Business Administration. Limit of nine units of any combination of 196, 198, 199 courses applicable to a bachelor's degree. Maximum credit six units.

491. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

511. Federal Income Tax (3) I, II
Prerequisite: Business Administration 410. Taxation of corporations, partnerships, estates, and trusts. Gift and estate tax (Formerly numbered Business Administration 411).
512. Advanced Managerial Accounting (3) I, II
Prerequisites: Business Administration 302 and 312.
Use of accounting information systems for managerial decision making. Introduction to
decision making situations which use accounting information for full or partial resolution.
Consideration of uncertainty, decision theory and specific decision contexts. (Formerly
numbered Business Administration 412.)

515. Accounting for Not-For-Profit Organizations (3) I, II
Prerequisite: Business Administration 310.
Principles of fund accounting useful in state and local governmental units, hospitals,
colleges, and universities. Comparisons with commercial accounting emphasized. Includes
study of budgetary accounting, encumbrances, internal checks and auditing
procedures. (Formerly numbered Business Administration 415.)

GRADUATE COURSES
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, Joseph, Robinson, Rowe, Wick
Chair: Roeder
Professors: Abbott, Bennett, Cobble, Coffey, Dahms, Grubbs, Hellberg, Isensee, Jensen,
Jones, Landis, Malik, Malley, Mathewson, O'Neal, Richardson, Ring, Roeder, Sharts, Spangier,
Sweat, Wadsworth, Walba, Woodson
Associate Professor: Leherz
Assistant Professor: Chatfield
Lecturers: Polisnelli, Wall

Offered by the Department
Doctor of Philosophy degree in chemistry.
Master of Arts degree in chemistry.
Master of Science degree in chemistry.
Minor 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*, or 204A-204B, 231, and 251*;
Mathematics 150, 151 and 152, Physics 195, 195L, 196, 196L, 197, 197L (43 units)
Major. A minimum of 36 upper division units to include Chemistry 410A-410B, 431, 520A
Recommended: Mathematics 340B, 340C. Individual master plans for each student are
filed with Evaluations.

* Chemistry 204A-204B replaces Chemistry 200, 201, and 251

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 preental 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. (44 units.)

**Major.** A minimum of 36 upper division units to include Chemistry 407, 410A-410B, 431, 457A-457B, 520A, 550, 560A-560B, 567, and one unit of 496; Biology 503c and three additional units of biology to be specified by the adviser; and six units selected from Chemistry 520A, 537, Biology 541, 544, 546, 547, 566, 568, 572; Botany 530, 532; Microbiology 310, 330, 515, 535, 553L; Zoology 503.

*Chemistry 204A-204B replaces Chemistry 200, 201, 251 in all degree programs.

**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. (44 units.)

**Major.** A minimum of 25 upper division units in chemistry to include Chemistry 407, 410A-410B, 431, 457A-457B, 520A, 550; one unit of 496; and three units of upper division electives in chemistry to be selected from Chemistry 510, 520B, 530, 537, 560A.

*Chemistry 204A-204B replaces Chemistry 200, 201, 251.

### OUTLINE FOR THE B.S. DEGREE AND CERTIFICATE

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### OUTLINE FOR THE A.B. DEGREE AND CERTIFICATE

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<td>General Education</td>
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### Emphasis in Biochemistry

**Preparation for the major.** Chemistry 200*, 201*, 231, 237, 251*; Mathematics 150, 151, 197L, strongly recommended.

**Major.** A minimum of 37 upper division units to include Chemistry 407, 410A-410B, 431, 457A, 550, 560A-560B, 567, and one unit of 496; Biology 503c and three additional units of biology to be specified by the adviser; and six units selected from Chemistry 520A, 537, Biology 541, 544, 546, 547, 566, 568, 572; Botany 530, 532; Microbiology 310, 330, 515, 535, 553L; Zoology 503.

*Chemistry 204A-204B replaces Chemistry 200, 201, 251 in all degree programs.

**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."
251. Analytical Chemistry (4) I, II
   Two lectures and six hours of laboratory.
   Prerequisites: Chemistry 201 and credit or concurrent registration in Mathematics 122 or 150.
   Theory and practice of volumetric, gravimetric and electrical methods of analysis. Not open to students with credit in Chemistry 250. Duplicate credit will not be allowed for equivalent work in Chemistry 204A-204B.

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. Chemical Principles in Environmental Protection (3) I, II
   Prerequisites: Completion of natural sciences requirements under the Foundations of Learning component of General Education. Review of fundamental chemical concepts and their application to problems in environmental degradation and resource depletion. Not open to chemistry majors.

302. Chemistry and Society (3) II
   Prerequisites: Completion of natural sciences requirements under the Foundations of Learning component of General Education. Recommended: Chemistry 130. Application and implications of chemical technology in the contemporary world. Advances in fuels, materials, medicinal and agricultural chemistry. Political, economic and ethical implications. Not open to chemistry majors.

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 310A or 310B. Fundamental principles of theoretical chemistry. This course cannot apply to the A.B. and certificate or B.S. major in chemistry.

316A-316B. Fundamentals of Biochemistry (3-3) I, II
   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.
   Prerequisites: Chemistry 250 and 251. Acquisition and statistical analysis of data and experimental design. (Formerly numbered Chemistry 207.)

410A-410B. Physical Chemistry (3-3) I, II
   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. Theoretical principles of chemistry with emphasis on mathematical relations.

431. Organic Chemistry (4) I, II
   Three lectures and three hours of laboratory.
   Prerequisite: Chemistry 231. Continuation of Chemistry 231.

437. Organic Chemistry Laboratory (1) I, II
   Three hours of laboratory.
   Prerequisite: Open only to students enrolled concurrently in Chemistry 431. Theory and practice of laboratory operations.

457A-457B. Advanced Laboratory Techniques (2-2) I, II
   Six hours of laboratory.
   Prerequisites: Chemistry 407 and 550. Chemistry 457A is prerequisite to 457B. Instrumental methods and physical chemistry concepts applied to advanced projects in chemistry. Emphasis on maintenance of the laboratory notebook with some report writing.

467. Clinical Biochemistry Laboratory (2)
   Six hours of laboratory.
   Prerequisite: Credit or concurrent registration in Chemistry 361A. Biochemical laboratory techniques. Methods used in clinical laboratories.

486. Selected Topics in Chemistry (1-4)
   Prerequisite: Consent of instructor.
   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.

496. Senior Project (1-3) I, II Cr/NC
   Prerequisite: Three one-year courses in chemistry.
   An individual investigation and report on a problem. Maximum credit six units.

500A-500B. Principles of Chemical Engineering (3-3)
   Same course as Mechanical Engineering 584A-584B.
   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.

501. Chemical Oceanography (3)
   Three lectures and occasional field trips.
   Prerequisites: Chemistry 201 and 231. Strongly recommended: Chemistry 250 or 251. Recommended: Chemistry 310B or 410B and Oceanography 320 or 541. The application of the fundamentals of chemistry to the study of oceans.

502. Chemical Literature (1)
   Prerequisite: Upper division standing in chemistry.
   An introduction to the availability, scope and use of the chemical literature.

510. Advanced Physical Chemistry (3)
   Prerequisite: Chemistry 410B. Mathematical tools essential to solving problems in chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.

520A. Inorganic Chemistry (3) I, II
   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) I, II
   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; the electronic structure of molecules (qualitative 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 310A or 410A. Chemistry 457A-457B recommended.
  Chemical, physical, and spectral methods discussed and employed to determine structure of organic compounds. Purification and separation techniques stressed.

550. Instrumental Methods of Chemical Analysis (2)
  Prerequisites: Chemistry 431 and credit or concurrent registration in Chemistry 410A.
  Theory and application of those instrumental methods of chemical separation and analysis most frequently used in all subdisciplines of chemistry.

551. Advanced Analytical Chemistry (5)
  Three lectures and six hours of laboratory.
  Prerequisite: Chemistry 550.

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 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) II
  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 radioisotopes.

586. 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.
Classics

In the College of Arts and Letters

Faculty
Emerita: Burnett
Professors: Eisner, Genovese, Piffard, Schaber, 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 an acquaintance 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外语 language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Latin may be counted as the equivalent of Classics 101L, three years the equivalent of Classics 201L. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

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 101L and 202L, or Classics 250G, Classics 250L, or Classics 101L and 202L or Classics 250G, Classics 250L, (8-10 units). Students should note that a number of the prerequisites, but these prerequisites do not constitute requirements per se for the major.

Foreign Language Requirement. The foreign language requirement is fulfilled through course work for preparation for the major plus one language course in the major.

Major. A minimum of 30 upper division units to include Classics 320, three units at Classics 496, six units of Greek or Latin; and three units of Classics 599L 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


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.

Major. A minimum of 30 upper division units to include Classics 320 and History 500A; nine additional units selected from classics, History 500B, or Philosophy 301; and 12-15 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.

Major. A minimum of 30 upper division units to include Classics 320 and History 500B; nine additional units selected from classics, History 500A, Philosophy 301; and 12-15 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.

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)

Preparation 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.

Foreign Language Requirement. The foreign language requirement is fulfilled through course work for preparation for the major plus one language course in the major.

Major. A minimum of 30 upper division units to include Classics 320, nine additional units selected from classics, History 500A, 500B, or Philosophy 301; and 15 units in Latin to include three units of Classics 599L as a course in teaching techniques.

Classical Humanities Minor

The minor in classical humanities consists of a minimum of 15 units, 12 of which must be upper division. Lower division units may be selected from the following courses in classics: Classics 120, 130, 140, 296. Three to nine upper division units must be selected from courses in each of the following three subject areas:

Language: Classics 310, 320, 330, 350, 496, 596C

Civilization: Classics 340, 496, 598C, History 500A, 500B

Related Disciplines: Anthropology 478, Art 568, Philosophy 301, Religious Studies 310; 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. Lower division units may be selected from courses in one of the following two subject areas:

- **Greek Language**: Classics 101G, 202G, 250G.
- **Latin Language**: Classics 101L, 202L, 250L.

Three to nine upper division units may be selected from courses in one of the following two subject areas:

- **Greek Language**: Classics 303G, 304G, 496G, 599G.
- **Latin Language**: Classics 303L, 304L, 496L, 599L.

Three to nine upper division units must be selected from courses in each of the following two areas:

- **Literature**: Classics 310, 320, 330, 350, 496, 599C.
- **Civilization**: Classics 340, 496, 599C; History 500A, 500B; 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.

**101G. Elementary Greek I (5)**

Introduction to ancient Greek, emphasizing grammatical foundations of New Testament and Attic prose. Aimed toward rapid comprehension. (Formerly numbered Greek 101.)

**101L. Elementary Latin I (5)**

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. (Formerly numbered Latin 101.)

**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. (Formerly numbered Classics 220.)

**130. Scientific Terminology (3)**

Etymological and grammatical analysis of scientific terminology of Greek and Latin derivation. (Formerly numbered Classics 250.)

**140. The Heritage of Greece and Rome (3) I, II**

Greek and Roman art, literature, and institutions as reflected in the Western tradition. (Formerly numbered Classics 270.)

**202G. Elementary Greek II (5) II**

Prerequisite: Classics 101G. Continuation of Greek grammar with selections illustrating syntax and style. (Formerly numbered Greek 202.)

**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. (Formerly numbered Latin 202.)

**250G. Accelerated Elementary Greek (8) S**

Not open to students with credit in Classics 101G and 202G. Intensive one-semester introduction to ancient Greek, emphasizing basic grammar, vocabulary, syntax. Preparation for Classics 303G. (Formerly numbered Greek 250.)

**UPPER DIVISION COURSES**

(Reserved for Undergraduates)

**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. (Formerly numbered Greek 303.)

**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. (Formerly numbered Latin 303.)

**304G. Readings in Greek Poetry (3) II**

Prerequisite: Classics 303G, 304G. Readings selected from Greek epic, elegy, tragedy. Authors may include Homer, Sophocles, Euripides. (Formerly numbered Greek 304.)

**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. (Formerly numbered Latin 304.)

**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. Authors such as Homer, Hesiod, 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.

**334. 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, mythic, 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. Limit of nine units of any combination of 496, 498, 596 courses applicable to a bachelor's degree. Maximum credit eight units.
C. Topics in Classics.
G. Topics in Greek.
L. Topics in Latin.

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.

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.
A minor is not required with this major.

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 semesters 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."

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 Major
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.

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 adviser's approval, from within one of the following interest areas:

European: Comparative Literature 505, 510, 511, 512, 513, 514, 525, 526;
Asian and Third World: Comparative Literature 526, 530, 538, 540, 545;
Literary Theory, Criticism and Genres: Comparative Literature 560, 561, 562, 563, 580, 581;

Literature and Society: When appropriate, Comparative Literature 490, 495, 550, 561, 562, 563, 570, 571, 580.

In addition the following variable content courses may be used in any of the above categories when they are appropriate: Comparative Literature 490, 495, 550, 561, 562, 563, 570, 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) Cr/NC
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 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.

271A-271B. Asian Literature (3-3)
A survey of the literature of Asia. Semester I: traditional literature; Semester II: modern literature.

272A-272B. Third World Literature (3-3)
Modern literature from Third World cultures. Semester I: literature from Africa, Asia, and Latin America. Semester II: Literature by ethnic minorities in the U.S.

UPPER DIVISION COURSES

(intended for Undergraduates)

490. Literary Movements (3) Cr/NC
A movement or theme in world literature—such as symbolism, realism, existentialism, alienation, or revolution. May be repeated with new 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 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)

505. The Bible as Literature (3) I, II
Same course as English 505. Prose and poetry of the King James version.

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.

525. Modern European Literature (3)
Selected works by European writers of the 20th Century.

528. 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.

530. 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 content. Maximum credit six units.

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 content. Maximum credit six units.

540. 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.

545. Modern Latin American Literature (3) I, II
Reading selections from major Latin American authors.

550. Seminar (3)
An intensive study of a topic to be selected by the instructor. May be repeated with new 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. 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 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 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 content. See Class Schedule for specific content. Maximum credit six units applicable on a master's degree.

570. Folk Literature (3)
Studies in the ballad, bardic poetry, oral and popular literature and folklore. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

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.

577. Major Individual Authors (3)
In-depth study of the works of a major author, such as Sophocles, Dante, Caravantes, etc. May be repeated with new 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 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 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.

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Criminal Justice Administration
In the School of Public Administration and Urban Studies
In the College of Professional Studies and Fine Arts

Faculty
Faculty assigned to teach courses in criminal justice administration are drawn from public administration and urban studies.

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 the catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major. Political Science 102, Sociology 101 and 110, and a three-unit course in elementary statistics (12 units)

Major. A minimum of 36 upper division units to include Public Administration 301, Criminal Justice Administration 301, 497 or 498, 540, and six units selected from Public Administration 310, 330, 340, 341, 450, 530 and 531; and 18 additional upper division units selected with the approval of a department adviser. Within this program students can emphasize areas such as law enforcement administration, court administration, correctional administration, juvenile justice administration, and deviance and social control. Interested students must seek guidance from a faculty adviser 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 one semester before graduation.

LOWER DIVISION COURSE
200. Introduction to Criminal Justice Administration (3)
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)
Interrelationship of social control, social policy and administration of criminal justice in contemporary American society.

310. Law Enforcement Administration (3)
Prerequisite: Sociology 101. 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)
Prerequisite: Criminal Justice Administration 301. 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. (Formerly numbered Criminal Justice Administration 530.)
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.

455. Selected Topics in Criminal Justice Administration (3)
Selected current topics in criminal justice administration. See Class Schedule for specific
content. Maximum credit six units.

478. Internship in Criminal Justice Administration (2-6) I, II
Prerequisite: Consent of instructor.
Analysis of special topics.

498. Internship in Criminal Justice Administration (2-6) I, II
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
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 programs and policies to prevent juvenile
delinquency and treatment of juveniles. An assessment of the proposed standards and goals for
juveniles in criminal 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 the local state and federal levels and in selected foreign
countries, including appraisal of proposed national standards and goals for prosecutors.

531. Probation and Parole (3) I
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)
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.
Examination 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 200 and 301.
Examination of policies and probable consequences of both public and private crime
prevention efforts from a social control perspective.
Emphasis in Design for Television
Preparation for the major. Drama 105, 240, 250, Telecommunications and Film 110, 120, 121, 122, 123 and 280. (30 units.)

Major. A minimum of 25 upper division units to include Drama 440, 448, 452, 540, Telecommunications and Film 520, 550, 581; and three units of Drama 496 or 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 the section of this catalog on 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.

In addition to course requirements, the student must participate in a minimum of three Main Stage productions and two Experimental Theatre activities.

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, 250. (21 units.)

Major. A minimum of 26 upper division units to include Drama 310, 427, 445, 460A-460B, 480, 545A, and three units in English selected from English 541A, 541B and approved sections of 297.

Credentia l requirements. A minimum of three lower division units in English selected from English 100; three upper division units in linguistics selected from Linguistics 510, 520, 524; and three upper division units in English selected from English 533, 546. (9 units.)

Drama Minor
The minor in drama consists of a minimum of 27 units in drama to include Drama 105, 130, 231, 240, 250, 420, 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
A survey of theory and practice in the contemporary theatre, including its literary, critical, and technical aspects viewed against historical backgrounds.

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 of 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
Two lectures and two hours of activity.
Prerequisite: Drama 105.
Development of the individual's ability to express thought and emotion through and by effective use of the voice and body. These fundamental skills may be applied to stage, radio, and television acting.

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 the application of fundamental skills to the 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 lectures 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
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

296. Experimental Topics (1-4)
Selected topics. May be repeated with the approval of the instructor. Limit of nine units of any combination of 296, 496; and 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)
301. Management of Drama Activities (1) I, II
Planning, preparation, management and supervision of drama tournaments, festivals and performances. Preparation, supervision, and management of productions.
Maximum credit two units.

310. Creative Drama (3) I, II
Techniques of creative drama, with emphasis on the use of technique for the development of the child emotionally and socially through dramatic improvisation.

320. Speaking the Classic Theatre (3) Cr/NC
Two lectures and three hours of laboratory.
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.
Theoretical and historical principles of production of modern musicals. Formerly numbered Drama 529.

329A-329B. 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 school productions. Practical experience through participation in university-sponsored productions.

330. Accents and Dialects for the Stage (3) I
Prerequisites: Drama 110 and 130.
Various accents and dialects most frequently occuring 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. (Formerly numbered Drama 520.)

431. Workshop in Improvisational Acting (3) I
Prerequisite: Drama 231.
Theories and principles of improvisational acting. (Formerly numbered and entitled
Drama 531, Advanced Acting Theory)

432. Advanced Acting (3)
Prerequisite: Drama 231.
Problems in characterization in contemporary drama. (Formerly numbered Drama 532)

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. (Formerly numbered Drama 440A.)

442. Theatre Workshop (1-3,3) I - II
Two hours of activity per unit.
A laboratory to give the student a variety of experience in the theatre including acting,
lighting, scenery, costumes and stage management. Maximum credit six units.

445. Rehearsal and Performance (1-6) Cr/NC
Two hours per unit.
Practical experience in departmental public performance.

448. Advanced Dramatic Production (3)
Two lectures and three hours of laboratory.
Prerequisite: Drama 240.
Scenery drafting and construction, with attention to the multiple-set play. Planning of
scenery construction and rigging for stage and television productions. (Formerly numbered
Drama 548.)

452. Costume History and Design for the Theatre (3) I
Two lectures and three hours of laboratory.
Prerequisite: Drama 250.
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. (Formerly
numbered Drama 552A.)

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.
A comprehensive study of the various problems confronting a stage director. (Formerly
numbered Drama 557.)

458. Stage Direction: Scenes (2) I, II
One lecture and three hours of laboratory; 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. (Formerly
numbered Drama 558.)

459. Stage Direction: One-act Plays (3) I, II
One lecture and six hours of laboratory; 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. (Formerly numbered Drama 559.)

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 460A may be taken without 460B. (Formerly numbered Drama
560A-560B.)

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.

495. 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 to the different styles of creative
production for stage, television and cinema. (Formerly numbered Drama
515.)

515. Directing for Children's Theatre (3) II
Prerequisite: Drama 255.
Staging and technical problems related to the production of plays for children; casting
and production approaches. Semester I: Shakespearean tragedy and history, directing
and production approaches, Seminar I: Greek tragedy, Shakespearean comedy and plays of
melodrama, and farce, Seminar II: Greek tragedy, and Strindberg. (Formerly numbered Drama
315.)

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
and directing. Semester I: Great periods in theatre history, with attention to characterization,
dramatic values, creative and directing. Semester I: Greek tragedy, Shakespearean comedy and plays of
melodrama, and farce, Semester II: Greek tragedy, and Strindberg. (Formerly numbered Drama
533 and 533A.)

540. Styles in Scenic Design (3) II
Prerequisite: Drama 440.
History of scenic design and the application of contemporary styles to various types of
stage, television and cinema. (Formerly numbered Drama 440B.)

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 equipment, 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.
A 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)
Prerequisite: Drama 250.
Interrelationship of period costumes on the movement and manners of the time and their application on the stage.

552. Costume History and Design for the Theatre (3)
Prerequisite: Drama 250 and 452.
A continuation of Drama 452 to include chronological study of clothing and theatrical design from the Restoration period to 1930, with practical applications in contemporary costume design for the theatre.

554. Costume Construction Techniques (3)
Prerequisite: Drama 250.
Period pattern drafting, draping, cutting, construction. Wig, millinery, armour, mask, accessory construction. Costume paint and dye techniques.

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.

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Economics

In the College of Arts and Letters

Faculty
Emeritus: Anderson, Chadwick, McClintic, Turner
Chair: Popp
Professors: Babilot, Barckley, Bridenstine, Clement, Flagg, Gifford, Hardesty, Jencks, Kertman, Leasure, Madhavan, Nam, Neuner, Popp, Poroy, Sebold, Venneris
Associate Professors: Hambleton, Stewart
Assistant Professors: Green, Parli, Rotella, Vogt
Lecturers: Bresnock, Frantz, Maani

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 is not required with this major.

Preparation for the major. Economics 101 and 102 or 303 and 304; 201. (9 units) All students are advised to take Mathematics 107 and to begin the sequence Mathematics 141, 142.

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 of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units, consisting of at least 18 units in economics and a maximum of six units in those approved courses in related fields (consult the Economics Department), to include Economics 320 or 324, 321 or 325, 347 or 541, plus 12 to 15 units of electives. (Economics 303 and 304 may not be used to fulfill minimal upper division requirements in the major.) 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 the 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. These courses include Economics 311, 313, 330, 332, 335, 338A-338B, 365, 380, 385, 422, 426, 447, 453, 464, 474, 502, 505, 520, 559, 561, and 592.

Economics of Business and Government: Students interested in preparing for operational positions in business or government are advised to take courses in economics from among Economics 370, 380, 401, 422, 426, 452, 453, 454, 458, 474, 475, 476, 477, 482, 484, 490, 502, and 592.

Pre-Law: Students interested in preparing for law school are strongly recommended to take courses from among Economics 370, 380, 401, 490 and 565. Also recommended are Economics 330, 332, 385, 453, 454, 474, 476 and 477.
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 systems: Economics 311, 312, 330, 332, 335, 336, 338A-338B; Human resource economics: Economics 380, 385, 482, 483, 484, 489; International economics: Economics 336, 385, 464, 468, 489, 483; Public issues: Economics 370, 401, 422, 426, 455, 454, 458, 474, 476, 477, 484, 489, 502. 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 Single Subject Teaching 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.

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. Economics 303 and 304 are not acceptable for upper division credit in the minor. 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, 324, 325, 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 relations. Examines such policies as fiscal-monetary policy, tax reform and government controls and provision of services. (Formerly numbered Economics 103)

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 microanalysis including national income analysis, money and banking, business cycles, and economic stabilization. Not open to students with credit in Economics 303. (Formerly numbered Economics 120)

102. Principles of Economics (3) I, II
An introduction to principles of economic analysis, economic institutions, and issues of allocation of resources, and the distribution of income, through the price system. Not open to students with credit in Economics 303. (Formerly numbered Economics 121)

201. Statistical Methods (3) I, II
Prerequisite: Mathematics 103 at this University or qualification on the Mathematics Placement Examination.
Introduction to descriptive statistics, statistical inference, correlation, index numbers, and time series. Not open to students with credit or concurrent enrollment in another course. (Formerly numbered Economics 142)

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)

Note: Wherever Economics 101 (303) is listed as a prerequisite, Economics 320 (324) satisfies the requirement; wherever Economics 102 (304) is listed as a prerequisite, Economics 321 (325) satisfies the requirement.

300. Honors Course (1-3)
Refer to Honors Program.

303. Economic Principles, Institutions, and Policies (3)
Prerequisite: Six units in history, political science, or sociology. Income and employment theory and its applications. Not open to students with credit in Economics 101. May not be used to fulfill minimal upper division requirements in the economics major or minor or liberal studies major.

304. Economic Principles, Institutions, and Policies (3)
Prerequisite: Six units in history, political science, or sociology. Price theory and its applications. Not open to students with credit in Economics 102. May not be used to fulfill minimal upper division requirements in the economics major or minor or liberal studies major.

311. History of Economic Thought (3)
Prerequisites: Economics 101 (303) and 102 (304). 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. Marxist Economic Theory (3)
Prerequisite: Six units in economics. Analysis of the theories of Marx, Engels, Lenin, Mao Tse-tung, Baran, Sweezy and others as they relate to the periods in which they were conceived and to modern times.

320. Intermediate Economic Theory (3) I, II
Prerequisite: Economics 101 (303), or Economics 100 with approval of department. Economic theory with special reference to national income analysis and the theory of investment. Credit will not be given for both 320 and 324.

321. Intermediate Economic Theory (3) I, II
Prerequisite: Economics 102 (304), or Economics 100 with approval of department. Economic theory with special reference to the theory of the firm and the industry; value and distribution. Credit will not be given for both 321 and 325.

324. Macroeconomic Analysis (3)
Prerequisites: Economics 101 (303), or Economics 100 with approval of department, and Mathematics 141 or 150. Mathematical interpretation of macroeconomic theory. Credit will not be given for both 320 and 324.

325. Microeconomic Analysis (3)
Prerequisites: Economics 102 (304), or Economics 100 with approval of department, and Mathematics 141 or 150. Mathematical interpretation of microeconomic theory. Credit will not be given for both 321 and 325.

330. Comparative Economic Systems (3)
Prerequisite: Economics 101 (303) or 102 (304) or 100. The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism, communism, and fascism. Criteria for evaluating economic systems. The individual and government in each system. Planning in a liberal capitalist society.

332. Capitalist Economy (3)
Prerequisite: Economics 101 (303) or 102 (304) or 100. The relationship between the dominant economic and political institutions of capitalist organization and the major social problems of modern capitalism.

335. Economic History of Europe (3)
Prerequisite: Economics 101 (303) or 100. 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.
336. Economic History of Emerging Nations (3)
Prerequisites: Economics 101 (303) or 102.
Evolution of economic organization, institutions, and policies of Africa, Asia, and Latin America. Regional emphasis will vary. Maximum credit six units.

338A-338B. Economic History of the United States (3-3)
Prerequisites: Economics 101 (303) or 102.
American economic development and national legislation in the fields of agriculture, industry, and commerce. Semester I: 1600-1865. Semester II: 1865 to the present.

347. Research Design and Method (3)
Prerequisite: Economics 201.
Instruction in the practical application of the various techniques of economic research: 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 (303) and 102 (304). Not open to students with credit in International problems, economic communities, organizations, and other selected topics.

365. Economics of Underdeveloped Areas (3)
Prerequisite: Economics 102 or 304.
The nature and causes of economic underdevelopment. Problems and policies for the economic development of underdeveloped areas of the world.

370. Government and Business (3)
Prerequisite: Economics 100 or 102 (304).
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)
Prerequisite: Economics 100, 101 (303), or 102 (304).
Labor organizations and their policies, wages, strikes, unemployment, social insurance, child labor, labor legislation, plans for industrial peace, and other labor problems.

385. Poverty in the United States (3)
Prerequisite: Economics 100 or 102 (304).
Economic aspects of poverty and racial discrimination. Relation of poverty to the general economic structure and to macroeconomic conditions such as unemployment and inflation. Possible solutions.

401. Public Finance (3)
Prerequisites: Economics 101 (303) and 102 (304).
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.

422. Business Cycles (3)
Prerequisites: Economics 101 (303) and 102 (304).
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.

426. Policies for Macroeconomic Stabilization (3)
Prerequisite: Economics 101 or 303.
Alternative policies for macroeconomic stabilization, including neo-Keynesian, Chicago, radical, and ecological views. Topics include GNP forecasting, dynamic models, monetary analysis.

447. Quantitative Economics (3)
Prerequisites: Economics 101 (303), 102 (304), and Mathematics 141 or 150.
The quantitative approach to economic problems. The use of mathematics in economic analysis.

452. Economics of Energy Resources (3)
Prerequisites: Six units of economics.

453. Economics and Ecology (3)
Prerequisites: Economics 101 (303) and 102 (304).
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 (303) and 102 (304).
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)
Prerequisite: Economics 101 and 102, or 303 and 304.
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 101 (303) or 102 (304) or 300.
Economic development, institutions, and problems of Latin America.

465. Economic Problems of South and East Asia (3)
Prerequisites: Economics 101 (303) or 102 (304) or 300.
Economic development, institutions, and problems of China, India and Pakistan, Japan, and Southeast Asia.

466. The Economics of the Soviet Union and Eastern Europe (3)
Prerequisite: Economics 101 (303) or 102 (304) or 300.
The development, institutions, and problems of the Soviet and East European economies.

469. Economic Problems of Africa and the Middle East (3)
Prerequisites: Economics 101 (303) or 102 (304) or 300.
Economic development, institutions, and problems of Africa and the Middle East.

474. Economic Concentration and Monopoly Power (3)
Prerequisites: Economics 101 (303) and 102 (304).
The evaluation of mergers. The implications of economic concentration and monopoly in terms of social and economic goals. Consolidations and other forms of monopoly power in terms of social and economic goals. Complexes and other forms of monopoly power in terms of social and economic goals. Complexes and other forms of monopoly power in terms of social and economic goals.

475. Industry Studies (3)
Prerequisites: Economics 101 (303) and 102 (304).
Current issues of national transportation policy.

477. Public Utilities (3)
Prerequisites: Economics 101 (303) and 102 (304).
482. Collective Bargaining (3)
Prerequisites: Economics 101 (303) and 102 (304).
Structures of labor relations, management and union problems; public policy and
collective bargaining; simulation of collective bargaining experiences.

483. Comparative Labor Problems (3)
Prerequisites: Economics 101 (303) and 102 (304).
Comparative study of labor relations systems in both advanced and
developing nations. Individual study of a particular country of the student's choice.

484. Economics of Health and Education (3)
Production and distribution of health, education, and training. Issues of equity and
financing. Benefits and losses from schooling and illness. Health and educational
investments related to aging.

489. Population and Economic Growth (3)
Prerequisite: Economics 101 (303) or 102 (304) or 100.
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
Prerequisites: Economics 101 (303) and 102 (304).
The elements of monetary theory. History and principles of banking with special
reference to the banking system of the United States.

498. 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 (325) or 401.
General equilibrium. Externalities of consumption and production, their impact on
allocative efficiency. Theory of social welfare 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 or 304, and 321 (325).
Theories of individual and social well-being. Economic and ethical bases of optimum
interdependence and externality; public and private sectors; properties of social welfare
functions.

520. Advanced Economic Theory (3)
Prerequisites: Economics 320 (324) and 447.
Recent contributions to the advanced theory of the firm, consumer demand, employment
and growth.

541. Econometrics (3)
Prerequisites: Economics 201 and 447 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
Prerequisite: Economics 321 or 453.
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.

559. Location Theory (3)
Prerequisite: Economics 458.
The optimal location of economic activities. The effects of spatial distribution of
resources and markets on the locational equilibrium of the firms, households, and public
facilities.

561. International Trade Theory (3)
Prerequisites: Economics 320 and 321, or 324 and 325.
The pure theory of international trade and commercial policy.

562. International Economic Expansion and Dependence (3)
Prerequisites: Economics 313 or 365 or 484.
Explores various theories of imperialism and dependence, the behavior of multinational
organizations, and role of state from Marxian and other perspectives. Theories examined in
terms of experience of specific countries (e.g., Latin America).

592. International Monetary Theory and Policy (3)
Prerequisite: Economics 320 (324) 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.
College of Education

Member of the American Association of
Colleges for Teacher Education

Faculty
Dean: Arciniega
Associate Dean: Nardelli
Assistant Dean: Mejia

Counselor Education Department
Emeritus: Manjos
Chair: Cummins
Professors: Bruce, Carnevale, Chamley, Cummins, Hawley, Jones, Malcolm, McFarlane, Miller, Ramage
Associate Professors: Alotti, Howard, Senour, Thompson
Assistant Professors: Cochran, Patton

Educational Administration Department
Emeritus: Lienert
Chair: Latta
Professors: Holt, Latta, Menno, Wetherill
Associate Professor: Warburton

Educational Technology and Librarianship Department
Chair: Harrison
Professor: Harrison
Associate Professor: Rossett
Assistant Professors: McAllister, Sharpe, Weir

Elementary Education Department
Emeritus: Bacon, Baker, Birch, Brydegaard, Campbell, Fisher, Hammad, I., Lape
Chair: Kaatz
Professors: Anderson, Becker, Berg, Blanc, Burnside, Charles, Gast, Gates, Giga, Goodson, Groff, Hill, Huls, Inskeep, Kendall, Moreno, Murphy, Nagel, Retson, Rixman, Ross
Rowland, Survey, Strom, Treadway, Widing
Associate Professors: Botkin, Clark, Elliott, Ford, Kaatz, Mooers, Morris, Pacheco, Reel
Assistant Professors: Conlon, Klaann

Secondary Education Department
Emeritus: Bradley, Friedlich, Gjerde, Hunter, Kinder, Prouty, Schrupp, Strand, White
Chair: McLevie
Professors: Ackerly, Anthony, Becklund, Bee, Briggs, Crum, Curry, Duckworth, Erickson
Fishburn, Folkerson, Gray, Haltaker, McCabe, McCoy, McLevie, Meek, Peterson, Person, Platz
Riggs, Samuels, Shaw, Smith, H., Smith, R., Stautland, Steckbauer, Yeliselman
Associate Professors: Altamura, Behn, Lapp
Assistant Professors: Lujan, Park

Special Education Department
Emeritus: Ballantine, Trimmer
Chair: Doorlag
Professors: Doorlag, Fearn, Forbing, McClard, Singer
Associate Professors: Brady, Lynch, Mainan, Sierra
Assistant Professors: Deitz, Fox, Lewis, Savage

Multicultural Education Department
Chair: Trueba
Professors: Cornejo, Trueba
Associate Professor: Contreras
Assistant Professors: Espinosa, Kuhman, Ochoa, Rodriguez

Offered by the College of Education

- Doctor of Philosophy degree in education.
- Master of Arts degree in education with concentrations in twelve areas.
- Master of Science degree in counseling.
- Master of Science degree in rehabilitation counseling.
- B.V.E. degree.
- Teaching credentials in all areas.
- Minor in Educational Technology and Librarianship.
- Certificate in Instructional Technology.

Teaching/Service Credentials

- The College of Education offers programs which lead to basic teaching and specialist credentials. Students who desire to seek a credential should consult with departmental advisors 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 Admissions Office, College of Education.
- The College of Education has obtained approval for programs leading to the following credentials:

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 twelve.
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.
4. Standard designated subjects: Teach subjects indicated on credential to adults in classes maintained by elementary, high school or community college districts.
5. Health services credential: Authorizing services as a school nurse.

Specialist Credentials

- Administrative Services
- Bilingual/Cross-Cultural
- Clinical Rehabilitation Services (Department of Communicative Disorders)
- Early Childhood
- Library Services
- Pupil Personnel Services
- Reading Specialist
- School Psychology
- Special Education: Communication Handicapped (Department of Communicative Disorders)
- Physically Handicapped
- Learning Handicapped
- Severely Handicapped
- Gifted

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:
- Educational Technology: Educational Technology and Librarianship 541, 549, 547+, 548, and 549 when applicable.
- Librarianship: Educational Technology and Librarianship 541, 549, 542, 544, 553, and 560 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 admissions requirements, must complete the following 12 units of course work:

Eduational Technology and Librarship 540, 541, 544 plus three units from Educational Technology and Librarship 542, 553 or 596.

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.

Standards for Admission

Multiple Subjects Credential (Elementary Education)

1. Formal application to the education program must be filed during the semester prior to beginning the credential program.
2. Recommendations. Applicants will be required to provide names and addresses of persons not related to them who could supply character reference information.
3. Prior experience with children and youth groups. Applicants will provide evidence of having had experience with children and youth in typical elementary classroom evaluation describing the experience and including the place and approximate dates of the experience. Laboratory activity courses providing such experiences are available to satisfy this requirement. Contact department for further information.
4. Successful completion of the Reading Comprehension and Writing Competency tests. These tests are offered several times each semester. Consult the Class Schedule or the bulletin board outside Education 151 for dates and time.
5. Health clearance. To meet the specific requirements for authorization to student teaching, a tuberculosis clearance must be obtained.
6. Interview. Interview(s) for admission will be required to provide names and addresses of persons with experience with children and youth groups.
7. Student teaching block selection. Application for a student teaching block assignment must be filed during the semester prior to beginning student teaching.
8. Grade point average. A 2.50 GPA on the last 60 units is required for admission to the program. Once admitted, a 2.50 GPA must be maintained.
9. Credential advising appointment. After completion of 45 college units, each applicant should sign up for an advising appointment with a faculty advisor to work out a planned program which will help determine an appropriate semester to begin student teaching.
10. Prerequisite courses. The following courses are required for admission to the program. Admission priority will be given to students who have completed all of the prerequisites:

   d. Physical Education 141, "Physical Education of Children," 2 units.

Major. The Liberal Studies Major may be selected for the teaching credential.

New Students Who Seek to Complete a Credential

Teachers with a preliminary credential or partial fulfillment of requirements 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.

Standards for Admission

Single Subject Credential (Secondary Education)

Admission to the Department of Secondary Education is accomplished in three stages:

1. Stage I (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, 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 who plan to enroll in a credential program, regardless of the extent of their college work taken at this university in order to obtain a recommendation for a credential. Regardless of the extent of education work completed elsewhere.

2. Admission to Stage II (Secondary Education 401, 402, 406, and preferably 403—except majors in Art, Music, and P.E.—and Ed. Tech. 404). Courses in Stage II comprise the single 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 preregistration meetings held during the middle of the semester before the student plans to start the professional courses. Normally these meetings are held in the SECED 400 classes, but in the following, the course must be on file in ED 100E office at least one month before the end of the semester preceding enrollment in Stage II. Check deadlines dates in ED 100E.
   a. Completed application.
   b. Transcripts of all college work verifying an acceptable grade point average of 2.75 or better in the upper division major. Unofficial student copies of transcripts are not accepted. Those whose GPA's do not meet these requirements are encouraged to retake the course. Those whose GPA's do not meet these requirements are encouraged to retake the course. Those whose GPA's do not meet these requirements are encouraged to retake the course. Those whose GPA's do not meet these requirements are encouraged to retake the course.
   c. Favorable recommendation from the adviser in the major department or verification of satisfactory completion of the Reading Comprehension and Writing Competency tests. (If a satisfactory score is not achieved, the student must complete the remedial courses.)
a remedial program before admission to the first block. Additional information is available through the Department of Secondary Education.

f. Student teaching preference cards and request forms.

Priority for admission is based upon the date of clearance for these requirements.

3. Admission to Stage III (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, 405.

Admission is based upon:


b. Application for enrollment in SECED 406 through submission of completed student teaching forms to the Student Teaching Office in ED-100E. Enrollment in SECED 407 Seminar, must be concurrent with enrollment in SECED 406. Student Teaching.

c. A student must successfully complete course work to clear U.S. Constitution requirement or successfully pass U.S. Constitution examination.

d. A 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-100E, 265-6119).

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 Student Resource Information Center or the College of Education, Room ED-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 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 order to be credited toward meeting credential requirements or pattern requirements for a multiple subjects credential, information regarding this option is presented in the Interdisciplinary Programs section of this catalog.

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. Attraction 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/field work and/or other to satisfy PL 94-142 — “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 preliminary credential. Information regarding this option is presented in the Interdisciplinary Programs section of this catalog.

Option 2. 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," which include the following:

A minor is required with this major.

The Liberal Studies Major Option 2 meets all the requirements for the multiple subjects/diverified major as specified for the Multiple Subjects Credential. The Liberal Studies Major Option 2 does not meet the requirements listed in the section of this catalog on "Graduation Requirements." 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 course work is required for acceptance into the education program and may be included in the work required for graduation:

Liberal Studies Major unless otherwise noted:

Mathematics 210A-210B
Health Science 101 or 320 or Biology 296 (Biology of Health)
Music 102
Physical Education 141 (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 II is available at the University Advising Center.
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:

Acceptable Single Subject Areas

<table>
<thead>
<tr>
<th>Single Subject Credential</th>
<th>Major</th>
<th>Single Subject Credential</th>
<th>Major</th>
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</thead>
<tbody>
<tr>
<td>Art</td>
<td>Life Sciences</td>
<td>Art</td>
<td>Biology</td>
</tr>
<tr>
<td>Business</td>
<td>Accounting</td>
<td>Business</td>
<td>Botany</td>
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<tr>
<td></td>
<td>Finance</td>
<td></td>
<td>Microbiology</td>
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<td></td>
<td>Information Systems</td>
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<td>Zoology</td>
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<td></td>
<td>Management</td>
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<td>Mathematics</td>
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<td></td>
<td>Marketing</td>
<td></td>
<td>Music</td>
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<tr>
<td>English</td>
<td>Comparative Literature</td>
<td></td>
<td>Physical Education</td>
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<tr>
<td></td>
<td>Drama</td>
<td>English</td>
<td>Physical Sciences</td>
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<tr>
<td></td>
<td>Journalism</td>
<td></td>
<td>Chemistry</td>
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<tr>
<td></td>
<td>Linguistics</td>
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<td>Physical Science</td>
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<td></td>
<td>Speech Communication</td>
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<td>Physics</td>
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<td>Foreign Languages</td>
<td>Classics</td>
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<td>Anthropology</td>
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<td>French</td>
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<td>Russian</td>
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<td>Health Science</td>
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<td></td>
<td>Spanish</td>
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<td>Mexican American Studies</td>
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<tr>
<td>History</td>
<td>History</td>
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<td>Political Science</td>
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<tr>
<td>Home Economics</td>
<td>Home Economics</td>
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<td>Psychology</td>
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<td></td>
<td>Industrial Arts</td>
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<td>Religious Studies</td>
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<td></td>
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<td></td>
<td>Social Science</td>
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<td></td>
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<td></td>
<td>Sociology</td>
</tr>
</tbody>
</table>

Attainment of this credential requires:
1. A bachelor's degree (or higher) with one of the approved single subject majors listed above.
2. Completion of an approved program of professional education. The required courses are Secondary Education 400, 401, 402, 403 (except for majors in Music, Art, and Physical Education. The reading requirement may also be satisfied by completion of the Reading section of the N.T. E. test). 405, 406, 407, or Educational Technology and Librarianship 404.
3. Passage of subject matter examination(s) (N.T.E. Test) or waiver thereof through completion of approved credential major in one of the areas listed above, with written recommendation from the departmental Ryan adviser.
4. Knowledge of U.S. Constitution, as demonstrated by successful completion of approved course or examination (see the section of this catalog on "Graduation Requirements").
5. Successful completion of Health Science 321.

Persons whose programs allow them to meet these requirements would be eligible for a preliminary credential at the same time they finish a four-year college program.

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 "General Regulations."

Single Subject (Secondary) — Preliminary

Bilingual / Cross Cultural Emphasis

Persons interested in the single subject credential with a bilingual emphasis must meet the same requirements for admission as those in the regular single subject credential program. In addition, applicants must pass a fluency test in oral and written Spanish.

Information concerning test procedures is available from the special program adviser. Professional course requirements are the same for this emphasis as in the regular program, plus additional bilingual competencies. A seminar in single subject bilingual teaching strategies is recommended. As part of the regular professional sequence, a minimum of one semester of student teaching in Secondary Education 405 and 406 within a bilingual setting is required.

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 postbaccalaureate credit as explained in the section of this catalog on "General Regulations."

Bilingual/Cross-Cultural Specialist Credential

Candidates in the credential program must possess a valid California Teaching Credential and must successfully complete 24 units of credit as follows:

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Education 690: Procedures of Investigation and Report</td>
</tr>
<tr>
<td>2. Multicultural Education Core Curriculum</td>
</tr>
<tr>
<td>3. ED 550 Philosophy of Cultural Pluralism in Education</td>
</tr>
<tr>
<td>4. ED 553 Multicultural Oral Language Assessment Training</td>
</tr>
<tr>
<td>5. ED 650 Bilingual/Cross-Cultural Curriculum Development</td>
</tr>
<tr>
<td>6. ED 651 Bilingual/Cross-Cultural Teaching Strategies</td>
</tr>
<tr>
<td>7. Education courses: All students are required to enroll in special sections of Education 687, Workshop in Community Influences on Learning and Curriculum Planning</td>
</tr>
<tr>
<td>8. Electives: Selected from 500/600/700-numbered courses from academic disciplines or ethnic studies with approval of adviser on the basis of the student's interests, goals and needs</td>
</tr>
</tbody>
</table>

Candidates must notify the Credentials Office of their program of study.

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. Required courses are Elementary Education 502, 571, 710, 711, 712, 713.
4. Verification of two years of successful teaching experience at the preschool or primary grade levels.
Health Services Credential
San Diego State University offers curricula leading to the Health Services Credential. This credential authorizes the holder to function as a school nurse. For information concerning the credential, the student is referred to the Department of Secondary Education Office, ED-100E.

The Health Services Credential has been approved by the Commission for Teacher Preparation and Licensing.

Standards for Admission
1. Baccalaureate degree.
2. Active registration as an R.N. (including Community Health)
3. Admission and planning interview with program adviser.

Program
The following program elements are required of all health services credential candidates (30 units)

- SP ED 500 Exceptional Individuals ............ Units
- SECED 686 Guidance Problems in Education ......... 3
- SPA 105 Introduction to Audiology .................. 3
- SPA 340 Audiology: Principles ..................... 3
- SPA 341 Techniques of Audiology ................. 3
- HS 406 Health Education Methodology ............ 3
- HS 520 Administration of the School Health Program .... 3
- NURS 480 School Nursing ........................ 3
- ED 720B Internship (School Nursing) ........... (Prerequisite: Nursing 414) 
  (Prerequisites for 720B include HS 510, 520, SECED 667, SP ED 500, SPA 105) .... 1-6
- ED 687 Workshop in Community Influences on Learning and Curriculum Planning ... 1-3
- Electives: Maximum credit nine units; subject to prior approval and dependent upon previous experience.

Library Services Credential
San Diego State University offers curricula leading to the Library 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.

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. Interview(s) with a faculty member in the Department of Educational Technology and Librarianship.

Program
The following program elements are required of all library credential candidates (31 units)

- ETL 445 School Library Media Programs ............... 3
- ETL 483 Directed Teaching—Library Practice ........ Cr/NC 4
- ETL 540 Educational Technology ........................ 3
- ETL 541 Media Production Techniques ................. 3
- ETL 546 Basic Reference Materials .................... 3
- ETL 547 Selection of Instructional Materials .......... 3
- ETL 548 Cataloging and Classification ............... 3
- ETL 675 Seminar in the Administration of Instructional Media Centers .... 3
- ETL 678 Literature for Children ........................ 3
- ETL 679 Literature for Adolescents .................... 3

Total Units 31

Pupil Personnel Services Credential
San Diego State University offers programs leading to the Pupil Personnel Services Credential. 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 application 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 680, Counselor Education 610A, 610B, 620, 640, 645, 650, 660, 667, 670, 671, 610B, 610A, 730, 647, 654, 664, 665, 670, 671A, 671B, 730, and 740. Students who have had comparable course work outside the Department of Counselor Education and who desire to apply for the P.P.S. Credential through this department are required to provide evidence, in each case to the satisfaction of the relevant faculty, 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 different 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 Counseling is required. A minimum of 30 acceptable graduate units in residence are required.

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 Clinical Training Center.

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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</thead>
<tbody>
<tr>
<td>ED 511 Reading Diagnosis</td>
<td>3</td>
</tr>
<tr>
<td>ED 621 Advanced Diagnosis in Reading</td>
<td>3</td>
</tr>
<tr>
<td>ED 625B Interpersonal Communication</td>
<td>1</td>
</tr>
<tr>
<td>ED 631 Reading Clinic</td>
<td>3</td>
</tr>
<tr>
<td>ED 690 Procedures of Investigation and Report</td>
<td>3</td>
</tr>
<tr>
<td>ED 661 Seminar in Reading in Elementary Education, or SECED 681</td>
<td></td>
</tr>
</tbody>
</table>

San Diego State University offers programs leading to the following credentials: Health Services Credential, Library Services Credential, Pupil Personnel Services Credential, and Reading Specialist Credential. Each credential has specific requirements for admission and program completion. For more information, please contact the respective departments or the Department of Counselor Education.
Seminar in Secondary School Reading
ED 652 Topics in Reading Education. Three required categories: 3
652A Linguistic/Cultural Difference and Reading.
652B Interpersonal/Interdisciplinary Communication Skills.
652C Children/Young Adult Literature; Oral and Creative Responses
to Reading.
Electives

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.

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 Arts in Education degree with a concentration in Reading Education. The 12 units of electives for this credential must be selected with the approval of a reading program adviser. Students who have not had extensive experience teaching reading should take Education 701, Field Experience as a Reading Specialist, Education 795A and 795B may be taken as elective units for the Education.

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.

Requirements
1. Admission to the University and to the Department of Counselor Education.
2. The School Psychology Credential program is built around developing certain competencies rather than the accumulation of a given number of course hours. However, these competencies can be developed by completing the approved courses in the School Psychology Program which includes Counselor Education 521, or equivalent, and taking the 641A-641B, 720, 752, 760, Education 511, and Special Education 500, 501, 510, 420, 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, 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 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.

Special Education Specialist Credential
San Diego State University offers curricula for the Special Education Specialist Credential. These specialties include: Communication Handicapped, Learning Handicapped, Physically Handicapped, and Gifted. For information concerning the Disorders, the student is referred to the Department of Communicative Disorders. For information concerning the other specialties, the student is referred to the Department of Special Education.

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 5, §52210 (subjects commonly taught at a community college).

Baccalaureate Degree Candidates
Education 380, 381, 382, 565 or 568 are offered to students who have had two to three years of occupational experience in courses taught in a community college. Students may enroll in the professional courses in teacher education in order to gain graduate status with the prerequisite that they present a partial California credential in an occupational area Early Childhood Education or have completed the Community College Admission Program.

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 students complete the professional courses in teacher education in order to gain graduate status with the prerequisite that they present a partial California credential in an occupational area Early Childhood Education or have completed the Community College Admission Program.

Requirements for Admission
Special Education Specialist
1. Formal application to the Department of Special Education.
2. Admission to the program for the single subjects credential (secondary) or multiple subjects credential (elementary).

A basic teaching credential.
3. Completion of the Graduate Records Examination Aptitude Test (GRE) with an acceptable score.
4. Interview with a faculty member in the Department of Special Education or Communicative Disorders.

Program
Persons interested in the Special Education Specialist Credential shall:
1. Concurrently or prior to completion of the Specialist credential, complete the single subjects credential (preliminary or clear) or the multiple subjects credential (preliminary or clear), or hold a basic teaching credential.
2. Complete one year of study in Special Education, including:
   a. The generic course work: Special Education 500, 501, 502.
   b. Advanced work in areas of specialization:
      (1) Special Education 510, 511, 512, 513 series.
      (2) Special Education 480 series.
      (3) Electives—6 to 12 units—on advice of adviser.

* Applies only to specialization in Learning Handicapped, Severely Handicapped, Physically Handicapped, and Gifted. Those interested in the Communication Handicapped specialization are referred to the Department of Communicative Disorders.
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:

- Education 650: Seminary in Instructional Methods & Materials, Community College Identification
- Education 666: Educational Psychology, Community College (2)
- Education 680: The Community College (3)
- Education 688: Workshop in Community College Education (1-6)
- Education 700: Directed Teaching: Community College (4) Cr/NC

NOTE: Directed teaching can be accomplished only in a community college by assignment and not in summer session.

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 curriculum and instruction, specializing in occupational education. For further information, instructors of Vocational Education are advised to consult with the Higher Education Coordinator. School 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 qualified for an official evaluation (under provisions of the Swan Bill). To qualify for the regulation 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 trade technical 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 his Associate of Arts degree, or (This should include, if possible, the 40 units of general education required for the bachelor's degree from SDSU).
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 courses in preparation for a bachelor's 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, 565 or 568)...
4. The individual must receive credit for the required number of upper division credits. This includes those given in item 2 above.
5. The individual must complete 124 units to be recommended. Furthermore, 30 units must be in the area in a community college.

Education

LOWER DIVISION COURSE

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 non-institutional, of education. Educational controversies, community educational agencies, equal rights, the international scene and futurity and progress.

375. Principles of Adult Education (2) I, II
Limit of nine units. 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 area.

381. Community College Occupational Curriculum (3) II, S
Prerequisite: Education 380.

382. Directed Teaching (2 or 4) Cr/NC
Prerequisite: Education 380, 381 or 565.

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.

397. 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 requirements for credentials.

435. Education for Minority Youth (3) I, II, S
Specific behavior patterns of minority youth and their effect upon the school learning process.

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)

General

511. Reading Diagnosis (3)
Two lectures and three hours of laboratory.
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, role 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.

596. Workshop 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.

Multicultural Education

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.

550. Philosophy of Cultural Pluralism in Education (3)
Study of culture from a multidisciplinary and holistic perspective provides a thorough understanding of the interrelationships between education and cultural patterns and the roots of cultural pluralism, emphasis on establishing a theoretical framework for appreciating cultural and linguistic diversity in children. Observation/fieldwork may be required.

553. Multicultural Oral Language Assessment Training (3)
Prerequisite: Education 550.
Orientation to study of selected culture's linguistic characteristics, comparison with language performance for distinguishing problems of linguistic interference on oral language with the child's own cultural context of his language. Observation/fieldwork may be required.

Counselor Education

UPPER DIVISION COURSE
(Interrupted 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.

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 COURSE IN COUNSELOR EDUCATION
(Also Acceptable for Advanced Degrees)

506. Guidance Conference (1-3) I, II
Prerequisite: Consent of conference director.
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 to a master's degree.

Educational Technology and Librarianship

LOWER DIVISION COURSE

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. (Formerly numbered University Studies 201)

UPPER DIVISION COURSE IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP
(Interrupted for Undergraduates)

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. (Formerly numbered Secondary Education 404)

449. 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.
Systematic observation and participation in library and audiovisual service under supervision of a school library and/or teaching materials center. A weekly seminar or conference is required.

498. 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
(Also Acceptable for Advanced Degrees)

532. Design and Production of Instructional Materials (3)
Six hours of activity.
Planning, preparing and using instructional materials with a wide variety of learners. Transparencies, lettering aids, color slides, audio cassettes, simulations, and portable video. Not open to students enrolled in Educational Technology and Librarianship Credential or MA program or with credit in Educational Technology and Librarianship 541.
540. Educational Technology (3) I, II, S
Six hours of activity.
Applications of educational technology to instruction and learning. Individualization through the use of media. Includes film, TV, simulation, programmed instruction, computer and multi-media.

541. Media Production Techniques (3)
Six hours of activity.
Prerequisite recommended: Educational Technology and Librarianship 404.
Planning and production of still media formats for instruction, lettering techniques, illustrations, overhead transparencies, high contrast materials, storyboard, scripting, and slide/tape presentations. Not open to students with credit in Educational Technology and Librarianship 532.

542. Advanced Production Techniques (3)
Six hours of activity.
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 Materials Design (3) I
Systematic approach to instructional design. Review of research and theory in material design and programmed instruction. Development and validation of programmed materials in various formats.

546. Basic Reference Materials (3) I, II
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
Prerequisite recommended: Educational Technology and Librarianship 445.
Selection criteria and development of written policy statements. Annotations, reviewing source material, and refinement of bibliographic information.

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.

549. Ethnic Materials for Children and Young People (3)
Six hours of activity.
Survey and evaluation of instructional material for children and young people of varied ethnic and cultural groups. Opportunity for selective and critical in-depth reading, listening, analysis, evaluation.

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 demonstrated. Not open to students with credit in Telecommunications and Film 520.

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.

Elementary Education
LOWER DIVISION COURSE

200. Career in Elementary Education (3) I, II
Six hours of activity. Field work 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 institutional environments. Observation and participation in schools and school related settings.

UPPER DIVISION COURSES IN ELEMENTARY EDUCATION
(Intended for Undergraduates)

301. Basic Student Teaching Seminar (1-2) I, II Cr/NC
Prerequisites: Admission to elementary education and concurrent registration in Elementary Education 401.
Discussion of immediate problems in student teaching with emphasis on children's growth and development.

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.
Discussion of immediate problems in student teaching with emphasis on the influence of children's growth and development.

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.

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
Prerequisites: 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 applying 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.

381. 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.

382. The Learning Process in the Elementary School (3)
Prerequisite: Elementary Education 372.
Psychological principles for effective classroom teaching; techniques of measurement and evaluation for the diagnosis and improvement of learning.

372. The Learner in the Elementary School (3)
Prerequisites: Psychology 101 and admission to elementary education.
Intellectual, emotional, social, and physical development during childhood and early adolescence, including basic principles of child guidance and counseling. Directed observation required.

396W. Advanced Writing Skills in Education (3)
Writing to improve communication in educational and related subjects, including reports, proposals, manuals, articles and newsletters.

401. Basic Student Teaching (1-12) I, II Cr/NC
Prerequisite: 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 (8) 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.
Procedures 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
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 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.

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 pre-school 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.

523. Classroom Diagnosis and Remediation of Underachievers in Mathematics (3)
Six hours of activity.
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.

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. Workshop 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 a bachelor's degree. Maximum credit six units applicable to a master's degree.

Secondary Education
Upper Division Courses (Intended for Undergraduates)

400. The Secondary School (3) I, II
To screen, advise, and initiate admission requirements. Includes field work assignment, demonstration of oral and written 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 (3) 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.

406. Student Teaching II (3 or 6 or 9) I, II Cr/NC/SP
Prerequisites: Secondary Education 400, 401, 402, 403 (except majors in art, music and physical education). 405, 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 nine units.

507. Student Teaching Seminar (1 or 3) I, II Cr/NC
Prerequisites: Secondary Education 400, 401, 402, 403, 405. To be taken concurrently with Secondary Education 406.
To plan and organize instruction in relation to all competencies acquired and to be implemented in an on-site, full-time student teaching assignment. May be repeated with new content. Maximum credit three units.

514. Methods and Materials of Instruction: Major (2) Irregular
One lecture and three hours of laboratory.
Professional courses in specific teaching fields usually taken concurrently with directed teaching. Each course emphasizes the application of best practices with reference to each subject area named:

Subject fields for Secondary Education 414 are as follows:
- Offered in the Fall Semester
  A. Methods in English
  B. Methods in Mathematics
  C. Methods in Speech Communication
  D. Methods in Social Science

Offered in the Spring Semester
- A. Methods in English
- B. Methods in Mathematics
- C. Methods in Social Science
- D. Methods in Social Science

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 Secondary Education

(Also Acceptable for Advanced Degrees)

515. Bilingual Teaching Strategies for Secondary Teachers (3)
Prerequisite: Teaching experience or enrollment in the Secondary Credential Program. Overview of legal and historical developments leading to bilingual teaching in the U.S. with attention to interactive and individualized techniques appropriate for bilingual students. Language assessment methods for grouping and evaluating bilingual students. Basic tests of statistical significance with special reference to the interpretation of educational data.
596. Workshop in Secondary Education (1-3 or 6) I, II SP*
   Designed to meet the needs of individuals or groups of teachers who wish to develop or continue the study of some problem with the consultation of the university staff and the San Diego County Curriculum staff. 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 applicable to a master's degree.

* Specified sections.

Special Education

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

500. Exceptional Individuals (3) I, II, S
   Behavioral commonalities among exceptional pupils, knowledge of principles, procedures, techniques and tests in identifying the learning and behavioral patterns of exceptional pupils, characteristics of exceptional pupils in terms of program and developmental needs.

501. Instructional Programs for Exceptional Individuals (2) I, II, S
   Assessment of instructional needs, planning an effective individualized program and developing procedures for evaluating pupil progress. Identify current programs and trends for planning effective individualized and group programs for exceptional individuals.

502. Interaction and Interpersonal Processes (2) I, II, S
   Prerequisite: Credit or concurrent registration in Special Education 500. Techniques and processes of communication technology as they pertain to the functioning of individuals and collectively, of parent, professionals, and community agencies in promoting personal, social, and vocational growth of individuals with exceptional needs.

510. Assessment and Evaluation of Exceptional Individuals (3) I, II
   Prerequisites: Special Education 501 and 502. Utilization of assessment procedures for the educational and rehabilitation program.

511. Curriculum and Instruction for Exceptional Individuals (3) I, II
   Prerequisites: Special Education 501 and 502. Utilization of data for determining general and specific objectives to meet the needs of exceptional children. Course work includes discussion, analysis, and reports of observations.

512. Personal Adjustment of the Exceptional Individual (3) I, II
   Prerequisites: Special Education 501 and 502. Adjustment of the exceptional individual to his environment including home, school and work. May be taken in each of the four areas of specialization.

513. Dynamics of Behavior Change and the Exceptional Individual (3) I, II
   Prerequisites: Special Education 501 and 502. Behavioral change studies analyzed with reference to their applications for the programs in behavioral change studies. May be taken in each of the four areas of specialization.

550. Workshop in Special Education (1-4) I, II
   Observation of curriculum and methods of teaching in an area of exceptionality; observation of exceptional children in public schools of exceptional individuals. May be repeated once in a demonstration class; development of materials of instruction. May be repeated once in a demonstration class; development of materials of instruction. See Class Schedule for specific content. Maximum credit six second area of exceptionality. See Class Schedule for specific content. Maximum credit six units applicable to any degree.
GRADUATE COURSES


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 (Acting)

Aerospace Engineering and Engineering Mechanics Department
- Emeritus: Shutt
- Chair: Conly
- Professors: Chou, D.C., Conly, Dharmarajan, Krishnamoorthy, McGhee, Narang, Pierucci, Wang
- Lecturer: Bowman

Civil Engineering Department
- Emeritus: Capp
- Chair: Noorany
- Professors: Chang, H., Chou, F.-H., Johnson, Noorany, Quiett, Stone, Stratton
- Assistant Professors: Banks, Fragaszy

Electrical and Computer Engineering Department
- Emeritus: Chan, Walling
- Chair: Lin
- Professors: Harris, Learned, Lin, Lodge, Skaar
- Associate Professors: Brown, Chang, C-T, Iosupovicz, Mann, Marino, Pono, Stuart

Mechanical Engineering Department
- Emeritus: Bauer, Billerman, Stone
- Chair: Bedore
- Professors: Bedore, Craig, Fitz, Hussain, Mansfield, Morgan, Murphy, Ohnysty, Rao
- Associate Professor: Pinto

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.
- Major in engineering (a general engineering program) with the B.S. degree.
- Minor in engineering.

Undergraduate Program

The objective of the engineering program at San Diego State University is to provide the intellectual and physical environment to encourage students to develop their capacities in a successful career in the profession of engineering. The graduate of this program is able to assume personal responsibility for the development and application of engineering knowledge with wisdom and judgment for the benefit of mankind. He is qualified to take the first step to professional registration, to enter industry as a first step to professional registration, to enter industry for employment and to continue his formal education at the graduate level, or to continue his formal education at the graduate level.

Because the engineer's work is predominantly intellectual and varied, and not of a routine nature, the program places emphasis on the mastery of a strong core area of specific interest in developing special knowledge in his area of specific interest.

Although the profession of engineering presents in practice a variety of specialities, the undergraduate student initially focuses his attention on a pattern of course work emphasizing engineering fundamentals. The student then is able to utilize this knowledge in developing special knowledge in his 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. Any student transferring from California community colleges will be given junior level standing if he has successfully completed lower division course work in mathematics, chemistry, physics and engineering appropriate to his engineering major, presuming, upon transfer, that he has completed at least 50 percent of the graduation unit requirements in his 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 132 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.
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. All regulations established by the university.
8. American institutions, to include competence in American history, institutions and ideals; U.S. Constitution; and California state and local government.
9. Forty units in general education courses in addition to the major, distributed as prescribed in the section of this catalog on Graduation Requirements.
10. Application for graduation.

Majors

Aerospace Engineering Major

With the B.S. Degree

Students with the option in Aerospace Engineering include in their program a sequence of fundamental courses. In addition, students have the opportunity to satisfy their particular areas of interest by selecting a pattern of study indicated in the sequence below as an aerospace vehicle design, performance, structural analysis, aerodynamics, and propulsion; some elective opportunity is also available in other disciplines at this university. 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.

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>Units Spring Semester</td>
</tr>
<tr>
<td>Fall Semester</td>
<td>Fall Semester</td>
</tr>
<tr>
<td>Freshman Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Sophomore Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Junior Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Junior Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Senior Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Senior Year</td>
<td>Spring Semester</td>
</tr>
</tbody>
</table>

*Approved as part of the student's master plan.
*Approved humanities or social sciences elective (may be used for General Education).
Civil Engineering Major
With the B.S. Degree

All students in Civil Engineering pursue a common program of study in basic engineering and civil 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 course selection process and documented by the filing of an approved master plan during the first semester of their junior year.

The requirements for the major in civil engineering are described as follows:

### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 200, General</td>
<td>5</td>
</tr>
<tr>
<td>Math. 150, Single Variable Calc.</td>
<td>5</td>
</tr>
<tr>
<td>ME 190 or 191, Drw. or Graph.</td>
<td>2</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys. 195, Principles</td>
<td>3</td>
</tr>
<tr>
<td>Math. 151, Calc. and Anal. Geom.</td>
<td>4</td>
</tr>
<tr>
<td>Eng. 140, Engr. Anal.</td>
<td>2</td>
</tr>
<tr>
<td>Eng. 120, Engr. Prob. Anal.</td>
<td>2</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys. 196, Principles</td>
<td>3</td>
</tr>
<tr>
<td>Math. 152, Multivariable Calc.</td>
<td>4</td>
</tr>
<tr>
<td>EM 200, Statics</td>
<td>3</td>
</tr>
<tr>
<td>EM 260, Engr. Materials</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 301, Intro to Solid Mech.</td>
<td>3</td>
</tr>
<tr>
<td>EM 302, Solid Mech. Lab.</td>
<td>1</td>
</tr>
<tr>
<td>Engr. 310, Meth. of Anal.</td>
<td>3</td>
</tr>
<tr>
<td>ME 352, Thermo &amp; Heat Trans.</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 444, Water Res. Engr. I</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>5</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Freshman Year

- Units
- Spring Semester
- Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 200, General</td>
<td>5</td>
</tr>
<tr>
<td>Math. 150, Single Variable Calc.</td>
<td>5</td>
</tr>
<tr>
<td>Engr. 120, Engr. Prob. Anal.</td>
<td>2</td>
</tr>
<tr>
<td>General Educ. (Life Sci.)</td>
<td>3</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Sophomore Year

- Units
- Spring Semester
- Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math. 152, Multivariable Calc.</td>
<td>4</td>
</tr>
<tr>
<td>EM 201, Mech. of Materials</td>
<td>4</td>
</tr>
<tr>
<td>EM 340, Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>AM 216, Engr. Mates</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Junior Year

- Units
- Spring Semester
- Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 380, 380L, Elec. Energy Conv.</td>
<td>4</td>
</tr>
<tr>
<td>Phys. 197, 197L, Principles</td>
<td>4</td>
</tr>
<tr>
<td>EE 330, 330L, Fund. Electron.</td>
<td>3</td>
</tr>
<tr>
<td>EE 371, Computer Organization</td>
<td>3</td>
</tr>
<tr>
<td>Engr. 310, Meth. of Analysis</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Senior Year

- Units
- Spring Semester
- Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 410, Adv. Network Anal.</td>
<td>3</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>1</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### 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 at least nine units of EE design (EE 373, 420, 450, 470, 475, 520, 521, 530, 534, 540, 554, 555, 557, 571, 580 and 581); at least three units of basic engineering (EE 301, EM 340, and ME 350/352); and at least one unit of EE laboratory. The students' choice of electives is subject to the approval of their faculty adviser and the department chair. Students must file an approved Master Plan during the first semester of their junior year.

### Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 200, General</td>
<td>5</td>
</tr>
<tr>
<td>Math. 151, Calc. and Anal. Geom.</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>9</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phys. 196, Principles</td>
<td>3</td>
</tr>
<tr>
<td>Math. 152, Multivariable Calc.</td>
<td>4</td>
</tr>
<tr>
<td>EM 201, Mech. of Materials</td>
<td>4</td>
</tr>
<tr>
<td>EM 340, Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>EE 270, Digital Systems</td>
<td>3</td>
</tr>
<tr>
<td>AM 221, Mech. of Rigid Bodies</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 380, 380L, Elec. Energy Conv.</td>
<td>4</td>
</tr>
<tr>
<td>Phys. 197, 197L, Principles</td>
<td>4</td>
</tr>
<tr>
<td>EE 340, Elect. &amp; Mag. Fields</td>
<td>3</td>
</tr>
<tr>
<td>EE 430, 430L, Electronics</td>
<td>4</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 410, Adv. Network Anal.</td>
<td>3</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>1</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Units</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

*Approved as part of the student's master plan.
**Approved humanities or social sciences elective (may be used for General Education).
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. The 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 fall semester of their junior year.

The requirements for the major in mechanical engineering are described as follows:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
</tr>
<tr>
<td>Chem. 200, General</td>
<td>5</td>
</tr>
<tr>
<td>Math. 150, Single Variable Calc.</td>
<td>5</td>
</tr>
<tr>
<td>Engr. 120, Engr. Prob. Anal.</td>
<td>2</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>Chem. 202, Chem. for Engrs.</td>
<td>3</td>
</tr>
<tr>
<td>Math. 151, Calc. and Anal. Geom.</td>
<td>4</td>
</tr>
<tr>
<td>ME 191, Graphics</td>
<td>2</td>
</tr>
<tr>
<td>Phys. 195, Principles.</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
</tr>
<tr>
<td>Math. 152, Multivariable Calc.</td>
<td>3</td>
</tr>
<tr>
<td>EM 200, Statics</td>
<td>3</td>
</tr>
<tr>
<td>EM 260, Engr. Materials</td>
<td>3</td>
</tr>
<tr>
<td>Phys. 196, Principles.</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>Phys. 197, Principles.</td>
<td>3</td>
</tr>
<tr>
<td>EE 210, Electric Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EM 220, Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>Engr. 140, Engr. Meas. Anal.</td>
<td>2</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
</tr>
<tr>
<td>Engr. 310, Methods of Anal.</td>
<td>3</td>
</tr>
<tr>
<td>EM 301, Intro. to Solid Mech.</td>
<td>3</td>
</tr>
<tr>
<td>ME 310, Engr. Design Intro.</td>
<td>3</td>
</tr>
<tr>
<td>ME 350, Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>ME 350L, Thermal Sci. Lab</td>
<td>1</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td>EM 340, Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>ME 314, Machine Design</td>
<td>3</td>
</tr>
<tr>
<td>ME 340, Materials and Processes</td>
<td>3</td>
</tr>
<tr>
<td>ME 450, Engr. Thermodynamics</td>
<td>2</td>
</tr>
<tr>
<td>ME 512, Simulation of Engr. Sys</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td></td>
</tr>
<tr>
<td>EE 303, Electronics, Instum. and Elect. Energy Conv</td>
<td>3</td>
</tr>
<tr>
<td>ME 470, Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 490A, Engr. Design</td>
<td>2</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
</tr>
<tr>
<td><strong>Upper Division Electives</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

* Chemistry 201, General, may be taken as equivalent to Chemistry 202.
* Approved as part of student's major plan by the department chair.
* Approved humanities or social sciences elective (may be used for General Education).

General Engineering
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.

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.

Engineering

LOWER DIVISION COURSES

100. Introduction to the Engineering Profession (2) I, II Cr/NC
Prerequisite: Not available for credit to engineering majors with 15 or more units in engineering courses.
An overall view of engineering education and professional practice. An introduction to basic skills useful in acquiring engineering problem-solving capabilities.

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)
Man's interaction with the land, water and air environment; environmental pollution; role of engineering in controlling man's environment.

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
(Intended for Undergraduates)

310. Methods of Analysis (3) I, II
Prerequisite: Mathematics 152.
Selected topics from ordinary differential equations, the Laplace transform, Fourier series, and linear algebra, with engineering applications.

350. Energy: Issues and Ideas (3)
Prerequisite: Completion of Basic Subjects and Foundations of Learning sections of General Education.
A complete picture of today's energy issues: Development of awareness of energy demands. Consideration of socioeconomic issues resulting from the interaction between technology and society. Not open to engineering majors.

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
Application of the mathematics of finance to engineering and managerial decision making.

440. Legal Principles for Engineers (3)
Prerequisite: Senior standing in engineering.
Basic principles of law and the American judicial system. General legal principles involved in contracts, professional responsibility and ethics, liability of engineers in design and construction work. Review of governmental regulations and legal problems affecting the engineer in his/her professional environment.

496. Advanced Engineering Topics (1-3) I, II
Prerequisite: Minimum grade point average of 2.5 in engineering or approval of the Academic and Ethical Standards Committee of the College of 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.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units for any combination of Engineering 496, 499 and 596.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510. Methods of Analysis (3) I, II
Prerequisite: Engineering 310.
Selected topics from vector calculus, partial differential equations, and complex analysis with engineering applications.

511. Digital Solutions of Engineering Problems (3) I, II
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.

596. Advanced Engineering Topics (1-3) I, II
Prerequisite: Minimum grade point average of 2.5 in engineering or approval of the instructor.
Modern developments in engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Engineering 496, 499 and 596.

Aerospace Engineering
LOWER DIVISION COURSE

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) I
Prerequisite: 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) II
Prerequisite: Aerospace Engineering 301.
Supersonic flow, two- and three-dimensional compressible flow, wings in compressible flow, two- and three-dimensional method of characteristics, transonic flow.

303. Experimental Aerodynamics (2) II
One lecture and three hours of laboratory.
Prerequisites: Credit or concurrent registration in Aerospace Engineering 301.

310A-310B. Aerospace Structural Analysis (3-3) I, II
Prerequisite: Engineering Mechanics 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) II
Prerequisites: Engineering Mechanics 220 or 221, and Engineering 310 or Mathematics 340A.
Aerodynamics and dynamics of ballistic missiles; guidance systems; orbits and space trajectories; effects of aerodynamics, mass, rotation and shape of the earth on ballistic and space trajectories. Computer programming and problem solutions 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. (Formerly numbered Aerospace Engineering 530).

440. Aircraft Stability and Control (3)
Prerequisites: Aerospace Engineering 303, and credit or concurrent registration in Engineering 510.
Static stability and control, general equations of unsteady motion, stability, derivatives, stability of uncontrolled motion, response of aircraft to actuation of controls.

460A-460B. Aerospace Engineering Applications (4-4) I, II
Two lectures and four hours of design activity.
Prerequisites for 460A: Aerospace Engineering 302, 303 and 310A.
Prerequisites for 460B: Aerospace Engineering 460A.
Student projects in aerospace design.

496. Advanced Aerospace Engineering Topics (1-3) I, II
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) I, II
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.

UPPER DIVISION COURSES IN AEROSPACE ENGINEERING
(Also Acceptable for Advanced Degrees)

510. Matrix Methods in Aerospace Structures (3)
Prerequisite: Aerospace Engineering 310B.
Static and dynamic analysis of aerospace structures utilizing matrix methods.

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.
Civil Engineering

LOWER DIVISION COURSE

218. Surveying for Civil Engineers (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Engineering 140.

UPPER DIVISION COURSES IN CIVIL ENGINEERING

(Also Acceptable for Advanced Degrees)

321. Structural Analysis I (4) I, II
Prerequisite: Engineering Mechanics 301.
Principles of mechanics applied to analysis of beams, frames, trusses, and threedimensional frameworks. Graphical methods, influence lines; deflections; introduction to statically indeterminate structures and moment distribution.

421. Reinforced Concrete Design (3) I, II
Prerequisite: Civil Engineering 321.
Introduction to plastic theory and limit design.

444. Water Resources Engineering I (3) I, II
Prerequisite: Engineering Mechanics 340.
Open channel and pressure conduit flow, pumps and turbines, hydroelectric power and water law.

445. Water Resources Engineering II (2) I, II
One lecture and three hours of laboratory.
Prerequisite: Civil Engineering 444.
Hydrographs and frequency analysis as applied to flood flow determination; multiple regression in hydrologic applications; design of hydraulic systems.

455. Civil Engineering Environmental Studies (2) II
Prerequisite: Chemistry 200 and credit or concurrent registration in Engineering Mechanics 340.
The application of civil engineering methodology to the solution of environmental problems.

518. Advanced Surveying and Photogrammetry (3) I
Two lectures and three hours of laboratory.
Prerequisite: Civil Engineering 218 with minimum grade of C.
Theory and application of precise control surveys; specialized survey operations.

521. Structural Analysis II (3) I
Prerequisite: Civil Engineering 321 with minimum grade of C.
Analysis of statically indeterminate structures by virtual work. Advanced treatment of slope deflection, moment distribution, and analysis of secondary stresses in trusses.

523. Timber Design (3) I, II
Prerequisite: Civil Engineering 321 with a minimum grade of C.

555. Water and Wastewater Engineering (2) I, II
Prerequisite: Civil Engineering 455 with minimum grade of C.
Examination of water and wastewater treatment processes. Water reclamation.

579. Construction Materials (3) II
Two lectures and three hours of laboratory.
Prerequisite: Engineering Mechanics 301.
Selection, design, and control of materials used in construction.

586. 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.

482. Highway Engineering (3) II
Two lectures and three hours of laboratory.
Prerequisite recommended: Civil Engineering 216 and 481.
Highway planning, economics, and administration; geometric design; traffic engineering; subgrade structure; bituminous and portland-cement concrete pavements.

492. Construction Project Planning (2) I, II
Prerequisite recommended: Engineering 430.
Analysis of complex engineering and industrial systems using critical path methods; planning and control parameters; network analysis; 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.

515. Untitled Course (3) I
Two lectures and three hours of laboratory.
Prerequisite: concurrent registration in Civil Engineering 462.
Laboratory procedures of soil testing for engineering problems.
Electrical Engineering

LOWER DIVISION COURSES

210. Electric Circuits (3) I, II
Prerequisites: Credit or concurrent registration in Physics 196, 196L; and Mathematics 151. Circuit analysis by reduction methods, source transformations, loop and nodal analysis; alternating current circuits, impedance, power and phasor diagrams.

270. Digital Systems (3) II
Prerequisites: Mathematics 152. Modelling, 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

(Intended for Undergraduates)

303. Electronics, Instrumentation, and Electrical Energy Conversion (3) I, II

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. A laboratory course to include selected experiments in electrical circuits, electronics, and electrical machinery.

340. Electric and Magnetic Fields (3) I, II
Prerequisites: Engineering 210 and Engineering Mechanics 200. Electrostatic and magnetostatic field theory using vector notation; Coulomb's Law, capacitance and inductance. Time-varying electric and magnetic fields; Maxwell's equations.

370. Logic Design and Switching Circuits (3) I, II
Prerequisite: Electrical Engineering 120. Combinational switching networks. Introduction to sequential circuits. Not open to students with credit in Electrical Engineering 270.

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. Not open to students with credit in Electrical Engineering 573.

Electrical Engineering Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Electrical Engineering 330. A laboratory course to include selected experiments in electrical circuits, electronics, and electrical machinery.

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

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
Prerequisite: Electrical Engineering 303 or 330. Instrumentation systems to monitor, control and record physiological functions.

410. Advanced Network Analysis (3) I, II
Prerequisites: Electrical Engineering 310 and Engineering 310 or Mathematics 340. Theoretical analysis of circuits containing resistance, inductance, and capacitance with various wave forms by means of the Laplace-transform method.

412. Interactive Computing (2) I, II
One lecture and three hours of laboratory. Prerequisite: Electrical Engineering 430. Use of electronic calculators and timesharing terminals for circuit analysis computation and plotting.

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, II
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 340. 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. A unified treatment of vacuum-tube and transistor voltage and power amplifiers utilizing graphical methods and equivalent circuits; feedback theory and tuned amplifiers.

450. Communication Networks (3) I
Prerequisites: Electrical Engineering 310, 340 and Engineering 310 or Mathematics 340. 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>470L</td>
<td>Digital Logic Laboratory (1)</td>
<td></td>
<td>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. Formerly numbered Electrical Engineering 472L.</td>
</tr>
<tr>
<td>475</td>
<td>Microprocessors (3)</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>521</td>
<td>Advanced Feedback Control Systems (3)</td>
<td></td>
<td>Prerequisite: Electrical Engineering 520. A continuation of Electrical Engineering 520 to include feedback compensation, advanced compensation techniques, time-varying techniques, state-variable techniques, and application to nonlinear and sampled-data control systems.</td>
</tr>
<tr>
<td>530</td>
<td>Transistor Circuit Analysis (3)</td>
<td></td>
<td>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 performance.</td>
</tr>
<tr>
<td>540</td>
<td>Microwave Communications (3)</td>
<td></td>
<td>Prerequisite: Electrical Engineering 430. 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.</td>
</tr>
<tr>
<td>540L</td>
<td>Microwave Measurements Laboratory (1)</td>
<td></td>
<td>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 oscillators, TWT and microwave transistor amplifiers. Microwave transmission and antennas.</td>
</tr>
<tr>
<td>553</td>
<td>Stochastic Signals (3)</td>
<td></td>
<td>Prerequisite: Engineering 310 or Mathematics 340A. Random signals, correlation functions, power spectral densities, the Gaussian process, narrow band processes. Applications to communication systems.</td>
</tr>
<tr>
<td>554</td>
<td>Communication Principles and Circuits (3), II</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>554L</td>
<td>Communication Circuits Laboratory (1)</td>
<td></td>
<td>Three hours of laboratory. Prerequisite: Electrical Engineering 430L. Regulated power supply systems; oscillator, modulator, detector, and switching circuits; superheterodyne receivers and television circuits.</td>
</tr>
<tr>
<td>555</td>
<td>Modulation Theory (3)</td>
<td></td>
<td>Prerequisite: Electrical Engineering 410. Theory and performance characteristics of modulation and demodulation; spectral characteristics and noise performance of carrier systems: amplitude, frequency, and phase, pulse coding, and compound modulation.</td>
</tr>
<tr>
<td>557</td>
<td>Synchronous Sequential Circuits (3)</td>
<td></td>
<td>Prerequisite: Electrical Engineering 373. Systematic design of high-speed synchronous sequential circuits, using standard logic elements and microprogrammable bit slice modules.</td>
</tr>
<tr>
<td>580</td>
<td>Modern Power Systems I (3)</td>
<td></td>
<td>Prerequisite: Electrical Engineering 470. Regulated power supply systems; oscillator, modulator, detector, and switching circuits; superheterodyne receivers and television circuits.</td>
</tr>
<tr>
<td>581</td>
<td>Modern Power Systems II (3)</td>
<td></td>
<td>Prerequisite: Electrical Engineering 580. Transient response of modern power systems; positive, negative and zero sequence impedance; subharmonic effects.</td>
</tr>
<tr>
<td>596</td>
<td>Advanced Electrical Engineering Topics (1-3), II</td>
<td></td>
<td>Prerequisite: Consent of instructor. Modern developments in electrical engineering. See Class Schedule for specific content.</td>
</tr>
<tr>
<td>200</td>
<td>Statics (3)</td>
<td></td>
<td>Prerequisite: Physics 195 and credit or concurrent registration in Mathematics 340. Forces and forces systems; equilibrium, structures, distributed forces, friction, virtual work, moments of inertia, vector algebra.</td>
</tr>
</tbody>
</table>
201. Mechanics of Particles (4) I, II
Prerequisite: Credit or concurrent registration in Mathematics 151.
Statics: Kinematics and Kinetics of Particles; virtual work, central force motion, work and energy, impulse and momentum, systems of particles; vector algebra and calculus, engineering applications.

220. Dynamics (3) I, II
Prerequisite: Engineering Mechanics 200.
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. Not open to students with credit in EM 201.

221. Mechanics of Rigid Bodies (3) I, II
Prerequisite: Engineering Mechanics 200.
Statics and dynamics of rigid bodies: equilibrium, reactions, distributed forces, centroids, center of gravity, beams, trusses, friction, virtual work, kinematics, plane motion, energy, momentum, vibrations, engineering applications.

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.

UPPER DIVISION COURSES IN ENGINEERING MECHANICS
(Intended for Undergraduates)

301. Introduction to Solid Mechanics (3) I, II
Prerequisites: Engineering Mechanics 221 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.

302. Solid Mechanics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering Mechanics 301.
Laboratory studies in solid mechanics. Experimental stress analysis. Experimental confirmation of theory.

340. Fluid Mechanics (3) I, II
Prerequisites: Engineering Mechanics 220 or 221, and credit or concurrent registration in Engineering 310.
Fluid statics. Laminar and turbulent flow of liquids and gases in pipes, nozzles, and channels. Dimensional analysis and modeling. Drag forces on moving or immersed objects.

341. Fluid Mechanics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering Mechanics 340.

498. Advanced Engineering Mechanics Topics (1-3) I, II
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the College of Engineering.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.

UPPER DIVISION COURSES IN ENGINEERING MECHANICS
(Also Acceptable for Advanced Degrees)

520. Intermediate Dynamics (3)
Prerequisites: Engineering Mechanics 220 or 221, Electrical Engineering 210, and Engineering 310.
Kinematics and kinetics of systems of particles and rigid bodies. Dynamic analysis procedures for studying mechanical, electrical, and electromechanical systems. Variational methods.

540. Intermediate Fluid Mechanics (3)
Prerequisites: Credit or concurrent registration in Engineering Mechanics 340, and Engineering 510 or Mathematics 340B.

541. Hydrodynamics (3)
Prerequisites: Engineering Mechanics 220 or 221, and Engineering 310 or Mathematics 340A or 530 or 533.
Kinematics, equations of continuity, energy, and momentum of perfect fluids. Introduction to conformal transformations. Three-dimensional and two-dimensional irrotational motion, with applications to physical problems. Vector notation will be used.

596. Advanced Engineering Mechanics Topics (1-3) I, II
Prerequisite: Consent of instructor.

Mechanical Engineering
LOWER DIVISION COURSES

190. Engineering Drawing (2) I, II
Six hours of laboratory.
Development of drawing skills and techniques for engineers. Elementary orthographic and pictorial drawing, sections, dimensioning, Instrument and free-hand drawing. Drawing as an aid to visualization and design.

191. Engineering Design: Graphics (2) I, II
Six hours of laboratory.
Prerequisite: Mechanical Engineering 190 or two semesters of high school drawing.
Graphic communication for engineers. Presentation and interpretation of engineering projects, plans, using both standard projection systems and freehand sketching. Design projects emphasizing conceptualization and graphical communication.

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING
(Intended for Undergraduates)

310. Engineering Design: Introduction (3) I, II
Two lectures and three hours of guided design activities.
Two lectures and three hours of guided design activities. Problem definition, information gathering, feasibility studies, analysis, final design and communication. Several design studies are completed.

314. Engineering Design: Mechanical Components (3) I, II
Prerequisites: Mechanical Engineering 310 and Engineering Mechanics 301.
Design of machine elements. Student design projects.

340. Metallic Materials and Processes (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Engineering Mechanics 260.
Prerequisites: Mechanical Engineering 310 and Engineering Mechanics 301.
Influence of processing on the properties of metals. Design criteria for selection of materials. Design of laboratory experiment.
### Upper Division Courses in Mechanical Engineering

#### 350. Thermodynamics (3) I, II
Prerequisite: Mathematics 152.
Development of the basic laws of thermodynamics and their application to engineering systems.

#### 350L. Thermal Science Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or 352.
Laboratory studies of the basic concepts of thermal science.

#### 352. Thermodynamics and Heat Transfer (3) I, II
Prerequisite: Mathematics 152.
First and second laws of thermodynamics; heat conduction, convection and radiation. Not acceptable for mechanical engineering majors.

#### 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.

#### 450. Engineering Thermodynamics (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Mechanical Engineering 350 and credit or concurrent registration in Engineering Mechanics 340.
Further development of the laws of classical thermodynamics: Applications to the analysis and design of energy conversion systems.

#### 470. Principles of Heat Transfer (3) I, II
Prerequisites: Engineering 310, and Mechanical Engineering 350 or 352.
Thermal transfer by conduction, convection, radiation, and combinations thereof.

#### 480. Internal Combustion Engines (3) I, 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)
Six hours of guided design activities.
Prerequisites for 490A: Mechanical Engineering 314, 350, 512.
Prerequisites for 490B: Mechanical Engineering 450, 490A.
Applying 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
Prerequisite: Mechanical Engineering 314.
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: Engineering 120 and 310. 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, brittle lacquers, strain gauges, grid methods, and analogs for determining static and dynamic stress distributions. Laboratory demonstrations.

#### 518. Engineering Design: Mechanisms (3)
Prerequisite: Mechanical Engineering 512.
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 Engineering Mechanics 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 Engineering Mechanics 301.
Experimental problems utilizing vibration excitation equipment, recording systems, transducers, sound analysis systems and analog 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.
Prerequisites: 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.

#### 560. Gas Dynamics (3)
Prerequisites: Engineering Mechanics 340 and Mechanical Engineering 250.
Thermodynamics of high velocity compressible fluid flow. Shock regions; adiabatic and diabatic flow. Applications to the propulsive duct and discharge nozzles.

#### 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-584B. 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.
596. 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.

GRADUATE COURSES
For graduate courses in Engineering, Aerospace Engineering, Civil Engineering, Electrical Engineering, Engineering Mechanics, and Mechanical Engineering, refer to the Graduate Bulletin.

English
In the College of Arts and Letters

Faculty
Emeritus: Adams, J., Burnett, Chater, Gulick, Haskell, Kennedy, Marchand, Phillips, Shouse, Theobald
Chair: McLeod
Associate Professors: Borkat, Brown, Farber, Foster, Gervais, Hinkle, Kehler, H., Kohler, McCaffery, Nichols, Redding, M., Redding, R., Rogers, Rush, Sheres, Shojai, Taylor, Tunberg, Wall
Assistant Professors: Aninger, Boe, Butler, Forche, Karnath, Kehler, D., O'Reilly, Sullivan, Wheeler

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.
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. To satisfy the requirement in foreign language, students may not use courses in conversation.
A minor is not required with this major.


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 of catalog on "Graduation Requirements."

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; (c) at least three units in British Literature before 1800, three units in British Literature after 1800, and three units in American Literature; and (d) one course in composition, creative writing, or criticism—select one of the following: English 500, 508, 580, 581, 582, and approved sections of 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 requirements under both (b) and (d). 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, 525, 526, 527, and 528.

Modern Literature: English 524, 525, 544A-544B, 545, 546, and Comparative Literature 514, 526, and 545.


Creative Writing: English 570, 571A-571B, 572, 579, 580, 581, 582, and 585.

NOTE: In addition to the courses listed above, appropriate sections of English 496, 497, 498, 527, 528, 540B, 542A, Comparative Literature 530, and American Studies 580 may be used to satisfy the requirements for the majors 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 for six units of lower division work. These courses must be in the same field as those which they replace, and must be approved by the departmental adviser.

Students of junior or senior standing may substitute for any deficiencies in lower division requirements for the major if approved by the departmental adviser.

English 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 requirements for the Secondary Waiver Credential in English are as follows:

I. A major in English, comparative literature, or linguistics for the A.B. degree is approved sections of special topics courses. 530, 531, 533, 534, 536, 537, 538A, 538B, 540A, 541A, 541B, and Comparative Literature 510.

II. Satisfactory completion of 39-41 units selected from courses in the following categories:

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

2. Shakespeare or The Bible as Literature: 3 units
   a. Particularly appropriate: English 533 (Shakespeare)
   b. Appropriate: Comparative Literature or English 505 (The Bible as Literature)

3. Modern Literature: 3 units
   a. Particularly appropriate: English 524, 525, 544A-544B, Comparative Literature 514
   b. Appropriate: English 546, Comparative Literature 526, 540
   c. The following courses are also applicable when the topic deals with the Twentieth Century: English 496, 526, 528, 549, Comparative Literature 490, 550, 557

4. A Course in Genre, Myth, or Literature and Other Disciplines: 3 units
   a. Particularly appropriate: English 527, 570, 571A, 579, Comparative Literature 495, 561, 570
   b. Appropriate: English 572, Comparative Literature 560, 562, 563, 571
   c. The following courses are also applicable when the topic deals with a genre or literature and other disciplines: English 496, 549, Comparative Literature 490.

B. Courses in Writing (total 12 units)

a. Particularly appropriate: English 280, 500, 580, 581

b. Appropriate: English 100, 200, 281, 508, 582

C. Courses in Linguistics (total 9 units)

a. Particularly appropriate: Linguistics 510 (History of English), 520 (Modern English), 524 (American Dialectology)

b. Appropriate: Linguistics 101 (Language Study), 550 (Theory and Practice of English as a Second Language), 551 (Sociolinguistics), 552 (Psycholinguistics), Comparative Literature 581 (Literary Uses of Languages)

D. Speech (total 3 units)

a. Particularly appropriate: Speech Communication 103 (Oral Communication), 105 (Intro. to Speech Com.), 111A (Fund. of Interp.)

b. Appropriate: Speech Communication 391 (Group Com.)

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 532

2. A course in expository writing: English 304W, 305W or 500

3. A course in folio or popular literature: English 301, 491, 492, 505, Comparative Literature 495, 580, 595

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 532

2. A course in Shakespeare study or criticism: English 505, 507, 508, 527, 570, 571A, 571B, 572, 579, Comparative Literature 560, 561, 562, 563

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, 581, 582, or approved sections of special topics courses.

Business disciplines, one course from each group:

1. A course in expository writing: English 304W, 305W or 500

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, 529, 523, 524, 525, approved sections of 528 or 529

Humanities disciplines, one course from each group:
1. A course in Shakespeare: English 302 or 533.
4. A second course in literary history selected from the Business discipline, above, or a course in literature and other disciplines, English 493, Comparative Literature 495, 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, 505, 533.
3. A course in literature and psychology or popular literature or science fiction: English 491, 492, 493, 494, approved sections of other special topics courses.

For students whose needs are not accommodated by any of the above patterns:
Students whose majors are not represented by the patterns above, who students who wish to design a minor more directly tailored to their specific major, or students who otherwise feel they have special needs are encouraged to consult with their advisers in both major and minor departments to design individualized minors in English. All such minors must have the written approval of both departmental advisers.

The English minor is not available to students majoring in comparative literature. 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

General

100. College Composition (3)
Prerequisite: Must have satisfied Writing Competency requirement. (See Graduation Requirements, I: Competency Requirements, section of this catalog.) Principles of effective composition, rhetorical techniques for achieving clarity, interest, and effective organization and development of ideas, based on the reading and analysis of selected texts. Not open to students with credit in Afro-American Studies 120A or higher numbered composition or creative writing course or Mexican-American Studies 111B.

200. Intermediate Composition (3 II
Prerequisite: Afro-American Studies 120A or English 100 or Mexican-American Studies 111B. Further practice in expository writing, with emphasis on mastery of style and organization, and problems of research.

210. Literary Theory and Criticism (3 II
Introduction to the various theories of literature and approaches to literary creation and criticism.

220. Introduction to Literature (3 II
An inquiry into the basic nature of literature: what prompts humankind to the creation of imaginative literature, what purposes does literature serve in the cultural life of humanity, what are its social, philosophical, spiritual, and aesthetic values. Some consideration may be given to major critical theories, but the focus will be on practical criticism for the periods of literature.

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.

AMERICAN LITERATURE

250A-250B American Literature (3-3)
American literature from the colonial period to the present. Semester I: from the beginning to the Civil War. Semester II: Civil War to the present. Recommended for English majors.

252. Topics in American Literature (3 I, II
An introductory course, using a broad topic in American literature to interrelate works intensively. Techniques of literary expression and the values of literature will be identified through such connective topics as American Self-Reliance, Man/Woman and Nature, American Innocence and Experience. See Class Schedule for specific content. Maximum credit six units. (Formerly numbered English 250)

BRITISH LITERATURE

260A-260B. English Literature (3-3) I, II
English literature from the Anglo-Saxon period to the present, with emphasis on the major works in the literary tradition. Semester I: Begins with the classical period. Semester II: Ends with the neoclassical period. Semester II begins with the Romantic writers.

261. Topics in English Literature (3 I, II
An introductory course, using a broad topic in English literature to interrelate works intensively. Techniques of literary expression and the values of literature will be identified through such connective topics as Comedy and Tragedy from Chaucer to Pinter, Hero and Quest in English Literature, Nature and Supernatural. See Class Schedule for specific content. Maximum credit six units.

COMPARATIVE LITERATURE

(See this section of catalog under Comparative Literature)

CREATIVE WRITING

280. Introduction to Creative Writing (3)
Prerequisite: English 100 or Afro-American Studies 120A or Mexican-American Studies 111B. 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 I, II
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.

UPPER DIVISION COURSES

(Intended for Undergraduates)

GENERAL

300. Honors Course (1-3) I, II
Refer to Honors Program.

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.
English / 275

274 / English
304W. TechnicalWriting
(3)
Prerequisite: Satisfactory completion of the Writing Competency requirement the
General Education writing requirement or advanced placement
Expository and report writing on technical subjects dealt with in such professionsas
industry, science, and government. Primarily for students in engineering, nursing the
sciences, and such preprofessional areas as law and medicine. Long and short terms
including reports, proposals, manuals. and journal articles.
305W. Writing Proficiency
(3)
Prerequisite: Satisfactory completion of the Writing Competency requirement, the
General Education writing requirement or advanced placement.
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Advanced expository writing intended lor students not majoring in English or corroereee
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 teston
these topics. This test is required lor course credit.
491. Contemporary Topics in Literature
(3)
Exploration of writers, works and topics in fiction poetry, drama. and lilm, emphasizing the
relationship between literature and current concerns. Topics include The City in Fiction and
Film, Literature and Identity, Literature 01 Death, Literature of Contemporary Myth.and
Folklore, Women in Literature. Primarily for the general student not specializing in Englishor
comparative literature, May count only as an elective course toward the English major.M~Y
be repeated with new content. Maximum credit six units. See Class Schedule for speCIfic
content.
492, Studies In Popular Literature
(3)
Study of individual works or types 01 literature outside of traditional academic areas01
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 inciude Detective Fiction, Science Fiction and Fantasy, Rogue
~Iterature, Primarily for the general student not specializing in English or comparatiVe
Ilt.erature,May count only as an elective course toward the English major, May be repeated
With new content. Maximum credit six units See Class Schedule lor specific contel1t.
493. Uterature and Film (3)
Relationships between film and genres 01 literature focusing on a critical comparisonof
t~e techniQu.esof rhetoric, fiction, and drama and thos~ 01film. Topics include Literatureand
Film, .No~el mto Flln:, Drama and Film, Reading Film. Primarily for the general student not
speclallZlrlg In EnglIS~ or comparative literature, May count only as an elective .course
toward the English major. May be repeated with new content. Maximum credit six Units.see
Class Schedule lor soecmc content.
494. Modern American Fiction
(3)
~epresentative works by twentieth century American authors such as HemingwaYi
Stelrlbeck, FaUlkner,Fltz~erald, Bellow. vonneect Heller, others. Primarily for the genera
stu?ent not speclallzlrI.g IrI English or Comparative literature, May count toward the English
major only as an elective.
496. Sete,ctedTopics In English

(1-4) I, II

scecrareeo study of a selected topic in literature, May be repeated with new content. s~
Class Schedule for epecmc content. Limit 01nine units 01any combination of 296, 496.S9
Courses applicable to a bachelor'S degree, Maximum credit six units.
497. Individual Reading (1) I, II
Iwosel~lcted
unl s. works by a major author. May be repeated with new content . Maximum credil
499, Special StUdy (1-311 II
Prerequisites' Consent I" t
IndiVidual stu'dy M, ' a Ins ructor and,approval 01 department chair,
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Xlmum credit SIXunits.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)
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recommen ded:. Six lower division units In courses in

Ali suo-jevet courses-Strongly
literatureand/or creative writing,

500. Advanced Composition
(3) I, II
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, ludin the contributions 01 semantics,
The theory and practice 01 expository Wfltlrlg, Inc
g
rhetoric,and logic
501. Literature fOf Children
(3)
.
n Study 01texts and illustrations.
Critical analysis of literature intended for chuore .
505 The Bible as Literature
(3) I, II
(Samecourse as Comparative Literature 505.)
Proseand poetry of the King James version
507, The History of Literary Criticism"
~3) Ifrom Greek times to the nineteenth century.
Principles and practices 01 literary cntctsm
508, The Writing of Criticism
(~).
rests on the work of important critics and on
Theoryand practice of literaryc.lltlclsn: ..Emp
developmentof student's own Critical wntlrlg,

American Literature
521. Early American Literature
(3).
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the period 01America's lounding until
Representative works by American wrlt~~sbro~enjamin Franklin, cotton Mather, Anne
approximately 1800: likely to Include wor
y
(3)
522. American Literature, 1800 untlll.~6? from 1800 until 1860: likely to Include works
Representative works by American,wrI er
Whitman others.
by Hawthorne, Melville, Poe, Emerson, noreau,
'
523. American literature, 1860 until 1,92? fro~)1860 until 1920: likely to include works
Representative works by American writer "
Carl Sandburg Kate Chopin others.
byTwain,Henry James, Stephen Crane, Emily Dickinson,
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524. American Literature, 1920: until 1
Iro~)1920 until 1950; likelYsto.i~u~eo~~rr~s
Representative works by Amencan wnte E pound Eugene O'Neill, tem c
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byHemingway, Fauikner, Fitzgerald, T.S Eliot, zra
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525, American literature, 1950 ~ntll pres::~t. li~~~yto include wo~kSby Jo;elPh Hp~~~~'
American writers from 1950 until the pre Ku;! Vonnegul, Allen Ginsberg, y VI a
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Saul Bellow, Norman Mailer, Edward Albee,
others
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th South' Black Writers In
26. Topics In America." Litera u.
tude The Literature of e
,'n Literature; The
TOPICSin American literature .to In~t rature: The History of A~erlc~lass Schedule lor
America' The Frontier and xmencan I e ted with new content. ee
Outcast 'in American Literature, May be ~epea
specific content Maximum credit six Units.
(3)
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52, G
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lean literature
e's development In m
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, overview of the gem
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Poetry) or focus on a
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literature (The American Novel. The
Novel The Contemporary~m Schedule for specitic
flarrowerperiod (The Modern Amerrcan ed 'lh new content. See ass
Autobiographies, others). May be repeat WI
COntent.Maximum credit six Units.
(3)
. t ositions warrant it
528, Individual American Authorhs OJ if useful comparisonsl:nd J~~e~~beck,Nabokov; 0;
Works 01a major American aut or .' Twain, James, Fau ner,
lhe Worksof two or three authors: Melvl~e, negut and Barth. others.
Poundand Eliot, Emerson and Thoreau, on

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British Literature

530. Chaucer (3) I, II
Chaucer's works, with emphasis on The Canterbury Tales and Troilus and Criseyde.

531. Renaissance Literature (3) I, II
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) II
Prerequisite: English 533. Advanced study of Shakespeare's achievement as a poet and playwright.

536. Seventeenth Century Literature (3) II
English poetry and prose from 1603 to 1660.

537. Milton (3) II
Milton's writings, with emphasis on Paradise Lost.

538A-538B. Restoration and Eighteenth Century Literature (3-3) I, II
English literature in the neoclassical era. Semester I: Dryden, Swift, Pope, and their contemporaries. Semester II: Writers of the middle and late eighteenth century.

540A-540B. English Fiction (3-3) I, II

541A. English Drama (3-3) I, II
English dramatic literature from its beginnings to the nineteenth century. Semester I: The period from the beginning to 1642. Semester II: The period following reopening of the theatres in 1660.

541A-541B. Nineteenth Century British Poetry (3-3) I, II

543. Nineteenth Century British Prose (3) I, II
Nonfictional prose of the Romantic and Victorian periods.

544A-544B. Modern British Fiction (3-3) I, II
Semester I: English fiction from 1890 to World War II. Semester II: English fiction from 1939 to the present. (Formerly numbered English 544.)

545. Modern British Poetry (3) I, II
British poetry since 1900.

546. Modern British Drama (3) I, II
British drama since 1890.

549. Topics in English Literature (3) I, II

560A-560B. A 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 neo-classical 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.

Comparative Literature

(See this section of catalog under Comparative Literature)

Creative Writing

570. 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.

571A-571B. Techniques of Fiction (3-3) I, II
A study of the critical and theoretical literature of fiction, from the creative writer's viewpoint, together with reading and discussion of appropriate examples. Semester I: Short Fiction. Semester II: The Novel.

572. Techniques of Drama (3) I
A study of the critical and theoretical literature of drama, from the creative writer's viewpoint, together with reading and discussion of appropriate examples.

579. Topics in Techniques of Writing (3) I, II
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.

581. The Writing of Fiction (3) I, II
Prerequisite: English 280. A writing workshop in fiction. May be repeated with new content. Maximum credit six units.

582. The Writing of Nonfiction (3) I
Prerequisite: English 280. A writing workshop in nonfictional prose. May be repeated with new content. Maximum credit six units.

589. Senior Workshop in Creative Writing (3) I, II
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.

GRADUATE COURSES

Refer to the Graduate Bulletin.

European Studies

In the College of Arts and Letters

European Studies courses and European Studies major with the A.B. in liberal arts and sciences 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.
Family Studies and Consumer Sciences

In the College of Professional Studies and Fine Arts
A member of the American Home Economics Association

Faculty
Emeritus: Boggs, Cannon, Comin, Martin, M. Milne, Sommerville, Stout, Thomas, Warner
Director: Cooke
Professors: Cooke, Dorris, Fulcomer, Gunning
Associate Professors: Hawkins, Hewes, Josephson, Martin, K.J. Price, Ross
Assistant Professors: Dickerson, Koblimsky, Mikita, Schupp, Spindler
Lecturers: Avery, Gabriel, Harrington, Phillips, Rainer, Sassano, Seagrue, Warner, White

Offered by the School of Family Studies and Consumer Sciences

Master of Science degree in home economics.
Major in home economics with the A.B. degree in applied arts and sciences.
Major in child development with the B.S. degree in applied arts and sciences.
Minor in child development.
Teaching major in home economics for the single subject teaching credential.
Minor in home economics.

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.

Two plans are provided for the major in home economics: Plan A for students interested in the area of Foods and Nutrition; and Plan B for students interested in the area of Home Economics.

Plan A: Emphasis in Foods and Nutrition

This program 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 or dietetic service. This program includes the A.B. degree in applied arts and sciences. The prerequisites for the major in home economics include Biology 100, 201 (or Mathematrics 119); Microbiology 210 (or 310); Physics 107; Psychology 101; Sociology 101 (or 151-155 units). A minimum of 40 upper division units is required.

Plan B: Emphasis in Home Economics

This emphasis is for students interested in a comprehensive program in home economics. A lower division core provides experiences with child development and family merchandising. At the upper division level, students may choose to continue with this comprehensive program or select one of the two core professional sequences - Clothing, Textiles and Merchandising; Consumer Services and Housing. Students choosing the comprehensive program follow the major for the single subject teaching credential in home economics.

Preparation for the major. Family Studies and Consumer Sciences: 110 or competency examination, 119, 135, 151, 204, 240, 245, 270; Art 101; Biology 100, 100L; Chemistry 100, 130; Economics 100 or 102 or 304; Psychology 101; Sociology 101; Business Administration 231 required for students interested in housing; Business Administration 210A and Family Studies and Consumer Sciences 217 and 260 required for students interested in fashion merchandising. (44-55 units.)

Major. A minimum of 36-39 upper division units selected from one of the core professional sequences.

Core Professional Sequences.

Clothing, Textiles and Merchandising: Family Studies and Consumer Sciences 315, 422, 519, 520, 522; Business Administration 350, 370, 372, 373; twelve units selected from Family Studies and Consumer Sciences 318, 323, 361, 440, 462, 481 or 483, 518, 521.

Consumer Services and Housing: Family Studies and Consumer Sciences 343, 422, 440, 451, 541, 546. Twenty units selected from Family Studies and Consumer Sciences 345, 355, 446, 482, 536, 545, 553; Art 542; Business Administration 370, 457; Geography 354; Public Administration 329, Sociology 424. (The prerequisites for Art 552 and Geography 354 have been waived.)

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.

Preparation for the major. Anthropology 102; Biology 100; Family Studies and Consumer Sciences 115 or competency examination, 151 or 240, 270, 271; Health Science 101; Psychology 101, 260; Sociology 201 or Psychology 270. (33 units.)

Major. A minimum of 37 upper division units to include Biology 350; Family Studies and Consumer Sciences 335, 375, 375L (one unit), and 422; 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 concentrate. A master plan for each student must be filed with evaluations.

Home Economics Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in the section of the catalog under "Graduation Requirements." A minor 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 119, 135, 151, 204, 205A-205B, 240, 245, 270; Art 101; Chemistry 100, 130; Economics 100 or 102; Psychology 101, Sociology 101. (46 units.)

Major. A minimum of 36 upper division units in Family Studies and Consumer Sciences to include 315 or 519 and 345, 355, 446, 482, 536, 545, 553; Art 542; Business Administration 370, 457; Geography 354; Sociology 424. (The prerequisites for Art 552 and Geography 354 have been waived.)

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 270*, 271 and 245, 270; Art 101; Chemistry 100, 130; Economics 100 or 102; Psychology 101, Sociology 101. (46 units.)

A. A minimum of 36 upper division units in Family Studies and Consumer Sciences to include 315 or 519, plus three units in clothing, textiles, and consumer services, 335 or 536, 345, 375, 375L (prerequisite 271 waived), 422, 440, 451, 483, 545 or 546, 58.

* 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, 355, 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, 538, 570 (and/or 596 if appropriate).

**Clothing, Textiles, and Fashion Merchandising**: Family Studies and Consumer Sciences 119, 217, 260, 361, 462, 520 (and/or 596 if appropriate).

**Housing**: Family Studies and Consumer Sciences 119, 245, 243, 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

105. **Nutrition for Athletes (3)**
Review of basic diet which will provide nutritional adequacy. Analysis of current theories and practices related to nutrition and athletic performance.

107. **Nutrition Today (3) I, II**
Obtaining nutritional needs from a varied food supply.

115. **Clothing Construction Techniques (3)**
One lecture and six hours of laboratory. Basic construction techniques; commercial patterns and their adaptation; garment fitting.

119. **Textiles (3) I, II**
One lecture and six hours of laboratory.
Prerequisite: Chemistry 130.
Fibers, yarn, fabric construction, and finishes as related to selection, use, and care.

135. **Marriage and Family (3) I, II**
Love, maturity, dating, compatibility, conflict as they relate to preparation for successful marriage and family living.

151. **Home Management Decision Making (3) I, II**
Examination of value systems and application of principles of decision making to individual, professional and family management in changing situations.

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)**
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)**
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/cultural foods are emphasized.
308. Quantity Food Production (3)
Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 205B.
Application and evaluation of techniques and equipment utilized in food service operations for quality and financial control, production, distribution, and service of food.
(Formerly numbered Family Studies and Consumer Sciences 403.)

315. Advanced Clothing (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 315 and 316.
Principles of tailoring; planning and construction of coats and suits.

316. Tailoring (3) II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Principles of tailoring; planning and construction of coats and suits.

323. Fabric Structure and Design Processes (3)
One lecture and six hours of laboratory.
Prerequisite: Art 101.
A study of stitchery, knitting, crocheting, weaving, macramé, and textile decoration.

335. Family Interaction (3) I, II
Prerequisites: Family Studies and Consumer Sciences 135 and 240.
Principles of human interaction: family relationship, marriage adjustment and family interaction throughout the life cycle.

345. Housing and Interiors: Historical Influences (3) I
Prerequisite recommended: History 105.
Principles: 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. Principles of Home Management (3) I, II
Efficient management of the home, family cooperation, establishment of goals, and productive use of money, time, and energy. Not open to home economics majors, or to students with credit in Family Studies and Consumer Sciences 451.

355. Time and Human Resource Management (3) II
Analysis of time and human resources with application to the environment.

361. Fashion Merchandise Practicum (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 217, 260 and consent of program adviser.
Supervised experience in apparel merchandising procedures through a cooperative program with a retail establishment.

362. Fashion Merchandising Principles (3)
Prerequisite: Family Studies and Consumer Sciences 260.
Principles and basic calculations necessary for profitable merchandising.

375. 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. (Formerly numbered Family Studies and Consumer Sciences 575.)

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 development laboratory and other preschool situations. May be repeated with consent of instructor. Maximum credit seven units. (Formerly numbered Family Studies and Consumer Sciences 575L.)

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
One lecture and six 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.
Prerequisites: Family Studies and Consumer Sciences 302.
Dietary management of pathological and debilitating diseases.

422. Contemporary Issues in Food 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.

436. 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 the Family (3)
Prerequisite: Family Studies and Consumer Sciences 335.
Principles: All required courses for the Child Development Major and Family Studies and Consumer Sciences 436.
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. Family Financial Problems and Practices (3) I, II
Prerequisite: Family Studies and Consumer Sciences 240.
Principles: All required courses for the Child Development Major and Family Studies and Consumer Sciences 436.
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.

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. Home Management Theory and Analysis (4) I
Two lectures and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 151 and 240.
Concepts of home management related to ethnic and socioeconomic needs of families. Practical application in home management residence and field experience.
462. Fashion Merchandising Seminar (3) II
Prerequisite: Family Studies and Consumer Sciences 260.
Intensive and specific consideration of practices and problems related to the apparel industry.

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)
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 or Elementary Education 372.
An investigation of philosophy, issues, and current trends in working with parents.

480. Demonstration Techniques (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Six units in family studies and consumer sciences. Recommended: Educational Technology and Librarianship 404 and Speech Communication 104.
Organizing materials and developing techniques used for demonstrations and presentations in business, promotional and educational settings. Preparation of scripts, photographic styling, television productions, and professional demonstrations.

481. Materials and Techniques for Teaching Home Economics (3)
Prerequisite: Fifteen upper division units in Family Studies and Consumer Sciences.
Use of instructional materials in home economics. Application and development of individualized instructional products, demonstration materials and other instructional aids. Selection and evaluation of instructional materials for home economics.

482. Educational Practices and Instructional Resources (3)
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) II
Three lectures and two hours of activity.
Prerequisite: Twelve upper division units in family studies and consumer sciences.
Development and design, instructional procedures and evaluation strategies for consumer-home economics programs.

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)

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.

518. Clothing Design: Flat Pattern (3)
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Problems involving principles and techniques of flat pattern construction. Development of basic stoper for purpose of interpreting new designs. Investigation of sources of inspiration and their relationship to significant trends in design.

519. Textile Analysis and Testing (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 119 and Chemistry 130.
Analysis based on physical and chemical tests for quality differences due to variation in fibers, content, structure, and finishes and their suitability for specified uses.

520. Clothing and Human Behavior (3)
Socioeconomic influences on consumer clothing behavior patterns.

521. Clothing Design: Draping (3)
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Experience in creative designing through fabric manipulation. Designer problems related to mass-production techniques.

522. Clothing Design: Historical Influences (3) II
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Chronological analysis of men's and women's fashions providing inspiration for original creations in clothing design.

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 and psychological documents which reveal changing expectations and ways of coping with stress.

541. Consumer Interest (3)
Prerequisite: Family Studies and Consumer Sciences 240 or 440.
Analysis of consumer legislation, consumer information and consumer protection programs.

545. Family Housing (3)
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)
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) II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 271, 451, 536.
Field work with various community agencies and selected families.
Family Studies and Consumer Sciences

570. Human Development: Infancy (3)
Two lectures and three hours laboratory.
Prerequisites: Family Studies and Consumer Sciences 270 or Psychology 330;
Psychology 280, Biology 350 recommended.
Physiological, psychological, social and cultural development of the human organism
from birth through age two with directed observation and laboratory demonstration with
infants.

576. Supervised Experiences with Young Children (3) I, II
One lecture and six 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.

577. Administration and Supervision in Nursery Schools (3) I, II
Prerequisite: Family Studies and Consumer Sciences 375 and 375L, 477, or teaching
experience in a nursery school.
Problems of organization in conducting schools for young children; interrelationships of
staff; personnel practices; communication with teaching staff, parents, and community;
records and reports.

579. Advanced Child Study (3)
Prerequisite: Nine units in child development courses.
Physical, social, and psychological factors which determine the direction of child
behavior. Readings and interpretations of scientific literature which contribute to an
understanding of theories of human development.

584. Occupational Home Economics Programs (3) I
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences
Vocational education legislation; development and administration of occupational and
career programs in all areas of home economics.

596. Advanced Studies in Family Studies and Consumer Sciences (1-6)
Prerequisite: Nine upper division units in family studies and consumer sciences.
Advanced study of selected topics. See Class Schedule for specific content. Maximum
credit nine units. No more than six units may be applied toward either the bachelor's or
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.

French
In the College of Arts and Letters

Faculty
Emeritus: Brown, Messier
Chair: Jackson
Professors: Jackson, Max, Nelson, Pittard
Associate Professors: Blaken, Glasgow, Woodle
Assistant Professors: Cox, Gilchrist, Palmer

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 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.

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 101, 102, 201, 202, 211, and 212. (20 units)
Recommended: History 105, 106.

Foreign Language Requirement. The foreign language requirement is automatically
fulfilled through course work for preparation for the major.

Major. 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 the degree.

Preparation for the major. French 101, 102, 201, 202, 211, 212. (20 units)

Major. A minimum of 24 upper division units in French to include French 301, 302,
305A-305B, 401, 421, 422, 431.

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.
The first two years of high school French may be counted as the equivalent of French 101; three years the equivalent of French 102; and four years the equivalent of French 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

**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 for French 101, 102, 201, 202, 301, 302 taken out of sequence.

### 101. Elementary (4) I, II
Four lectures and one hour of laboratory. Pronunciation, oral practice, readings on French culture and civilization, essentials of grammar. Not open to students who have completed three years of high school French.

### 102. Elementary (4) I, II
Four lectures and one hour of laboratory. Prerequisite: French 101 or two years of high school French. Continuation of French 101. Not open to students who have completed four years of high school French.

### 201. Intermediate (4) I, II
Prerequisite: French 102 or three years of high school French. Majors and minors should enroll concurrently in French 211. A practical application of the fundamental principles of grammar. Reading in French of cultural material, short stories, novels or plays; oral and written practice.

### 202. Intermediate (4) I, II
Prerequisite: French 201 or four years of high school French. Majors and minors should enroll concurrently in French 212. Continuation of French 201; outside reading with oral and written reports.

### 211. Conversation (2) I, II
Prerequisite: French 102 or three years of high school French. Majors and minors should enroll concurrently in French 212. Reading and conversation. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

### 212. Conversation (2) I, II
Prerequisites: French 201 and 211, or four years of high school French. Majors and minors should enroll concurrently in French 202. Reading and conversation — advanced. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

**UPPER DIVISION COURSES (Intended for Undergraduates)**

All upper division courses in French are taught in French unless otherwise stated. The first two years of high school French may be counted as the equivalent of French 101; three years the equivalent of French 102; and four years the equivalent of French 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

### 301. Advanced Grammar and Composition (3) I, II
Prerequisites: French 202 and 212. Advanced grammar; oral and written expression. (Formerly numbered French 311A.)

### 302. Advanced Grammar and Composition (3) I, II
Prerequisite: French 301.
Advanced grammar; stylistics and translation. (Formerly numbered French 311B.)

### 305A-305B. Survey of French Literature (3-3) I, II
Prerequisites: French 202 and 212. Important movements, authors, and works in French literature from the Middle Ages to the present. (Formerly numbered French 321A-321B.)

### 331. Masterpieces of French Literature (3)
French literary masterpieces from the Song of Roland to the present. Taught in English.

**UPPER DIVISION COURSES (Also Acceptable for Advanced Degrees)**

### 340. Intensive French for Reading (3) Cr/NC
Prerequisites: French 101 and 102. Reading, translation, and discussion of French texts (fiction, essays, articles, etc.) for upper division and graduate students. Taught in English. (Not applicable for graduation requirement in foreign language or for majors or minors.)

### 401. Advanced Phonetics and Diction (3)
Prerequisites: French 202 and 212. For students and teachers of French wishing to perfect their pronunciation and diction. Correct formation of French sounds in isolation and combination. Class exercises, individual drill, and use of special discs and tape recording.

### 411. Explication de Textes (3)
Prerequisites: French 202 and 212. An introduction to the analytical approach to the detailed study of literature. Demonstrations by instructor and students.

### 421. French Civilization (3)
Prerequisites: French 202 and 212. 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)
Prerequisites: French 202 and 212. French civilization from the Enlightenment to the present. Continuation of French 421. Not open to students with credit in Humanities 311.

### 431. Applied French Linguistics (3)
Prerequisites: French 301 and 302. Phonemics, morphemics, syntax and semantics of present day French.

### 432. French Civilization (3)
Prerequisites: French 202 and 212. French civilization from the Enlightenment to the present. Continuation of French 421. Not open to students with credit in Humanities 311.

### 433. Survey of the Modern French Theatre (3)
Prerequisites: French 301 and 302. Major novelists of the nineteenth century, Major dramatists of modern France.

### 446. 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.

### 449. Special Study (1-3) I, II
Prerequisites: French 301, 302 and 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.

### 503. History of French Language (3)
Prerequisites: French 301 and 302. The history of the French language from the beginnings through the sixteenth century. (Formerly numbered French 611.)

### 521. Seventeenth Century French Literature (3)
Prerequisites: French 301 and 302. Major seventeenth century dramatists with emphasis on Corneille, Moliere and Racine. (Formerly numbered French 521A-521B.)

### 531. Eighteenth Century French Literature (3)
Prerequisites: French 301 and 302. Major eighteenth century writers of fiction, with emphasis on Voltaire, Diderot and Rousseau. (Formerly numbered French 531A-531B.)

### 541. Nineteenth Century French Novel (3)
Prerequisites: French 301 and 302. Major novelists of the nineteenth century.

### 543. Modern French Theatre (3)
Prerequisites: French 301 and 302. Major dramatists of modern France.
545. Modern French Poetry (3)
Prerequisites: French 301 and 302.
Representative French poets of the modern era. (Formerly numbered French 501A-501B)

551. Twentieth Century French Novel (3)
Prerequisites: French 301 and 302.
Major novelists of twentieth century France.

596. Topics in French Studies (1-4)
Prerequisites: French 301 and 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.

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Geography

In the College of Arts and Letters

Faculty

Emeritus: Richardson, Storm, Taylor
Chair: Griffin
Professors: Eldemiller, Finch, Ford, Greenwood, Griffin, Heiges, Johnson, Keen, Kiewiet de Jonge, O’Brien, Pryde, Quastler, Stutz, Wright, Yahr
Associate Professors: Blick, Fredrich, McArthur
Assistant Professor: Colombo

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 semesters 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."

Major. A minimum of 24 to 33 upper division units to include Geography 305 (two units) and one unit of 498, or three units of 498.

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, 103L, and 170 are recommended.

Major (continued). Three units from each of the following groups: (a) Geography 320-324, 331-339, 521-522; (b) 350-358, 557-559; (c) 370-378, 570-576; (d) 401, 501-506; (e) 507-509; (f) 380-381; (g) 382, 585-589. (24 units.)

(b) Physical Geography

Students selecting this area are not required to complete a minor in another department.

Additional 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 401, 501-509; nine units from 380-382, 565-589, and three units from each of the following groups: (a) 320-339, 521-522; (b) 350-371, 557-576. (33 units.)
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.
Theory of meteorological instruments and observations. Practical exercise in surface and upper air observations, weather codes, and elementary weather map analysis. (Formerly numbered Geography 104.)

170. Man and the Environmental Problem (3) I, II
Man's impact upon and interaction with the natural environment, including suggested alternatives to existing abuses.

UPPER DIVISION COURSES
(Intended for Undergraduates)

305. Concepts and Trends in American Geography (2)
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 Analysis in Economic Geography (3)  
Prerequisite recommended: Geography 101 or 102.  
Spatial arrangement and interrelationships of resources, production, exchange and consumption; principles and theory in industrial location. Occasional field trips may be arranged.

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. (Formerly numbered Geography 464.)

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. (Formerly numbered Geography 310.)

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.

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.
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

501. Advanced Physiography (3)
Prerequisite: Geography 401.
The nature and properties of the earth's crust, internal structure and physiography.

504. Coastal and Submarine Physiography (3)
Prerequisite: Geography 378 or 401.
Analysis of marine waves, 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 101.
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.
Climatic and structural physiography.
Effects of latitude, altitude, mountains, ocean currents, wind systems, and various surfaces on the distribution of solar radiation, temperature, precipitation, and other climatic elements. Statistical reduction and interpretation of climatic data.

509. Regional Climatology (3) II
Prerequisite: Geography 103.
The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

521. Urbanization and Modernization in Latin America (3)
Prerequisite: Geography 102, 323 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.

522. Historical Geography of Latin America (3) (Offered at Imperial Valley Campus only)
Prerequisite: Geography 102, 323 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. Onsite and diffusion studies will be stressed.

540. 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.

555. 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.

556. Location and Spatial Structure of Cities (3)
Prerequisite: Geography 354 or three units of upper division course work in a related field.
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.

557. Methods in Urban and Transportation Analysis (3)
Prerequisite: Geography 556 and six units of upper division urban or transportation course work in geography or related field.
Methods and techniques employed in transportation and urban analysis; spatial models of urban activities, land use, population distribution and urban transportation systems. (Formerly numbered Geography 554.)

558. Advanced Transportation Geography (3)
Prerequisite: Geography 358 or 559.
Topics in the spatial analysis of transportation, e.g., spatial interaction patterns, diffusion process, models in spatial analysis. Occasional field trips may be arranged.

559. 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.

570. Land Use Analysis (3) II
Prerequisite: Geography 370.
Principles 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.

573. Geography as Human Ecology (3)
Prerequisite: Geography 170 or 370.
Human ecology related to resource geography. Occasional field trips may be arranged.

574. Water Resources (3) II
Prerequisite: Geography 170 or 370 or 371.
Occurrence and utilization of water resources and the problems of water resource development. Occasional field trips may be arranged.

575. Geography of Recreational Land Use (3) I, II
Prerequisite: Geography 101 or 102.
Analysis of specific aspects of recreational land use, management and quality of importance of location and environment in the use, management, and quality of recreation areas. Maximum credit three units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

576. 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.

581. Advanced Cartography (3)
Prerequisite: Three units of upper division course in cartography.
Advanced laboratory instructon and practice in cartographic techniques.

582. Automated Cartography (3)
Prerequisite: Three units from Geography 380, 381, 382, 585, 587, or 589, or from Geography 380, 381, 382, 585, 587, or 589. From Graphics or computer programming.
Computer/related methods in presenting complex spatially variable information of computerized methods in presenting complex spatially variable information of a qualitative nature; examination of existing automated mapping systems.

586. Quantitative Methods in Geographic Research (3) I, II
Prerequisite: Mathematics 119 or equivalent course in statistical methods.
Quantitative methods in geographic research, including computer solutions.
587. Remote Sensing of the Environment (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geography 101 and 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.

588. Advanced Remote Sensing of the Environment (3)
Two lectures and three hours of laboratory.
Prerequisite: Geography 587.
Current 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.

589. Field Geography (3)
Two lectures and three hours of laboratory.
Prerequisites: Senior or graduate standing and the completion of at least 12 units in geography, including Geography 101 and 102, and consent of instructor.
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
Chair: Abbott
Professors: Abbott, Berry, Gastil, Kern, Krummenacher, Peterson, Threet
Associate Professors: Bertine, Dorman, Miller, Placek, Wotawowski
Assistant Professors: Huntley, Marshall
Lecturer: Carsola

Offered by the Department
Master of Science degree in geology.
Major in geology with the B.S. degree in applied arts and sciences.
Minor in geology.
Minor in oceanography.

Geology 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."

Preparation for the major and the minor consist of basic requirements in the lower and upper division for all students plus the requirements in one of the following options: (a) General 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, 106, 221, 224; Biology 100 and 100L, or Zoology 100 and 100L; and Chemistry 200 and 201. (29 units.) Recommended: a foreign language and a course in mechanical drawing if not completed in high school.

Major. A minimum of 36 upper division units in approved courses to include Geological Sciences 305, 306, 498A-498B, 508. (14 units.) Other courses may be substituted for 508 in the geophysics and marine geology options by means of a petition approved by the department.

Options
In addition to the basic requirements, the student must complete the requirements in one of the following options:

(a) General Geology
Additional preparation for the major. Geological Sciences 230 (or Geological Sciences 530 may be taken in the major); Mathematics 119 and 150; Physics 180A-180B and 182A-182B, or Physics 195, 195L, 196, 196L, 197, 197L. Recommended: Chemistry 180A-180B and 182A-182B, or Physics 195, 195L, 196, 196L, 197, 197L.

Major (continued). Geological Sciences 506, 507, 524, 525, 530 (if Geological Sciences 230 not taken under preparation for the major), and at least one of the following: Geological Sciences 314, 502, 505, 520, 521, 526, 540, 550, 551, or 560. Courses to satisfy the requirements 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 allow courses from other disciplines to complete the upper division major requirement.

(b) Engineering Geology

Major (continued). Geological Sciences 510 or 512, 520, 550; Civil Engineering 444, 462; Engineering Mechanics 301; either Civil Engineering 445 or Geological Sciences 551.
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 444, 462 and Engineering Mechanics 301. 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, 195L, 196, 196L, 197, 197L (33 units.) Recommended: Mathematics 107.

Major (continued). Geological Sciences 530; Chemistry 410A-410B; either Geological Sciences 506 and 528, or Geological Sciences 524 and 525; six units of electives approved by the departmental adviser.

(d) Geophysics

Additional preparation for the major. Mathematics 107, 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L. (28 units.) Recommended: Engineering 140.

Major (continued). Geological Sciences 510, 512, 520, 521, 530; Mathematics 530; Physics 311, 357, 400A; either Engineering 511 or Electrical Engineering 553 and Mathematics 531, or Physics 350A and 542. Recommended: Civil Engineering 218.

(e) Marine Geology


Major (continued). Geological Sciences 530, 540, 545, and four of the following courses: Geological Sciences 506, 524, 525, 526, 546, 548; Biology 531; Chemistry 501; 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.

(f) Paleontology

Additional preparation for the major. Biology 215; Botany 200; Mathematics 150, or academic work beyond the B.S. degree); Physics 180A-180B and 182A-182B, or Physics 195L, 196, 196L, 197, 197L; Zoology 200. (24-29 units).

Major (continued). Geological Sciences 506, 507, 516, 526, and two courses from the following: Biology 411, 531; Botany 572; Zoology 506, 510, 560.

Geology Minor

The minor in geology consists of a minimum of 20 units in geological sciences, twelve of which must be in upper division courses to include Geological Sciences 104 (or 100 and S 333, 502, 506. In addition, Geological Sciences 221 or 230 are appropriate for geology majors. 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, 546, 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. The oceanography minor is not open to geology majors; geology students interested in the marine sciences should major in geology with the marine geology option.

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 evolution. 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.

104. Physical Geology (4) I
Three lectures and three hours of laboratory. Prerequisite: High school chemistry or physics, or credit or concurrent registration in college chemistry or physics.

105. Historical Geology (4) I, II
Three lectures and three hours of laboratory. Assignment for field study during the semester.

183. General Geology for Engineers (1) I, II
One three-hour laboratory or field project per week.

221. Mineralogy (4) I, II
Three lectures and three hours of laboratory. Prerequisites: Credit or concurrent registration in Geological Sciences 100 and 101, or 104. Theory of rocks and their modification through time. Geologic processes and their modification through time. Earth materials, geologic interpretation of particular concern to the engineer. Open only to students majoring in engineering. Not open to students with credit in Geological Sciences 101.

224. Petrology (3) I, II
Two lectures and three hours of laboratory. Prerequisites: Geological Sciences 100 and 101, or 104; and 221.

230. Introduction to Geophysics (3) II
Prerequisites: Geological Sciences 100 and 101, or 104; elementary algebra and plane

298. 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 298, 498, 598 courses applicable to a bachelor's degree.
### UPPER DIVISION COURSES

#### 301. Geology of National Parks and Monuments (3) I, II
Prerequisite: Geological Sciences 100 or 104.
Geology of a group of national parks and monuments, selected for their geological significance, scenic beauty, and visitor popularity. (Not acceptable for a major in geology but acceptable for a minor in geology.)

#### 303. Environmental Geology (3) I, II
Prerequisites: Geological Sciences 100 and 101, or 104.
Study of geologic processes and man, including landslides, flooding, earthquakes, and ground water resources.

#### 305. Structural Geology (3) I
Prerequisite: Consent of instructor.
Techniques and methods of geologic observation, interpretation, and field mapping.

#### 308. Field Geology (4) I, II
One lecture and three hours of laboratory, and twelve Saturday field sessions in the local area.
Prerequisites: Geological Sciences 224 and 305.

#### 314. Geomorphology (3) I
Prerequisite: Geological Sciences 105.
Development and classification of landforms with consideration of processes involved.

#### 319-S. Summer Field Tour (2)
Prerequisite: Consent of instructor.
A two-week study of some of the classic geologic localities in the western United States. A camping trip with travel by chartered bus. Localities visited may vary from year to year. See Class Schedule for specific content. Maximum credit four units.

#### 333. The History of Life (3) I
Prerequisite: A course in biological science. Nature, origin, and evolutionary development of life on earth.

#### 496. Advanced Topics in Geology (1-4) I, II
Prerequisite: Consent of instructor.
Selected topics in geology and related earth sciences. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 486, 596 courses applicable to a bachelor's degree. Maximum credit six units.

#### 498A. Senior Thesis (1) I, II Cr/NC
Prerequisite: Consent or concurrent registration in Geological Sciences 308.
Selection and preliminary investigation of an individual research project which will lead to a written thesis in Geological Sciences 498B.

#### 498B. Senior Thesis (2) I, II
Prerequisites: Geological Sciences 498A and credit or concurrent registration in Geological Sciences 509.
Individual research project and written thesis.

#### 499. Special Study (1-3) I, II
Prerequisites: Acceptable grade average in at least 12 upper division units within the major and consent of staff.
Individual study in field, library, laboratory, or museum work. Maximum credit four units.

### UPPER DIVISION COURSES (Also Acceptable for Advanced Degrees)

#### 502. Geology of North America (3) I
Prerequisite: Geological Sciences 105.
A regional analysis of North American geology, its structural, stratigraphic, and tectonic patterns and hypotheses concerning their origin and evolution.

#### 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.

#### 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
One lecture and three hours of laboratory and twelve Saturday field sessions.
Prerequisites: Geological Sciences 105 and 224.

#### 510. Petroleum Geophysics (3) I
Two lectures and three hours of laboratory. Occasional field trips.
Prerequisites: Geological Sciences 224, Mathematics 152, Physics 195, 195L, 196, 196L, 197, 197L.
Aeromagnetic, 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, 195L, 196, 196L, 197, 197L.
Aeromagnetic, 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 508.
The morphology, classification and geologic significance of the various microfossils.

#### 520. Ore Deposits (3) I
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geological Sciences 224 and 305.
The geologic relations, origin, distribution, and economics of metallic and nonmetallic mineral deposits.

#### 521. Petroleum Geology (3) II
Two lectures and three hours of laboratory.
Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.
Geologic occurrence of petroleum and the application of geologic principles in exploration and production.

#### 524. Optical Mineralogy (3) I
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 classification 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.
Plate 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, II
Prerequisites: Mathematics 121 and 122 or 150; Physics 180A or 195.
Physical environment of oceans including heat, water, and salt budgets, physical properties of 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.

546. Advanced Physical Oceanography (3) I
Prerequisites: Mathematics 121 and 122 or 150; Physics 180A or 195.
Physical principles behind the dynamics of oceans. Covers physical principles behind surface waves, internal waves, seiches, tsunamies, storm surges, wind wave generation and forecasting, tidal currents, air-sea interaction, heat and light transmission.

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.
Prerequisites: Geological Sciences 305.
Case histories selected to demonstrate the application of geology to the location, design, and maintenance of engineering projects.

551. Groundwater Geology (3) I
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 305 and Mathematics 150.
Geologic factors controlling the occurrence, movement and development of groundwater.

560. X-Ray Diffraction (2) II
One lecture and three hours of laboratory.
Prerequisites: Chemistry 200, 201; Mathematics 150; Physics 180A-180B and 182A-182B, or 186, 195L, 196, 196L, 197, 197L; and credit or concurrent registration in either Chemistry 310A or 410A, Engineering Mechanics 260, Geology 221, or Physics 354A.
Theory and application of x-ray diffraction to the study of materials.

GRADUATE COURSES
Refer to the Graduate Bulletin.
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.

The first two years of high school German may be counted as the equivalent of German 101; three years the equivalent of German 102; and four years the equivalent of German 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

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.

101. First Course in German (4) I, II
Four lectures and one hour of laboratory.
Prerequisites: German 101 or one year of high school German.
Continuation of German 101. Not open to students who have completed four years of high school German.

102. Second Course in German (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: German 101 or two years of high school German.
Continuation of German 101. Not open to students who have completed four years of high school German.

201. Third Course in German (4) I, II
Prerequisite: German 102 or three years of high school German.
Practical application of the basic principles of the language. Oral practice, reading in German of cultural material. (Formerly numbered German 203.)

202. Fourth Course In German (4) I, II
Prerequisite: German 201 or four years of high school German.
Continuation of German 201. (Formerly numbered German 204.)

211. Conversation (2) I, II
Prerequisite: German 202 or three years of high school German.
Practice in the spoken language with emphasis on the articulation of German sounds; practical vocabulary; conversation on everyday cultural topics. (Formerly numbered German 210.)

212. Conversation (2) I, II
Prerequisite: German 201 or 211, or four years of high school German.
Continuation of German 211. (Formerly numbered German 211.)

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 Intended for Undergraduates)

300. Honors Course (1-3) I, II
Refer to Honors Program.

301. Grammar and Composition (3)
Prerequisites: German 202 and 212. Grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered German 301A.)

302. Grammar and Composition (3)
Prerequisites: German 202 and 212. Grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered German 301B.)

310. Introduction to German Literature (3)
Prerequisite: German 202. Introduction to literary study in German, with selected readings representative of different periods and genres.

395. Selected Germanics (3)
One of the Germanic languages or literatures (other than German or English) selected for intensive study. See Class Schedule for specific content. Maximum credit six units in each language.

403. Advanced Oral and Written German (3)
Prerequisites: German 301 and 302. Advanced forms of oral and written German. (Formerly numbered German 403A.)

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
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)

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)
Prerequisites: German 202 and 310. Literature from the eighth century to about 1700.

545. German Literature of the Eighteenth Century (3)
Prerequisites: German 202 and 310. Literature from the eighteenth century to about 1700. (Formerly numbered German 545A-545B)

549. Goethe's Faust (3)
Prerequisites: German 202 and 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)
Prerequisites: German 202 and 310. Reading and discussion of representative works of significant authors and movements of the nineteenth century. (Formerly numbered German 555A-555B)

561. German Literature of the Twentieth Century (3)
Prerequisites: German 202 and 310. Reading and discussion of representative works of significant authors and movements of the twentieth century. (Formerly numbered German 561A-561B)

596. Topics in German Studies (3)
Prerequisites: German 202 and 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 296, 496, 596 courses applicable to a bachelor's degree.
Health Science

In the College of Human Services

Faculty
Emeritus: Fellers, Harper, Kitzinger
Chair: Bender
Professors: Bender, Burgess, McTaggart, Sorochan
Associate Professors: Barnes, Kassler, Neto, Sleet
Assistant Professor: Senn

Offered by the Department
Master of Arts degree in health science.
Major in health science with the B.S. degree in applied arts and sciences.
Minor in health science.

Health Science 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.

Emphasis in Community Health Education

Preparation for the major. Health Science 101, 102, Family Studies and Consumer Sciences 107, Psychology 101, Sociology 101, Speech Communication 103, Zoology 106, Chemistry 100, Microbiology 110, 110L, and Mathematics 107, 107, 133 units.

Major. A minimum of 48 upper division units to include Health Science 350, 400, 401, 470, 490, 497 (six units), 552, 561; Biology 362; Educational Technology and Librarianship 532; and Social Welfare 300, 401, 470, 561. (46 units)

Health Science Major

For the Single Subject Teaching Credential in Social Science

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 B.S. degree in applied arts and sciences.

Preparation for the major. Health Science 101, 102, Family Studies and Consumer Sciences 107, Psychology 101, Sociology 101, Speech Communication 103, Zoology 106, Chemistry 100, Microbiology 110, 110L, and Mathematics 107, 107, 133 units.

Major. A minimum of 36 upper division units to include Health Science 331, 351, 400, 470, 475, 520, 574, 575; Biology 362; Psychology 330; Sociology 440; and three units selected from health science or a closely related field.

Credential Requirements

In addition, students must complete 18 upper division units selected from anthropology, economics, geography, history, political science or sociology. Six of the units must be taken in each of two additional departments and three units from an additional field. The total program for the social science teaching credential must include three or more units in at least four different disciplines.

Health Science Minor

The minor in health science consists of a minimum of 15 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, 321, 331, 574, 575.

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.

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) I, II
Refer to Honors Program.

301. Concepts of Health Science (3)
Development and application of concepts in individual, family, and community health.

320. Health Education for Elementary Teachers (3) I, II, S
The teacher's function in the different aspects of the elementary school health program.

321. Health Education for Secondary Teachers (2) I, II, S
The teacher's function in the secondary school health program.

331. Crisis Management (3)
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)
Hazard of consumer products from the viewpoint of design and use.
310 / Health Science

400. Health Education as a Profession (3)
Prerequisite: Health Science 101.
Principles of health education and its role in the health system. For students with professional interests in health education.

401. Change Process in the Community (3) I, II
Prerequisites: Psychology 101, Sociology 101 and declared health science or social welfare majors.
Attitude formation, behavior change, decision making, perception, motivation, group behavior, etc., and their relationship to the practice of health and human services.

402. Communications in Health Education (3)
Prerequisites: Health Science 400, Speech Communication 103.
Development and production of health presentations for group and individual levels; including written, oral, and graphic methods.

406. Health Education Methodology (3)
Prerequisite: Health Science 400.
Strategies, techniques, and materials for planning and conducting health education. Applications of learning theory in the development and use of educational methodologies in health education.

470. Communicable and Noncommunicable Diseases (3)
Causes, prevention and control of communicable, degenerative and chronic health disorders.

471. Death Education (3)
Cultural, psychological, physical and personal aspects of death with emphasis on educational approaches.

475. Human Sexuality (3)
Examination of the development of sexual values, attitudes, and behavior from infancy to old age.

490. Measurement and Evaluation in Health Science (3) I, II
General and specific approaches to measurement in health science; data gathering techniques, organization, presentation and interpretation of data; basic principles of evaluation of student achievement.

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. Supervised Field Experience (1-6) I, II Cr/NC
Prerequisites: Community Health Education students: Senior standing and Health Science 401, 402 and 560.
Supervised practical experience in local health agencies and/or schools. Maximum credit six units.

499. Special Study (1-3) I, II, S
Prerequisite: Consent of special study adviser.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

520. Administration of the School Health Program (3)
Administrative responsibilities of the school health program. Principles, policies, and practices involved in health instruction, health services, environment, legal implications, and community relationships.

552. Health Administration (3)
Prerequisite: Health Science 400.
Basic concepts and practices in the administrative elements of a modern health program in various environments.

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. Not open to students with credit in Sociology 526.

562. 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.

573. 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, S
Tobacco, alcohol, and other drugs; their use, misuse and abuse.

575. Sex Education (3)
Prerequisites: Health Science 170 and 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: Gefter

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
Five 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
Five 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
Five lectures and one hour of laboratory.
Prerequisite: Hebrew 102.
Continuation of Hebrew 102. Applications of grammar and reading skills. Additional practice in conversation. (Formerly numbered Hebrew 203.)

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: Merrill, Nasatir, Ragen, Ridout, Rohrleisch
Chair: Flemion, P.
Professors: Appleby, J., Berge, Cheek, Coox, Cox, Cunniff, Davies, Detweiler, Dunn, Flemion, J., Hamilton, Hanckett, Munter, Norman, Phillips, Pincett, Rader, Ruettner, Schatz, Smith, C., Smith, R., Stair, Steele, Sutes, Strong, Vanderwood, Vartanian
Associate Professors: Appleby, A., Chu, DuFaut, Flier, Flemion, P., Heyman, Hoidal, McDean, O'Brien, Peterson, Vartanian, Weinberg
Assistant Professors: Bartholomew, Oades

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.

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 semesters 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."

Major. A minimum of 30 upper division units in history to include History 430 and a minimum of six units in each of three of the following fields: (a) Ancient, Medieval and Early Modern Europe; (b) Modern European History (c) United States; (d) Latin America; (e) Middle East and North Africa; (f) Africa and the Middle East; (g) Topical Subjects. It is the student's obligation, in consultation with the department chairman, to determine which courses fulfill his field requirements.

History 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 liberal arts and sciences.

Preparation for the major. History 105 and 106, or 110A-110B, or 115A-115B, or 120 and 121, (6 units.)

Major. A minimum of 36 upper division units in history to include History 430 with the remaining units distributed in the following pattern:
United States: Twelve units to include History 410A-410B and six units (preferably in sequence) selected from History 537A-537B, 539A-539B, 544A-544B, 545A-545B, 546A-546B, 547A-547B, 548A-548B;
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, Africa, and America to 1650. (Formerly numbered History 100A.)

101. World History (3)
Modern history from a global perspective, 1650 to the present. (Formerly numbered History 100B.)

105. Western Civilization (3)
Development of European culture, thought and institutions from ancient times through the seventeenth century. (Formerly numbered History 105A.)

106. Western Civilization (3)
Development of modern societies and states to the present day. (Formerly numbered History 105B.)

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. (Formerly numbered History 120A.)

121. Asian Civilizations in Modern Times (3)
The rise of Asian nations and nationalism with emphasis on the nineteenth and twentieth centuries. (Formerly numbered History 120B.)

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)

500A-500B. Ancient History (3-3)
Semester I: Greece to the fall of Constantine; Semester II: Rome to the 5th Century A.D.

503A-503B. Europe in the Middle Ages (3-3)
Survey of European social, cultural and political developments from the fall of Rome to the Renaissance.

504. Medieval Spain (3)
Survey of the Spanish regions to the early sixteenth century. Social and economic developments. (Formerly numbered History 515A.)

505. The Byzantine Empire (3)
The social, political, cultural, and economic development of the Eastern Roman Empire from the crisis of the third century to the fall of Constantinople in 1453.

506. The Renaissance (3)
The intellectual, artistic, and social transformation of Europe from the 14th through the early 16th century. (Formerly numbered History 506.)

507. The Reformation (3)
The formation of Continental Europe in the sixteenth century; split of Christendom, the religious wars, and the expansion of Europe and the beginnings of the scientific revolution. (Formerly numbered History 507.)

513A. Scandinavia (3)
The major political, social and economic developments in Scandinavia from the Viking Age to the end of the Napoleonic Wars.
### Field (b). Modern Europe
#### UPPER DIVISION COURSES
(Used 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. (Formerly numbered History 307A-307B)

408A-408B. England (3-3)
- Prerequisite: History 408A is prerequisite to 408B.
  - Political and social history of England from the earliest times to the present day, stressing the origins of American institutions and social patterns. Recommended for majors in English. (Formerly numbered History 520A-520B)

496. Issues in History (3)
- Refer to Field (g). Topical Subjects.

#### UPPER DIVISION COURSES
(Used Acceptable for Advanced Degrees)

500. 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. (Formerly numbered History 509B)

510A-510B. Europe's Age of Enlightenment (3-3)
- Semester I: Monarchs and monarchs at peace and war; economic and social transformations; the Baroque and the growth of the Enlightenment from 1650 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)

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.

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)
- 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. (Formerly numbered History 512B)

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 19th century to the present, including the rise of Parliamentary democracy, imperialism and the Victorian age, and political thought from the Utilitarians to the Fabians.

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. (Formerly numbered History 526A-526B)

527A-527B. Diplomatic History of Modern Europe (3-3)
- Prerequisites: History 105 and 106.
  - Diplomatic relations of the various European states with European and non-European neighbors in the late 19th and 20th centuries. Semester I: From the Concert of Europe (1815) to the era of Realpolitik in the late 18th century. Semester II: The diplomatic bargains 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 end of the Industrial Revolution. Semester II: From the Industrial Revolution to the present. An introduction to Field (c). United States

### Field (c). United States
#### UPPER DIVISION COURSES
(Used for Undergraduates)

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 development of American civilization through modification of Old World institutions in the new environment. (Formerly numbered History 531A)

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. (Formerly numbered History 531B)

531. The American Revolution (3)
- Development of colonial resistance to British rule after 1760, the War for Independence, and the development of the constitutional and the Constitution of 1787. This course meets the requirements in the United States Constitution. (Formerly numbered History 531B)
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.
(Formerly numbered History 532A-532B.)

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 in the Nuclear Age (3)

537A. The Westward Movement (3-3)
The American frontier: Expansion, exploration, settlement and building of the new state.
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 ideals.

537B. 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: Angle
mining, transportation, water, ranching and ethnic relations.

539A-539B. Black American Civilization (3-3)
Semester I: The Black minority group and its contributions and challenges to American
civilization. African backgrounds, slavery, the abolitionists, the free Black. Semester II: Ghetto
life, leadership personalities, and protest movements.

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.

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. The City in American History (3-3) I, II
Character and role of city in American history. Through study of the city as a
social-cultural organizational and political-economic center, course will examine urban
institutions, populations, problems, values, decision making, services.

544A. 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 ideals.

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 ideals.

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
dividuals, 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
(Also Acceptable for Advanced Degrees)

551A-551B. Mexico (3-3)
Survey of history of Mexico from Colonial Period to approximately 1825. Semester II: Mexican
and modernization. Recommended for students minorinng in Portuguese. (Formerly numbered History
551A-551B.)

552. Brazil (3)
Survey of the history of Brazil from Portuguese backgrounds to present. Brazil as a tropical
society. Recommended for students minoring in Portuguese. (Formerly numbered History
552A-552B.)

553. Caribbean Island Nations (3)
History of island nations of the Caribbean with emphasis on Cuba, Haiti, and Dominica.
Repudic in the nineteenth and twentieth centuries. (Formerly numbered History
553A-553B.)

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)

557. History of Latin American Popular Culture and
Social Thought (3)

558. Latin America in World Affairs (3)
History of Latin America's political and economic relations with Europe, the Soviet Union,
the United States, and the Third World. (Formerly numbered History 558A-558B.)
Field (e). South, Southeast and East Asia

UPPER DIVISION COURSES
(Reserved 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. (Formerly numbered History 320.)

421. Asia's Emerging Nations (3)
Historic changes which have contributed to the rise of modern Japan, India and China. 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. (Formerly numbered History 321.)

496. Issues in History (3)
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. (Formerly numbered and entitled History 562A, India—Hindu, Muslim and Modern.)

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. (Formerly numbered and entitled History 562B, India—Hindu, Muslim and Modern.)

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, revolution, modernization, and neo-colonialism. 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 pre-modern times. Emphasis on traditional philosophy, 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. (Formerly numbered History 567A.)

568. Communist Party and the Chinese Revolution (3)
Map and the evolution of Chinese Communist Party since 1920, including Red Army, rural soviets, social and economic and cultural systems, and foreign policy. (Formerly numbered History 567B.)

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 19th and 20th centuries.
496. Issues in History (3)
Examination of selected problems and current issues in history. May be repeated with change of content. Maximum credit six units with change of content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree. Refer to Class Schedule for specific content.
A. Ancient, Medieval, and Early Modern Europe
B. Modern Europe
C. United States
D. Latin America
E. South, Southeast and East Asia
F. Africa and Middle East
G. Topical Subjects

499. Special Study (1-3) I, II
Prerequisite: Consent of department chair and instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

596. Selected Studies in History (1-4)
Topics in the various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration and capitalism. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree. See Class Schedule for specific content. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Humanities
Administered by the Dean of the College of Arts and Letters

Faculty
Faculty assigned to teach courses in humanities are drawn from departments in the College of Arts and Letters. Dr. Charles Hamilton is chair of the Humanities Committee. Dr. Leon Rosenstein is Director of the European Studies Program and adviser to European Studies majors.

Offered by the College of Arts and Letters
Courses in humanities.
Major in European studies with the A.B. degree in liberal arts and sciences.
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, Art 258 or 259; Economics 101 and 102, or Geography 101 and 102, or Political Science 101 and 103; History 105, 106, (15 units.)

Foreign Language Requirement. Twelve units in Latin or one of the major European languages (French, German, Italian, Russian, Spanish).

Major. A minimum of 30 upper division units to be chosen with approval of the adviser and distributed as follows: six units in humanities to include Humanities 401A-401B or 402A-402B; six units in a major European foreign language; nine units in economics, geography, history or political science; six units in art, classics, comparative literature, music or philosophy; three units of electives. Majors in European studies must have their program for each semester approved by the adviser.

LOWER DIVISION COURSES
101. Introduction to Humanities (3)
Preliminary investigation: How values and ideals are expressed in the literary, artistic and intellectual achievements of individuals and civilizations throughout the world. (Formerly numbered Humanities 201.)

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 to 1600. Semester II: 1600 to 1940. (Formerly numbered Humanities 102.)

130. The Jewish Heritage I (3)
Major Hebrew concepts of the Biblical and post-Biblical periods; their impact on Western civilization and their contemporary relevance.

131. The Jewish Heritage II (3)
Major Jewish 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 development, 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
(Also Acceptable for Advanced Degrees)

310. French Civilization (3)
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. (Formerly numbered European Studies 310.)

311. French Civilization (3)
French culture from the Enlightenment to the present. Continuation of European Studies 310. Not open to students with credit in French 422. (Formerly numbered European Studies 311.)

320. German Civilization (3)
The major aspects of 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. (Formerly numbered European Studies 320.)

321. German Civilization (3)
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. (Formerly numbered European Studies 321.)

330. Russian Civilization (3)
The major currents and characteristics of Russian culture, as expressed through the centuries in literature, art, philosophy, and music, from the beginnings to early 19th century. (Formerly numbered European Studies 330.)

331. Russian Civilization (3)
Modern Russia's cultural development from early 19th century (The Golden Age) to the present. (Formerly numbered European Studies 331.)

340. Italian Civilization (3)
The major aspects of Italian civilization with emphasis on literature, art, philosophy, music, and history from the earliest times to the Renaissance. (Formerly numbered European Studies 340.)

341. Italian Civilization (3)
Continuation of Humanities 340 from the Renaissance to the present. (Formerly numbered European Studies 341.)

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. (Formerly numbered European Studies 350.)

370. The Humanities and Modern Man (1) Irregular Cr/NC
Lectures open to the public. Regular lectures on literature, language, philosophy, and cultural history. Reading and reports required of students enrolled for credit. Maximum credit three units.

400. Civilization (3)
Civilization through a conducted foreign travel tour. (Formerly numbered European Studies 400.)

401A-401B. The Cultural Heritage of Europe I, II (3-3) I, II
European civilization from the Middle Ages to the end of the 16th century with emphasis on major cultural movements. Semester I: Romanesque and Gothic; Semester II: Renaissance, Reformation, Mannerism. (Formerly numbered European Studies 401A-401B.)

402A-402B. The Cultural Heritage of Europe III, IV (3-3) I, II
European civilization from the 17th to the 20th century with emphasis on major cultural movements. Semester I: Baroque, Rococo, Neo-Classicism; Semester II: Romanticism, Realism, Naturalism, Symbolism, Expressionism, Existentialism, Structuralism. (Formerly numbered European Studies 402A-402B.)

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. (Formerly numbered European Studies 498.)

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. (Formerly numbered European Studies 580.)


Industrial Arts

In the Department of Industrial Studies
In the College of Professional Studies and Fine Arts

Faculty
Emeritus: Ford, Luce, McLoney, Rasmussen
Chair: Marsters
Professors: Anderson, Bailey, Dirksen, Guentzler, Hammer, Irving, McMullen, Thiel
Associate Professors: Lybarger, Marsters, McCowen
Assistant Professor: Lawrence

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 and 181 (17 units).

Major: A minimum of 24 upper division units to include nine units in each of two of the following fields: industrial drawing, general metalworking, plastics, general woodworking, electricity-electronics, transportation, graphic arts, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 498 and 499.

Industrial Arts Minor

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 School of Education. The requirements for the industrial arts major for the single subject teaching credential are the same as the requirements for the A.B. degree in applied arts and sciences. In addition, Industrial Arts 492 must be taken.

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 drawing, general metalworking, plastics, general woodworking, electricity-electronics, transportation, 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.

LOWER DIVISION COURSES

100. Introduction to Industrial Arts (2) I, II
Required of all industrial arts majors during their first semester.
The history and philosophy of industrial arts with emphasis on the current status and development of the secondary school curriculum. Discussion of professional requirements.

106. Survey of Electronics (3)
Six hours of laboratory.
A nonmathematical survey of electronics, practical utilization of tools and equipment of today's industry.

115. General Plastics (3) I, II
Six hours of laboratory.
Production methods, mechanical and physical properties, composition of plastics. The basic processes: molding, casting, thermoforming, 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. General Metalworking (3) I, II
Six hours of laboratory.
Exploration of basic materials and methods employed by industry to produce metal products. The attainment of knowledge and skills involved in the primary fabrication techniques of sheet metal, bench metal, art metal, foundry, forging, machining, and welding.

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.

151. General Woodworking (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 training.

161. Basic Electronics (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 training.

171. Power Mechanics (3)
Six hours of laboratory.
Introduction to the various forms of power transmission with emphasis on small gas engines and automotive preventive maintenance.

181. General Graphic Arts (3) I, II
Six hours of laboratory.
The history and philosophy of graphic arts with emphasis on the current status and development of the secondary school curriculum. Discussion of professional requirements.

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Industrial Arts Crafts (3) I, II
Six hours of laboratory.
Emphasis on skills in the industrial arts crafts by laboratory experiences in such areas as plastics, jewelry, lapidary, leather and 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, sound safety practices, and techniques of personnel management.

### 361. Intermediate Electronics (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 principles of electronics to the uses of 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 engine overhaul to include theory of operation, system design, and maintenance procedures.

### 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.

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### 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. Advanced Problems in Photography (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Technical problems in photography.

### 444. Color Photography (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Exposure and processing techniques as applied to current 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.
Course designed to increase professional skills, craftsmanship, advanced technical skills in equipment maintenance, patternmaking, design analysis, and upholstery.

### 462. Advanced Electronics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Exposure to electronic analog Circuits, development of advanced skills with application to industrial electronics. Techniques in the use of electronics test equipment and analysis of electronic devices.

### 464. Basic Digital Computers (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Functions of circuitry as applied to switching, timing and pulse circuits. Basics of computer digital logic.

### 465. Analog Computer Fundamentals (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Selected topics. May be repeated with approval of Industrial Arts department.

### 472. Power System Diagnosis and Tune-up (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Theory and application of various types of diagnostic testing equipment, with emphasis on troubleshooting and power system analysis.

### 482. Advanced Graphic Arts (3)
Six hours of laboratory.
Prerequisite recommended: Industrial Arts 381.
Planning of activities and perfecting of skills in printing and publication; efficient operation of machines and equipment.

### 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 practical work 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.

517. 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.

532. 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. Advanced Woodworking (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 351
Wood finishing, residential building construction techniques, and advanced machine operations.

563. Industrial Electronics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361
Advanced problems in industrial electronics circuit development, analysis, theory and application.

573. Accessory Power Systems (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.
Industrial Technology
In the Department of Industrial Studies
In the College of Professional Studies and Fine Arts

Faculty
Chair: Marsters
Advisers: Dirksen, Hammer
Faculty assigned to teach courses in industrial technology are drawn from Industrial Studies.

Offered by the Department of Industrial Studies.
Major in industrial technology with the B.S. degree in applied arts and sciences.

Industrial Technology 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.” This major in industrial technology may be planned with an emphasis in electronics technology, industrial sales, or manufacturing technology.

A minor is not required with this major.

Emphasis in Electronics Technology

Preparation for the major. Chemistry 100, 130; Economics 101, 102; Industrial Arts 115, 121, 131, 140, 161, 171; Mathematics 103, 107, 119, 121, 123, 137; Physics 180A-180B, 182A-182B. (61 units.)

Major. A minimum of 42 upper division units to include Industrial Technology 321, 361, 384, 455, 591, 592, 593, 594; and six units of electives selected with the approval of the adviser.

Emphasis in Industrial Sales

Preparation for the major. Business Administration 140; Economics 101 and 102; Industrial Arts 121; Mathematics 103, 107, 119, 120; Physics 180A-180B, 182A-182B; and 15 units selected from Industrial Arts 115, 131, 140, 151, 171 and 181. (47 units.)

Major. A minimum of 42 upper division units to include Business Administration 370 and three units selected from Business Administration 375, 473, 474, Industrial Technology 395, 495, 496, 498, 590; a minimum of 18 upper division units in applicable industrial arts and/or industrial technology courses in three technical areas (six units in each area), and three units of electives selected in consultation with the adviser.

Emphasis in Manufacturing Technology

Preparation for the major. Business Administration 140; Economics 101 and 102; Industrial Arts 121, 161; Mathematics 103, 119, 121, 122, 123; Physics 180A-180B, 182A-182B; and 12 units selected from Industrial Arts 115, 131, 140, 151, 171 and 181. (60 units.)

Major. A minimum of 51 upper division units to include Business Administration 360 and six units selected from 350, 351, 352, 461, 462; Industrial Technology 321, 361, 374, 495, 496, 498, 695; a minimum of 18 units in applicable industrial arts and/or industrial technology courses in two technical areas (nine units in each area) selected in consultation with the adviser.

* This major is being phased out. No new students are being admitted to the program.

UPPER DIVISION COURSES
(Intended for Undergraduates)

321. Industrial Design Problems (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
A study of blueprint reading, the design of jigs, fixtures and dies, and the application and solution of power transmission problems in the industrial environment.

326. Commercial Building Layout (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 422.
Layout of light and medium commercial building using concrete, steel and wood construction.

334. Technology of Ferrous and Nonferrous Metals (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
Applied metallurgy dealing with physical properties, heat treatments, testing and industrial applications.

354. Wood Processes and By-Products (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Study of wood by-products manufactured from macerated wood fibres, laminates, dielectric glue equipment and other processes.

351. Industrial Controls (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 161.
Study of industrial controls, including the electrical and electronic systems used in automated manufacturing methods. Emphasis on circuit functions, systems applications, and recent advancements in control techniques.

374. Fluid Power (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 171.
Study of fluid power, including hydraulic and pneumatic systems. Emphasis on circuit design and applications.

384. Printing Processes and Operations (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Recent advancements in the technology of graphic arts—study of work related to various printing processes.

455. Wood Inspection and Testing (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Study of methods used in testing wood, wood products, and the prinicples of mechanical testing of wood and wood by-products.

485. Photo-offset Lithographic Principles and Operations (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Study and experimentation in the field of offset lithography.

490. Supervised Field Experience (3-6)
Prerequisite: Sponsorship by a full-time Industrial Studies Department faculty member.
Supervised industrial experience in related occupational field. Specific assignments to be arranged in consultation with the adviser and selected industries. Maximum credit nine units.

495. Plant Layout and Material Handling (3)
Study of education and industrial plant layout for expeditious flow of materials.
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

591. Industrial Safety (3)
The integration of accident prevention into management functions. The organization of
training and safety programs emphasizing the detection and control of hazards, analysis of
data, investigations and environment modifications for safety effectiveness.

592. Industrial Materials (3)
A survey of various types of manufacturing materials used in industry. Evaluation of
materials composition, physical and mechanical properties with emphasis on processing
requirements and product design.

593. Manufacturing Processes (3)
A survey of manufacturing processes used in industry. Evaluation of forming, shaping,
assembly and finishing processes as they relate to characteristics of material and product
design.

594. Industrial Proposals and Specifications (3)
Research, practice and investigation in the planning and writing of industrial proposals
and plant manufacturing systems specifications.

Interdisciplinary Programs
In the College of Arts and Letters

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, and Social Science.

** The Liberal Studies Major is administered by the Dean of Undergraduate 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.

African Studies Minor
Dr. James N. Kerri, Afro-American Studies, 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*, 479*; Economics 469*;
Geography 335*, 589*; Political Science 364; and Religious Studies 346*.
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. Elmer Keen, Department of Geography, is adviser for this minor.
The minor in environment and society consists of a minimum of 27 units to include
Biology 100, Economics 101 and 102 or 303 and 304, Geography 101 or 102, nine units
selected from Biology 320 or 420, Economics 452, 453 or 555*, and Geography 370 or 371;
and six units selected from Anthropology 428, Biology 320, 420, 525, 526, Economics 452,
and History 340, 540. Political Science 334, 335, Sociology 550*. Recommended: Chemistry 301, Engineering 360,
Geology 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 these courses.

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)
specialize in disciplines in which an understanding of Jewish contributions is helpful.
Students may combine it with any major.

The minor in Jewish Studies may be combined with any 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.

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 595 (English 500), 525, 526, 571 (Legends and Mysticism), 577 (Kafka), History 496 (Jewish History), Philosophy 338, 535, Religious Studies 496 (Hasidism and Jewish Mysticism), 580 (Martin Buber). Relevant courses not here listed may apply to the minor with 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.

**Liberal Studies Major**

*With the A.B. Degree in Applied Arts and Sciences and in Liberal Arts and Sciences*

The liberal studies major provides two 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 1. Liberal Studies in Three Departments.**

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. The plan must be secured from each of the involved departmental advisers and from the Director of Undergraduate Studies prior to completion of 90 semester units. 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 increased.

**Major.** A minimum of 36 upper division units selected from three departments, with no fewer than nine units from any one. The liberal studies major is governed by the regulations of the liberal arts and sciences curriculum if two of the three fields selected are in the liberal arts and sciences or if three of the three fields are in the applied arts and sciences. 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 a descriptive booklet is available at the bookstore.

**Preparation for the major** (completion of preparation for the major fulfills all general education requirements for liberal studies majors). Sixty units distributed as follows in items 1 through 17 (no more than 12 units may be selected from any one department).

1. **Composition** (3 units) — Afro-American Studies 120A or English 100 or Mexican-American Studies 111A or Speech Communication 103,
2. **Composition** (3 units) — English 200 or 500,
3. **Speech** (3 units) — Afro-American Studies 140 or Mexican-American Studies 111A or Speech Communication 103,
Interdisciplinary Programs / 339

Global Perspective

A minimum of 18 units distributed as follows: At least three units from each of four sections (or a course mandatory).


Mathematics, Science and the Environment

A minimum of 18 units distributed as follows: At least three units from each of three sections.


Note: Ethnicity, Race and Gender are important dimensions of Contemporary American Society; elective course(s) from that emphasis are strongly recommended.


Note: American Studies 580 is frequently acceptable for American Perspective. Students should consult the Class Schedule for appropriate listings.

Socialization and Development

A minimum of 18 units distributed as follows: At least three units from each of four sections.


IV. Life Stages: Health Science 471* or Sociology 528*, Health Science 475*, Women’s Studies 360*, Health Science 573* or Psychology 335*, Sociology 527*, Sociology 514*.


Related Courses: Ethnicity, Race and Gender Emphasis—Afro-American Studies 330; Mexican-American Studies 481.

Western Tradition

A minimum of 18 units distributed as follows: At least three units from Sections I, II, and III.

510°; Drama 460A°; English 505°, 530°; Humanities 401A°; History 500A-500B°, 503A-503B°; Philosophy 301°, 502°; Political Science 301A°, Religious Studies 301°, 305°, 314°.

II. Transition: Art 573°, 574°, 575°; Comparative Literature 511°, 512°; English 513°, 514°, 530°, 541B°, 560A°; Humanities 401B°, 402A°; History 407A°, 484°, 506°, 507°, 509°; Music 351A°, Natural Science 515°; Philosophy 303°; Political Science 501B°; Religious Studies 316°; Women's Studies 352°.

III. Modern West: Anthropology 440°; Art 557°; Biology 505°; Comparative Literature 513°, 514°; Drama 460B°; English 540B°, 544A-544B°, 560B°; Humanities 402B°; Geography 335°; History 307B°, 484°, 511A°, 511B°, 512A°, 512B°; Microbiology 380°; Natural Science 515°; Philosophy 504°, 505°, 506°, 507°; Political Science 302°, 355°, 356°; Sociology 460C, 401°; Religious Studies 318°; Women's Studies 340°.

IV. Overview and Topics: Art 580°; Economics 335°; English 507°; Geography 350°; History 305A-305B°; Linguistics 510°; Mathematics 305°; Philosophy 533°, 541°.

Art and Language

(Note an emphasis; courses may be used for 9-12 elective units; limited to six units in Art. or Philosophy)


Foreign Languages

A student may choose any foreign language which he/she is qualified to take in the area of Classical, Oriental, French, Italian, German, Slavic, Native American, Spanish and Portuguese. For those students who anticipate working with Mexican-American children in the southwestern United States, Spanish is recommended.

Note: The following courses have additional prerequisites not included in preparation for the major or the major: Art 561, 569, 570, 576; Geography 508, 509; Economics 453; Family Studies and Consumer Sciences 436; Political Science 301B; Spanish 301, 442, 515A-515B.

Middle East Studies Minor

Dr. James N. Kerri, Afro-American Studies, 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 566°; Comparative Literature 535, Economics 469°, Geography 335° and Political Science 563.

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斯 Dukas, Department of Germanic and Slavic Languages and Literatures, is adviser for this major.

Preparation for the major: Russian 101, 102, 201, 202, or equivalent. (16 units.) Lower division prerequisites for the upper division courses to be taken in the major. (3-9 units) phfulled through course work for preparation for the major.

Foreign Language Requirement: The foreign language requirement is automatically fulfilled through course work in the humanities selected from Comparative Literature 513, 514, Humanities selected from Economics 330, 468, Geography 336, 337, Political Science 359, 55B; six units and six units of electives selected with the approval of the adviser.

Italian

In the College of Arts and Letters

Faculty

Professors: Vergani, G., Vergani, L.

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, nine 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. These high school courses will not count as college credit toward graduation. The first two years of high school Italian may be counted as the equivalent of Italian 101; three years the equivalent of Italian 102; and four years the equivalent of Italian 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

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.

101. Elementary (4) I, II

Four lectures and one hour of laboratory. Pronunciation, oral practice, readings on Italian culture and civilization, essentials of grammar. Not open to students who have completed three years of high school Italian.

102. Elementary (4) I, II

Four lectures and one hour of laboratory. Prerequisite: Italian 101 or two years of high school Italian.

201. Intermediate (4) I, II

Prerequisite: Italian 102 or three years of high school Italian. A practical application of the fundamental principles of grammar. Reading in Italian of cultural material, short stories, novels or plays; oral and written practice.

210. Conversation (2) I, II

Prerequisite: Italian 102 or three years of high school Italian. Practice in the spoken language; practical vocabulary; conversation on assigned topics. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

211. Conversation (2) I, II

Prerequisite: Italian 201 or 211. Continuation of Italian 210. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

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: Italian 201. Grammar review. Reading of modern Italian prose, with written reports and oral discussions in Italian. (Formerly numbered Italian 311.)
305A-305B. Italian Literature (3-3)
Prerequisite: Italian 201.
Important movements, authors and works in Italian literature from Middle Ages to present.
(Formerly numbered Italian 321A-321B.)

331. Italian Literature in Translation (3)
Works of outstanding Italian writers in English translation. May be repeated with new content. Maximum credit six units. (Formerly numbered Italian 331A-331B)

340. Intensive Italian for Reading (3) Cr/NC
Prerequisites: Italian 101 and 102.
Reading, translation and discussion of Italian texts (fiction, essays, articles, etc.) for upper division and graduate students. Taught in English. (Not applicable for graduation requirement in foreign language or for majors or minors.)

411. Literature of the Italian Renaissance (3)
Literature of the 15th and 16th centuries as presented in works of Poliziano, Lorenzo de' Medici, Pulci and Boiardo; Machiavel, Ariosto, Michelangelo, Cellini and Tasso. Taught in English.

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)
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
Lecturer: Reynolds

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

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. Preparation for Japanese 303.

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

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)
Prerequisites: 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: Brown, Buckalew, Holowach, Odendahl, Sorensen
Associate Professor: Bloom
Assistant Professors: Hartung, Spevak, Wulfmeyer

Offered by the Department
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 degree for graduation is 30. A maximum of six lower division units in journalism may be applied to the total of 30 units required.

Students should expect to be examined in spelling, grammar, punctuation and vocabulary before successful completion of the major in journalism. Certain upper division courses will be closed to students who have not passed the examination. Students wishing to major in journalism may be subject to screening to determine their eligibility to be admitted to the major.

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 semesters 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."
Major. A minimum of 24 upper division units in journalism to include Journalism 310, 460, 463, 465, and 490; 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 semesters 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."
Major. A minimum of 24 upper division units in journalism to include Journalism 310, 320, 480, 474, 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 semesters 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."
Major. A minimum of 24 upper division units in journalism to include Journalism 310, 350, 460, 465, 490; 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 semesters 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."
Major. A minimum of 24 upper division units in journalism to include Journalism 310, 450, 502, 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 semesters 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."
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 the section of this catalog on the College of Education. A major in journalism selected from any one of the emphases in journalism may be used to fulfill a major requirement in journalism by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

CredentiaL Requirements. A minimum of 45 units selected from courses in the following content areas:


Composition: 12 units selected from English 100, 200, 260, 500, 592; Journalism 220, 240, 425, 441, 470, 529.

Oral Communication: six units selected from Journalism 474, 475; Speech Communication 530, 535.

Advising School Publications: four units selected from Journalism 350, 443, 499.

Journalism Minor
The minor in journalism consists of 15-18 units in one of the following areas:

Advertising: Journalism 220, 310, 460, 465, 466, and 468. (18 units.)

News-Editorial: Journalism 220, 310, 320, 326, and three units from Journalism 502, 529.

Photojournalism: Journalism 220, 350, 441, 450, 451, and 502. (18 units.)

Public Relations: Journalism 220, 310, 480, 481, and 585. (15 units.)

Radio-TV News: Journalism 220, 310, 470, 474, 475, and 502. (15 units.)
LOWER DIVISION COURSES

200. Introduction to Mass Communication (3)
Mass media and their interrelationships. The media and the consumer: Value and function of the mass media, particularly news media, in contemporary society. Problems and responsibilities. (Formerly numbered Journalism 100.)

220. Writing for the Media (3)
One lecture and four hours of activity. 
Prerequisites: Sophomore standing and ability to type.
Introduction to writing techniques for the mass media, Laboratory practice in news writing, persuasive writing, evaluation, judgment; emphasis on newspaper journalism. (Formerly numbered Journalism 120.)

UPPER DIVISION COURSES

310. Information Gathering for Journalists (3)
Prerequisites: Advanced standing and ability to type.
Methods of interviewing and information gathering. Journalistic attitudes, ethics and skills, Questioning and listening, Press conferences. Nature of inference, supposition, skepticism and the adversary system. Quantification in reporting, Research resources Field experience.

320. Public Affairs News Reporting (3)
One lecture and four hours of activity.
Prerequisites: Journalism 220 and 310.
Field and laboratory practice in news gathering and writing, covering news beats including courts and local governments and other news sources. Emphasis on accuracy, clarity, comprehensiveness and interpretation.

326. News Editing (3)
One lecture and four hours of activity.
Prerequisites: Journalism 220 and 310.
Copy editing, headline writing, photo cropping and sizing, page layout and editorial judgment, Practice with wire and other copy. Attention to electronic editing.

350. News and Feature Photography (3)
One lecture and four hours of activity.
Prerequisite: Journalism 220.
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. (Formerly numbered Journalism 150.)

425. Editorial and Critical Writing (3)
Prerequisites: Journalism 310 and 320.
Principles and practices in editorial and critical writing. Editorials, columns and commentary, Analysis and interpretation.

441. Magazine Article Writing (3)
Prerequisite: Journalism 220.
Planning, gathering material, writing and marketing articles for specialized and general publications, Production of expository articles and marketing of at least one.

443. Magazine Editing and Production (3)
Two lectures and three hours of activity.
Prerequisites: Journalism 220 and 310.
481. Public Relations Techniques and Media Usage (3)
One lecture and four hours of activity.
Prerequisites: Journalism 220, 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: Advanced standing and consent of instructor. Advertising: Journalism 463; News-Editorial: Journalism 320 and 326, or 441 and 443; Photojournalism: Journalism 450; Public Relations: Journalism 481; Broadcast News: Journalism 474.
Supervised work on area media under the combined direction of professionals and professors. Maximum credit six units; no more than three units in any semester.

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. No more than three units in journalism to apply to the degree in journalism.

499. 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)

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.

502. Law of Mass Communication (3)
Prerequisites: Journalism 220, or Political Science 102, or Telecommunications and Film 100; and upper division standing.

503. History of Mass Communication (3)
Prerequisites: Journalism 220 or History 110B, and upper division standing.
American journalism from colonial times to the present, with special attention to twentieth century trends and developments, including the emergent concept of social responsibility.

508. Mass Communication and Society (3)
Prerequisites: Journalism 220 or Sociology 101, and upper division standing.
Social factors underlying nature, functions of mass media. Theories, models, research in media as culture carriers, opinion shapers; other societal interrelationships.

509. Research Methods in Mass Communication (3)
Prerequisites: Journalism 320 or 450 or 460 or 470 or 480; Sociology 201; and upper division standing.
Investigative tools and methods of mass media; research, content analysis, readership studies, audience measurement, experimental designs, and representative studies.

526. Advanced Editing Techniques (3)
One lecture and four hours of activity.
Prerequisite: Journalism 326.
Principles of typography, page and publication design; use of graphics and other pictorial material. Selection, evaluation, editing and display of news. Attention to electronic editing.
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, Mexican-American Studies, Political Science, and Spanish and Portuguese. Languages and Literatures. Professor Brian E. Loveman 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.

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 list 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, 102, 211, 212, or Spanish 101, 102, 201, 202, 211 and 212 with a minimum grade point average of 2.0 for all work attempted (12-20 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.

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, and Spanish, 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 Latin American Studies curriculum.

Courses acceptable for the Latin American Studies Major include: Latin American Studies 341, 344, 498, 580; Anthropology 425, 427, 438, 470, 475, 476, 477; Art 561, 416A-416B, 496 (when relevant); History 551, 553, 555, 557, 558; Mexican-American Studies 306A-306B, 515A-515B, 520, 522, 524, 570, 571, 572, 589 (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 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.

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 425, 427, Art 496 (when relevant), 561, 562; Economics 365, 464, 466 (when relevant); Geography 323, 324, 460 (when relevant); 498; History 415A-415B, 496 (when relevant), 536A-536B, 551A-551B, 552, 555, 558; Mexican-American Studies 333, 335, 376; Political Science 466, 567, 568; Spanish 306A-306B, 515A-515B, 570, 571, 572.

LOWER DIVISION COURSE

101. Latin American Heritage (3)
Introduction to Latin American cultures and peoples from an interdisciplinary perspective. (Formerly numbered Latin American Studies 120)

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

341. Latin American Civilization (3)
The principal aspects of the Latin American cultures with emphasis on literature, economics, geography, history, Latin American studies, Mexican-American Studies, political science, Portuguese, and Spanish, 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 Latin American Studies curriculum.

Courses acceptable for the Latin American Studies Major include: Latin American Studies 341, 344, 498, 580; Anthropology 425, 427, 438, 470, 475, 476, 477; Art 561, 416A-416B, 496 (when relevant); History 551, 553, 555, 557, 558; Mexican-American Studies 306A-306B, 515A-515B, 520, 522, 524, 570, 571, 572, 589 (when relevant) taken in one of the departments listed above.

344. Cooperative Studies at the Universidad Autonoma de Baja California (3-9)
(Offered only at Imperial Valley Campus)
Prerequisites: Spanish 301; declared major in Latin American Studies. Not open to students with credit in Spanish 441. (Formerly numbered Humanities 141.)

348. Mexican Civilization (3)
The principal aspects of Mexican civilization with emphasis on literature, philosophy and the arts. Not open to students with credit in Spanish 442. (Formerly numbered Humanities 466.)

498. Seminar on Latin America (3)
Exploration of the interdisciplinary approach to Latin America including evaluation of relevant resources and methods. Taught by a team of instructors representing two or more disciplines.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

580. Special Topics (1-4)
Prerequisite: Six upper division units in Latin American content courses.
Introduction to interdisciplinary study of selected Latin American topics. Credit will vary depending on interdisciplinary study of selected Latin American topics. Credit will vary depending on the scope and nature of the topic. Whenever appropriate, the course will be taught by a team of instructors representing two or more disciplines. May be repeated with different content. See Class Schedule for specific content: Maximum credit eight units.
Linguistics

In the College of Arts and Letters

Faculty
Emeritus: Tidwell
Chair: Underhill (Acting)
Professor: Frey
Associate Professors: Donahue, Elgin, Seright, Underhill
Assistant Professor: Webb
Lecturers: Bar-Lev, Landes, Major

Offered by the Department
Master of Arts degree in linguistics.
Minor in linguistics with the A.B. degree in liberal arts and sciences.
Teaching major in linguistics for single subject teaching credential in English.
Certificate in applied linguistics.

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.

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, ethnic studies, a foreign language, history, journalism, literature, philosophy, psychology, public administration and urban studies, sociology, speech communication and speech pathology, and audiology.

In addition, the demonstration of a reading competence in a second language is required for the minor in linguistics. Competence is normally demonstrated by a passing score on the Modern Language Association Language Test.

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 consecutive semesters 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."

Major. A minimum of 24 upper division units is required: 15 of these must be in linguistics (and those 15 must include Linguistics 521 and 522); at least nine units selected from: Anthropology 304, 410; American Studies 360, 362, 363; American Studies 501; Anthropology 304, 410; Modern Linguistics 521, 522, 523; Russian 570, 580, 581; Sociology 422, 424, 440, 512, 525, 548, 557, Spanish 548, 549, Speech Communication 391, 496 (when appropriate), 530, 535; Speech Pathology and Audiology 305. 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.

Minor in Linguistics
The minor in linguistics consists of a minimum of 15 units, 12 of which must be upper division units and nine of which must be from linguistics.

A student must choose a specialization from one of the following subject areas:

- Modern Syntax: Linguistics 101, 496, 520, 522, 525, 550, Philosophy 531*
- Phonology: Linguistics 101, 496, 500, 521, 523.
- Methods of Linguistic Analysis: Linguistics 250 Directed Language Study, Linguistics 496, 500, 523, 525, 550, Anthropology 410, Philosophy 531*
- Sociolinguistics: Linguistics 101, 496, 500, 521, 553, Anthropology 410*
- Psycholinguistics: Linguistics 101, 496, 500, 522, 535, Anthropology 410*


Substitutions may be made at the discretion of the undergraduate 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.

Certificate in Applied Linguistics
The Linguistics Department offers a basic and an advanced Certificate in Applied Linguistics. The basic certificate requires 12 units of study: Linguistics 520; Linguistics 550, Theory and Practice of ESL; Linguistics 552, Psycholinguistics; and either Linguistics 524, American Dialectology, or Linguistics 551, Sociolinguistics. Under certain circumstances comparable courses taken at other institutions may count toward the certificate. Such courses must be evaluated and approved by the Certificate adviser. In addition, there is a 15-course requirement that must be completed and approved by the Certificate adviser. In order to enroll, you must fill out the Certificate application form, available from the Certificate adviser.

Certificate in Applied Linguistics

LOWER DIVISON COURSES

101. Introductory Linguistics (3) I, II
Introduction to the principles and practice of modern linguistics as applied to the study of English. (Formerly numbered Linguistics 100.)

250. Directed Language Study (3) I, II
Prerequisite: Consent of instructor.
Directed independent study of a foreign language not offered within the course structure. 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 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.

370. Linguistics and Contemporary Issues (3)
Systematic linguistic analysis of language modes associated with various areas of contemporary life, using generative transformations, methodology as the analytic technique.

496. Experimental Topics in Linguistics (1-4) I, II
Specialized study of a selected topic in 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 six units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

*Additional prerequisites required for these courses.
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500. General Linguistics (3) I
Open only to seniors and graduate students. Recommended: Reading knowledge of Latin, French, Spanish or German.
The principles of linguistic development illustrated chiefly from the Classical, Romantic, and Germanic language groups.

510. History of English (3) I, II
The history of English and its present-day use.

520. Modern English (3) I, II
The structure of modern English, including the various approaches to linguistic analysis.

521. Phonology (3) I, II
Prerequisite: Linguistics 101.
Introduction to the theoretical principles of transformational-generative phonology.

522. Syntax (3) I, II
Prerequisite: Linguistics 101.
Introduction to the theoretical principles of transformational-generative syntax.

523. Phonemics and Morphemics (3)
The study of procedures for arriving at the phonetic inventory of languages and the structuring of sound units (both linear and intonational) into phonemic systems; the study of morphemic hierarchies and their arrangements in forming words.

524. American Dialectology (3) I, II
The development of American English; regional and cultural differences in pronunciation, grammar and vocabulary.

525. Semantics and Pragmatics (3)
Prerequisite: Linguistics 101.
Advanced semantic theory; systematic analysis of the interaction of sequences of language with real world context in which they are used.

550. Theory and Practice of English as a Second Language (3) I, II
The nature of language learning; evaluation of techniques and materials for the teaching of English as a second language.

551. Sociolinguistics (3) I, II
Prerequisite: Three units in linguistics or sociology.
Investigation of the correlation of social structure and linguistic behavior.

552. Psycholinguistics (3) I, II
Prerequisite: Three units in linguistics or psychology.
Psychological aspects of linguistic behavior.

553. Functional Bilingual Linguistics (3) I, II
Prerequisites: Knowledge of Spanish, Linguistics 520, and consent of instructor.
Recommended prerequisites: Speech Pathology and Audiology 528 and 532.
English and Spanish linguistic differences as related to children's second language acquisition; assessment of children's linguistic competence in second language learning through contrastive analyses of English and Spanish phonology, morphology and syntax.
Research on current linguistic theories in second language acquisition and in bilingualism.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Mathematics
In the College of Sciences

Faculty
Emeritus: Bryant, Clark, Eagle, Harris, Riggs, Willeiding
Chair: Van de Watering
Professors: Becker, Brainstetter, Bray, Burton, Davis, Deaton, Dobrians, Flanigan, Fountain, Garrison, Gindler, Harvey, Ho, Holmes, Howard, Lesley, Moser, Park, C, Romano, Saltz, Shaw, Short, Smith, Van de Watering, Villone, Warren
Associate Professors: Baase, Branca, Burdick, Eckberg, Elwin, Hager, Herndon, Hintzman, Kopp, Lopez, Macky, Marcus, Marosz, McLeod, Nowier, Ross, Vinge, Whitman
Assistant Professors: Carroll, Silver
Lecturers: Ford, Koop, Meckstroth, Teegarden

Offered by the Department of Mathematical Sciences
Master of Arts degree in mathematics
Master of Science degree in mathematics
Master of Science degree in computer science
Master of Science degree in statistics
Master of Arts for teaching service with a concentration in mathematics
Major in computer science with the A.B. degree in liberal arts and sciences
Major in computer science with the A.B. degree in applied arts and sciences
Major in mathematics with the A.B. degree in liberal arts and sciences
Major in mathematics with the B.S. degree in applied arts and sciences
Teaching major in mathematics for the single subject teaching credential
Minor in computer science
Minor in mathematics

Computer 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."
A minor is not required with this major.

Preparation for the major. Mathematics 107, 137, 150, 151, 152. (20 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 of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 371, 541A, 570, 572, 580 and nine units of approved electives. The student must complete an outline for the major and file a copy signed by the adviser with the evaluations office.

Computer Science 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 for this major.

Preparation for the major. Mathematics 107, 137, 150, 151, 152. (20 units)

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 371, 541A, 570, 572, 580 and nine units of approved electives. 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 A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduate requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major. Mathematics 150, 151 and 152. (13 units) Recommended: Physics 195, 195L, 196, 196L, 197, 197L.

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 of catalog on "Graduate Requirements."

Major. A minimum of 24 upper division units selected with approval of the department adviser before starting upper division work, including Mathematics 520A, 521A and 534A and one in two-semester 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 graduate requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major. Mathematics 107, 150, 151 and 152. (16 units)

Major. A minimum of 36 upper division units to include Mathematics 520A, 534A; at least nine units selected from Mathematics 340A, 340B, 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 approved by the B.S. adviser. The minor must complete an outline for the major and file a copy signed by the adviser with the evaluations office.

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 would be well prepared for graduate study in pure mathematics.

Preparation for the major. Mathematics 107, 119, 137, 150, 151, 152. (23 units)

Major. A minimum of 36 upper division units to include Mathematics 520A, 521A, 530, 541B, 550, 553B or 551A; and 12 units selected from Mathematics 531, 532, 536; and three units of electives. The student must complete an outline for the major and file a copy signed by the adviser with the evaluations office.

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 courses for which these are prerequisites; or Botany 200 and Zoology 200 and train the student in an area in some depth. Some latitude may be allowed in the choice of 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, 137, 150, 151, 152. (20 units)

Major. A minimum of 36 upper division units in mathematics to include Mathematics 520A, 534A, 570, 572; at least nine units from Mathematics 340A, 340B, 521A, 530, 531, 532, 533, 534B, 534A, 570, 572; and nine units of electives. The student must complete an outline for the major and file a copy signed by the adviser with the evaluations office.
103. Intermediate Algebra (3) Cr/NC
Prerequisites: One year of elementary algebra and completion of Mathematics Competency requirement. 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 or 140 and is not open to students with credit in Mathematics 119 or higher-numbered courses. May not be used to satisfy general education requirements.

104. Trigonometry (2) I, II
Prerequisites: Credit in plane geometry in either high school or college combined with either credit in Mathematics 103 at this university or qualification on Mathematics Placement Examination. Mathematics 104 may be taken concurrently with either Mathematics 140 or 150. Basic concepts of analytic trigonometry.

107. Introduction to Computer Programming (3) I, II
Prerequisite: Mathematics 103. Introduction to machine and data organization, the rudiments of job control; design and analysis of algorithms; flowcharts. Extensive programming of problems on the computer.

118. Topics in Mathematics (3)
A continuation of Mathematics 121 including concepts of trigonometry and the calculus of elementary transcendental functions. Not open to students with credit in Mathematics 140 or 150.

138. Higher Level Languages (1-2)
Prerequisite: Mathematics 107. Syntax and semantics of a given high level language. Units will depend on language. Programming will be run on computer. Possible languages include FORTRAN, COBOL, ALGOL, PUL, LISP, SNOBOL, APL. Simulation languages. See class schedule for current offering. Maximum credit six units.

140. College Algebra (3) I, II
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations. Functions, notation, mathematical induction, complex numbers, De Moivre's theorem, inequalities, binomial theorem, determinants, etc. Not open to students with credit in Mathematics 150.

141. Calculus for the Social Sciences (4) I, II
Prerequisite: 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 (5) I, II
Prerequisite: Mathematics 140 at this university, with minimum grade of C, and credit or concurrent registration in Mathematics 104, or qualification on the mathematics placement examination. Concepts and techniques of one variable calculus. Differentiation and integration of one variable, with applications.

151. Calculus and Analytic Geometry I (5) 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. Partial differentiation and multiple integrals. Concepts and techniques of several variable calculus. Partial differentiation and multiple integrals.

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. This course or its equivalent is required for students working toward a teaching credential in elementary education.

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.

Prerequisite: Mathematics 210A. Elementary number theory and congruences, metric and nonmetric geometry, introduction to logic, probability and statistics and some concepts from algebra.
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)

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 qualifications on Mathematics Education Placement Test. Mathematics 310A is prerequisite to 310B.
Integers, rational, 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 post-secondary teachers and teacher candidates. This course cannot be used as part of the major or minor in the Department of Mathematical Sciences.

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, electrodynamical analogies, the Laplace transform, and partial differential equations. Mathematics 340A is not open to students with credit in Mathematics 510; Mathematics 340B is not open to students with credit in Mathematics 531.

340C. Methods of Applied Mathematics (3)
Prerequisite: Mathematics 340B.
Finite and infinite dimensional vector spaces. Linear transformations and matrix representations, eigenvalue problems. Introduction to functions of the complex variable. Contour integration and conformal mapping. This course cannot be used as part of a major or minor in the Department of Mathematical Sciences.

350A. Statistical Methods (3)
Prerequisite: Mathematics 119 or equivalent statistics course.
One- and two-sample hypothesis tests, paired difference tests, tests for variance, analysis of variance, linear regression and correlation, chi-square tests. Simple nonparametric tests. The power of hypothesis tests. (Formerly numbered Mathematics 330A)

350B. Statistical Methods (3) II
Prerequisite: Mathematics 350A.
Multiple regression, factorial models and nonparametric methods, all with emphasis on applications. (Formerly numbered Mathematics 330B)

371. Discrete Mathematics, with Computer Applications (3)
Prerequisite: Mathematics 122 or 151.
Equivalence and order relations, Boolean algebra, finite machines and their optimization, logical design. (Formerly numbered Mathematics 571.)

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)

500. Introduction to the Foundations of Geometry (3) II
Prerequisite: Mathematics 122 or 151.
The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry.

501. Projective Geometry (3) I
Prerequisites: Mathematics 122 or 151 and consent of instructor.
Conic sections, cross ratio, projective transformations, duality, cross product, collinearity of points, and other properties of figures not altered by projections; construction and study of elliptic, hyperbolic, and parabolic geometry by means of projections.

512. Non-Euclidean Geometry (3)
Prerequisite: Mathematics 122 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 123 or 152.
A study of linear equations, Euclidean spaces, linear transformations, matrices, determinants, and eigenvalues. (Formerly numbered Mathematics 520)

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 152, Mathematics 521A is prerequisite to 521B.
Selected topics from modern algebra to include an introduction to the theory of groups, rings, and fields, and modern mathematics.

522. Number Theory (3)
Prerequisite: Mathematics 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 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 152.
An introduction to 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. Not open to students with uniform convergence, divergence theorems and Fourier series.

532. Functions of a Complex Variable (3)
Prerequisite: Mathematics 152.
Analytic functions, Cauchy-Riemann equations, theorem of Cauchy, Laurent series, calculus of residues.
533. Vector Analysis and Differential Geometry (3)
Prerequisite: Mathematics 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.

534A. Advanced Calculus I (3)
Prerequisite: Mathematics 152.
The real number system, limits and other topics, with emphasis on functions of one variable.

534B. Advanced Calculus II (3)
Prerequisite: Mathematics 534A.
A continuation of Mathematics 534A with emphasis on functions of two or more variables.

535. Introduction to Topology (3)
Prerequisite: Mathematics 534A.

536. Mathematical Models (3)
Prerequisite: Mathematics 520A.
Analysis of complex systems in biological and social sciences. Applications of graphical methods, systems of differential equations and Markov chains to stability of populations, prices, allocation of resources, etc.

541A. Numerical Analysis and Computation (3)
Prerequisites: Mathematics 107 and 152.

541B. Numerical Analysis and Computation (3)
Prerequisites: Mathematics 340A or 530, 520A and 541A.

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)
Prerequisite: Mathematics 152.
Probability models in the theory of statistics, sampling distributions with applications in statistical inference.

551B. Mathematical Statistics (3)
Prerequisite: Mathematics 551A.
Point estimation and hypothesis testing in statistical models with applications to problems in various fields.

552. 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. (Formerly numbered Mathematics 331.)

570. Data Structures (3)
Prerequisite: Mathematics 137.
Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multilinked structures.

572. Programming Languages (3)
Prerequisite: Mathematics 137.
Formal definition of programming languages including specification of syntax and semantics. Structure of algorithmic languages. Special purpose languages.

573. Automata Theory (3)
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)
Prerequisite: Mathematics 552.

577. Probability and Statistics (3)
Prerequisite: Mathematics 151.
Probability measures of central tendency and dispersion, characteristics of frequency distributions, correlation and regression, tests of significance, applications in practical problems.

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 151.
Permutations, combinations, generating functions, recurrence relations, inclusion-exclusion counting. Polya's theory of counting, other topics and applications.

580. Systems Programming (3)
Prerequisite: Mathematics 137.
Review of batch process systems programs, their components, operating characteristics, security, user services and their limitations. Implementation techniques for parallel processing of user applications. Concepts of parallel computing. (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. Software aspects of and several detailed descriptions of popular minicomputers. Presentation of several microcomputers.

586. Advanced Topics in Mathematics (1-4)
Prerequisite: Consent of instructor.
Selected topics in classical and modern mathematics. May be repeated with the 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.

GRADUATE COURSES
Refer to the Graduate Bulletin.
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.

Students majoring in Mexican-American Studies must complete a minor in another field approved by the adviser in Mexican-American Studies.


Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one of the preparation for the major. Students majoring in Mexican-American Studies must demonstrate knowledge of Spanish by satisfactory completion of written and "Graduation Requirements"

Major. A minimum of 24 upper division units to include Mexican-American Studies 301 and 21 units selected from: (social sciences) Mexican-American Studies 302, 303, 304, 360, 320, 324, 334, 350A-350B, 360, 481, 484, 486; or 21 units selected from (humanities) Mexican-American Studies 310, 320, 331, 332, 333, 334, 335, 336, 380; or 21 units selected from (bilingual systems) Mexican-American Studies 460, 461, 464A-464B, 480, 483. Three units selected from the following:

- 40, 483; (humanities) Mexican-American Studies 333, 335, 376, 380; (social sciences) Mexican-American Studies 320, 320, 350A-350B, 360, 481, 484.

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. Chicano Orientation (1) Cr/NC
Lectures relating to general Chicano topics on and off campus directed especially at freshmen and transfer EOP students; introduction to student services and general social problems in the Chicano community.

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.

111A. Oral Communication (3)
Training in the process of oral (speech) expression: addressing the barrio; formal delivery.

111B. Written Communication (3)
Prerequisite: Completion of the Writing Competence Requirement. Lectures relating to general Chicano topics on and off campus directed especially at freshmen and transfer EOP students; introduction to student services and general social problems in the Chicano community.

115. Mexican American in Transition (3)
Modern Chicano social problems recognizing the sociological factors involved. Emphasis on the 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 political system. This year course meets the graduation requirement in American 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. This year course meets the graduation requirement in American institutions.

200. Introduction to Mexican-American Culture (3)
The individual Chicanos and his cultural pattern: the acquisition of his culture, innovation and invention, direction of his cultural development, diffusion and interpretation of Mexican and U.S. cultures.

230. Mexican-American Art (3)
Contemporary Chicanos in the Southwest. Lectures and exhibitions by Chicanos artists of California.

250. History of Mexican-American Drama (3)
The individual Chicanos and his cultural pattern: the acquisition of his culture, innovation and invention, direction of his cultural development, diffusion and interpretation of Mexican and U.S. cultures.

The minor in Mexican-American Studies consists of a minimum of 18 units in Mexican-American Studies to include 12 units of upper division courses selected from any one of the following three areas: (social sciences) Mexican-American Studies 461, 464A-464B, 465,
255. Ballet Folklorico (3)
One lecture and four hours of activity.
Survey of folkloric 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 one 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. Political Economy of the Chicano People (3)
Prerequisite recommended: Mexican-American Studies 110A-110B. Further study of the economic structure of the Mexican-American communities. An interdisciplinary study of economic systems, primary and secondary sectors of the economy and the social factors which influence economic development. An approach to the economic dimension of the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

302. Community Organization and Development (3) I, II
Prerequisite recommended: Mexican-American Studies 110A-110B. Further study of the economic structure of the Mexican-American communities. An interdisciplinary study of economic systems, primary and secondary sectors of the economy and the social factors which influence economic development. Focus on the political and social consequences of economic development. Focus on the economic dimension of the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

303. Barrio Studies (3)
Prerequisite recommended: Mexican-American Studies 110A or 110B. Further study of the economic structure of the Mexican-American communities. An interdisciplinary study of economic systems, primary and secondary sectors of the economy and the social factors which influence economic development. Focus on the political and social consequences of economic development. Focus on the economic dimension of the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

304. Narcotics in the Mexican-American Community (3) I, II
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

305. Advanced Field Instruction (3)
Advanced fieldwork in the barrio. Directed research and development projects in the San Diego Chicano community. Maximum credit six units.

306. Immigration Law and Practices (3)
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

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. (Formerly numbered Mexican-American Studies 260.)

320. Mexican-American Life Styles (3)
The Mexican-American family in the past, present, and future. Historical, institutional and theoretical points of view. Parallels between the experience of the Chicano and other Hispanic groups. (Formerly numbered Mexican-American Studies 301A.)

322. Chicano Folklore (3)
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

324. Gramatica Cantada (Pedagogia, Musica 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 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.

332. Chicano Prose: Creative Writing (3)
A workshop in which students are given opportunity to write short stories. The point of departure and goal in sight. Maximum credit six units.

333. Prehispanic 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)
Ideeas, forms, history of significant Mexican-American prose, poetry and other literary genres.

350–350B. 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.

351. Linguistics of Chicano English (3)
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 alternative economic models in a multicultural society.

352. Families in the Southwest: Documents and Methods (3)

356. 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.

357. Chicano Folklore (3)
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

361. Bilingual Linguistics (3)
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

364-364B. Literature for the Chicano Student (3-3)
Semester I: Chicano literature for the preschool, elementary and junior high bilingual student. Semester II: Chicano literature for the high school, college, and adult bilingual Chicano student.

366. Bilingual Materials (3)
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.

367. Mexican-American Studies / 368
Preventive and curative aspects of drug problems. Focus on the Chicano subculture. Focus on the Mexican economy, the U.S. economy, and the historical interaction between them.
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.

485. Testing Theories and the Mexican-American in the Southwest (3)
Cultural bias in testing; survey of the latest testing techniques as applied to the Mexican-American in the educational system.

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, 498, 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.
Public Health Microbiologist. To qualify for the licensing examination given by the California State Department of Public Health for Public Health Microbiologist, the applicant must be a licensed clinical technologist and have completed a training internship in a Public Health Laboratory in California.

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, 530, 535, and Zoology 535. 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.” An major 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 119; Chemistry 200, 201, 250 or 251, and 250 or 251; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B; Psychology 101 or Sociology 101; Zoology 200. (45-47 units.)

Major. A minimum of 36 upper division units to include Biology 570; Civil Engineering 555; Microbiology 310, 410A-410B, 420, 430A-430B, 520; Sociology 440 or Psychology 340; and Zoology 528. 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 preparation for the major. Botany 200; Biology 215 or Mathematics 119; Chemistry 200, 201, 250 or 251, and 250 or 251; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B; Psychology 101 or Sociology 101; Zoology 200. (45-47 units.)

Major. A minimum of 38-41 upper division units in microbiology and approved related fields to include Microbiology 310, 320, 330, 340, 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, 521, 535, 570.

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, nursing and dietetics majors. Fulfills the general education requirement in the natural science area.

110L. Microbiology and Man, Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration 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 230 or 231, Botany 200.
Fulfills the general education laboratory requirement in the natural science area.

296. Experimental Topics (1-4)
Selected topics. May be repeated with consent of instructor. 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.

310. General Microbiology (4) I, II, S
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 230 or 231, Botany 200.
Fulfills the general education laboratory requirement in the natural science area.

320. Microbial Physiology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 230 or 231, Botany 200.
Fulfills the general education laboratory requirement in the natural science area.

330. Fundamentals of Immunology and Serology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310; Chemistry 520; and one of the following courses.
Fulfills the general education laboratory requirement in the natural science area.

350. Microorganisms in Human History (2) I, II
Influence of microorganisms on health and disease. Fulfills the general education laboratory requirement in the natural science area.

370. Community Epidemiology (3) I, II
Prerequisite: Microbiology 210.
Fulfills the general education laboratory requirement in the natural science area.

410A-410B. Principles of Environmental Health (3-3)
Two lectures and three hours of laboratory.
Prerequisites: Biology 215 or Mathematics 119; and Microbiology 310.
Fulfills the general education laboratory requirement in the natural science area.

420. Environmental Health Administration (3)
Prerequisite: Microbiology 410A.
Fulfills the general education laboratory requirement in the natural science area.

430L. Microbiology and Man, Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Microbiology 110.
Fulfills the general education laboratory requirement in the natural science area.
Microbiology / 373

430A-430B. Epidemiology (2-2)
Prerequisite: Microbiology 520; Biology 215 or Mathematics 119.
Study of the transmission, distribution, and control of infectious and noninfectious diseases in the community.

490. Investigation and Report in Microbiology (2-2)
Prerequisite: Microbiology 310 and at least one additional upper division course in microbiology.
Investigation and reports on current microbiological literature.

495. Methods of Investigation (2-2)
Prerequisite: Microbiology 310.
Laboratory methods used in microbiological research. Preparation and utilization of microbiological culture media and diagnostic reagents. Maximum credit four units.

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: Fifteen upper division units in the major with an average of B (3.0) or better.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510. Advanced General Microbiology (4)
Prerequisites: 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.

515. Bacterial and Viral Genetics (2-2)
Prerequisite: Microbiology 310. Recommended: Chemistry 361A-361B.
The genetics of bacteriophages and bacteria.

520. Pathogenic Bacteriology (4)
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 infecting agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.

525. Medical Mycology (4)
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
Mycotic 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)
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 (2-2)
Prerequisites: Microbiology 310. Recommended: Microbiology 330 and 520.
Viruses, their structure, function, culture, and methods of study.

535L. General Virology Laboratory (2)
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 535.
The culture, isolation, and characterization of viruses.

560. Marine Microbiology (2)
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)
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 560.

580. Animal Viruses (4)
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 535. Recommended: Microbiology 330, 520 and 535L.
Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and serology.

590. Electron Microscopy (4)
Two lectures and six hours of laboratory.
Prerequisites: Physics 180A-180B and 182A-182B; Microbiology 310. Recommended: Microbiology 535 and Zoology 508.
Principles and techniques in the biological application of the electron microscope.

596. Selected Topics in Microbiology (1-3)
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
In the College of Professional Studies and Fine Arts

Faculty
Professor: Giboney
Assistant Professor: Perkins
Instructor: Forest

Curriculum
Military Science courses are open to all students having an interest in history, national security, foreign policy, organizational leadership, management, and the military services. Students attend two hours of instruction per week. Enrollment in the Reserve Officer Training Corps (ROTC) is not a requirement for taking Military Science courses.

For the 1980-81 academic year, courses in Military Science will be offered under a rubric of University Studies.

The ROTC is an on-campus commissioning program available to all students who may wish to consider a career as an Army officer or commissioned participation in the Reserve Components while in civilian status. Students may pursue any academic major while participating in the ROTC. The ROTC student is expected to attend one 4-hour laboratory period per month. It is possible to substitute equivalent courses for the Military Science courses offered with instructor approval. Enrollment in ROTC for fulfillment of requirements for commissioning may commence during any phase of college attendance. Contact the Office of the Dean of the College of Professional Studies and Fine Arts for details.

Career options available upon receiving a commission are: a 30-year career on active duty with retirement at one-half pay possible at 20 years; three years active duty followed by reversion to a civilian career; three months active duty for training followed by participation with a reserve component unit and pursuit of a civilian career. Regardless of option, days in fulfilling obligated service are granted to permit attendance at graduate schools.

Students admitted into the Advanced ROTC program, normally at the junior level, are paid a $100 per month subsistence allowance for up to 20 months. As a requirement for commissioning, all ROTC students must attend the six-week Advanced Camp conducted at Fort Lewis, Washington. Attendance normally follows completion of the junior year. While at camp the student is paid at a rate equal to about half the pay of an Army Lieutenant and is reimbursed for travel expenses.

Students who have previous ROTC training or active military service may qualify for immediate Advanced Course standing. In addition, students may also actively participate in a Reserve or National Guard unit while participating in the ROTC program, drawing pay from both. There are also provisions for direct entry into the Advanced Course upon successful completion of an on-campus summer training program or through attendance at a six-week camp conducted annually at Fort Knox, Kentucky. See Two-Year Commissioning Program (below) or the ROTC admissions officer for details.

The Military Science department offers a series of adventure type outings and on-campus activities during the school year. These include orienteering, rappelling, mountaineering, cross-country skiing, river rafting, war gaming and participation in dorm-league sports. Participation is open to all students.

Two-Year Commissioning Program
a. Military Science ROTC Basic Camp. Prerequisite for freshmen or sophomores who have not participated in classroom, leadership labs, or alternative learning programs and who desire Advanced Course standing as ROTC cadets. Instruction and practical application in leadership theory, weapons familiarization, land navigation, tactical exercises, and demonstrations, individual confidence training, combat intelligence, and military customs and courtesy. A practical introduction to the basic military skills as a foundation for advanced training. Six weeks during the summer. Salary, transportation, meals and lodging furnished. No obligation incurred as a result of this training. Conducted at Fort Knox, Kentucky.

b. Military Science Summer On-Campus Program. An alternative to Basic Camp for those desiring Advanced Course standing as ROTC cadets. Instruction is similar to that for Basic Camp. Conducted at SDSU, the program consists of 91 hours of classroom instruction and field trips. By arrangement.

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 chair. In addition, two-year scholarships are available at the time of application for those students attending 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.
Music

In the College of Professional Studies and Fine Arts

The Department of Music is a Member of the National Association of Schools of Music.

Faculty
Emeritus: Hurd, Rohlfeiss, Rost, Savage, Smith, D. Smith, J.D., Springfield
Chair: Brown
Associate Professors: Hill, Logan, Loomis, Meadows, Mitchell, Moore
Assistant Professors: Fyfe, George, Kolar, O'Donnell
Lecturer: Warman

Offered by the Department
Master of Arts degree in Music
Major in music with the A.B. degree in applied arts and sciences.
Bachelor of Music degree in applied arts and sciences.
Teaching major in music for the single subject teaching credential.
Minor in music.

Music Curricula

The music curricula are designed to fulfill the needs of all students: (1) those who have professional ambitions in music performance, or seek a foundation for graduate study leading to college or university teaching, (2) those who are preparing for one of the several state teaching credentials; (3) those whose major professional interest is in another department, and are seeking musical study as a minor; and (4) those who are interested in music as an elective study area for the enrichment of their cultural background.

General Basic Requirements

General basic requirements for the B.M. degree in applied arts and sciences, the A.B. degree with a major in music in applied arts and sciences, or in teacher education are as follows:

1. All new students and transfer students who wish to enroll as music majors are given placement examinations in music theory and auditions on their major instrument and piano. Examinations in music theory will be taken in major and minor practical key areas.

2. Each semester of private instruction concludes with a solo performance before a faculty jury. The jury grade accounts for one-third of the final semester grade; the teacher's grade accounts for the remaining two-thirds.

3. To qualify for upper division study, music majors must complete successfully a Junior Level Aural Skills Examination. Failure in the examination will result in retention in the program.

4. The Junior Level Aural Skills Examination is a requirement for graduation. It is normally given at the close of Music 258B and may be retaken until passed. The exam includes four-levels of C (minimum) is required in each semester of the CMB courses in order to advance to the next highest course.

5. Students are encouraged to participate in at least one performing group each semester. One-half of the requirement stated in each degree program must be met by participation in a major performance group in which the student's major instrument is used regularly.

6. Attendance at and performance in recitals is a requirement of all music majors as set forth in the department recital regulations.

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; 116A: four units selected from courses numbered 170 through 190; four units of Music 158A-158B; four units selected from courses numbered 170 through 190; four units of Music 250, 258A-258B, 258C-258D. Recommended: Physics 109.

Major. A minimum of 28-29 upper division units to include Music 358A-358B; five units selected from courses numbered Music 370 through 390; 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). 115A: four units selected from courses numbered 320A through 335; 116A: four units selected from courses numbered 170 through 190; four units of Music 158A-158B; four units selected from courses numbered 170 through 190; four units of Music 250, 258A-258B, 258C-258D. Recommended: Physics 109.

Major. Thirty-eight to forty-two upper division units to include two units selected from Music 358A-358B, 448A-448B or 449A-449B, 552A-552B. six units selected from courses numbered Music 358A-358B, 351A-351B, 351C, 351D, 351E, 351F, 351G; four units of Music 450. 552A-552B. elect one course from Music 310, 351B, 351C, 351D.

Foreign Language Requirement. Eight to twelve units (or equivalent knowledge demonstrated in a test of reading knowledge administered by the Department of Music) as follows:

1. French, German, or Italian

2. Music History and Literature students—12 units of one foreign language chosen from French, German, or Italian

3. All other—eight units 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 require 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 may require prior 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 190; 246A–246B, four units of Music 250; 258A–258B. (31–35 units) Recommended: Physics 109.

Major. A minimum of 30 upper division units to include Music 158A–158B; two units selected from courses numbered Music 370 through 390; 446A–446B–446C; one unit selected from Music 448A or 449A; 355; two units of Music 450; 552A–552B.

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 380. Some students will be musically prepared for courses which they may or may not be included in this group. Enrollment of qualified students who wish to elect these courses is encouraged.

Performances 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 for 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 status form.

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, the student is required to take a preliminary audition conducted by Department of Music faculty which will indicate his status at the beginning of his study.

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.

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. Rudimentary music theory involving the elements of music: melody, rhythm, and harmony. Developing 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 only to music or elementary education majors. Fundamentals of guitar by acquisition of elementary skills. Not open to students with credit in Music 340.

151. Introduction to Music (3) I

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

Four hours.

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.

**Performance Organization Courses**
(Music 170 through 190)

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 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)**
- Concurrent registration in Music 175 and 176 required. Combined activity, six hours.
- **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. Semester II: Activity, five 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.

**190. Collegium Musicum (1) I, II**
- Three hours.
- **Prerequisite:** Consent of instructor.
- Maximum credit four units.

**207. Composition Laboratory (1) I, II**
- Three hours of laboratory.
- **Prerequisite:** Consent of instructor.
- Original writing in different homophonic and polyphonic forms for various media. Maximum credit two units.

**240. Practicum in Music (1) I, II**
- Three hours of laboratory.
- Materials and techniques used in instruction with field observation.
- A. Performance Areas.
- B. General Music.

**250. Performance Studies (1-2) I, II**
- Prerequisite: Open only to music majors. Audition and approval by departmental faculty. Fifteen one-half 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, Renaissance, and Baroque 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**
(Excepted 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)**
- Two hours.
- Fundamentals of violin, viola, cello and string bass by lecture and acquisition of elementary skills. Not open to students with credit in Music 120A.
320B. Strings—Elementary Class Instruction (1) II
Two hours.
Prerequisite: Music 120A or 320A.
Fundamentals of violin, viola, cello and string bass by lecture and acquisition of elementary skills emphasizing those instruments not previously studied in Music 120A or 320A. Not open to students with credit in Music 120B.

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. Not open to students with credit in Music 125A.

325B. Oboe and Bassoon—Elementary Class Instruction (1) I, II
Two hours.
Fundamentals of oboe and bassoon by lecture and acquisition of elementary skills. Not open to students with credit in Music 125B.

330. Brass—Elementary Class Instruction (1) II
Two hours.
Fundamentals of brass instruments by lecture and acquisition of elementary skills. Not open to students with credit in Music 130.

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. Not open to students with credit in Music 135.

340. Guitar—Elementary Class Instruction (1) I, II
Two hours.
Open only to music or elementary education majors. Fundamentals of guitar by acquisition of elementary 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.

347. Perspectives in Music (3) I, II
Musical understandings from non-performance aspects and perspectives regarding the relationships of music to the visual arts and the humanities.

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.

353. Opera Theatre (2) I, II
Four hours.
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 258B. 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 music.

367. Junior Recital (1) I, II
Prerequisite: Junior standing in music.
Selection of literature for recital program not to exceed 30 minutes in length; theoretical analysis and historical study of scores chosen; preparation for public performance; and examination before committee of music department faculty.

Performance Organization Courses (Music 370 through 390)
The performance group 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 designed to provide students with practical experience in rehearsal techniques.

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)
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.
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.

390. Collegium Musicum (1) I, II
Three hours.
Prerequisite: Consent of instructor.
Maximum credit four units.
448A-448B. Choral Conducting (1-1) I, II
Three hours.
Prerequisite: Music 258B. Music 448A is prerequisite to 448B.

449A-449B. Instrumental Conducting (1-1) I, II
Three hours.
Prerequisite: Music 258B. Music 449A is prerequisite to 449B.

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

450. Performance Studies (1-2) I, II
Prerequisite: Open only to music majors. Audition and approval by departmental faculty.
Fifteen one-half hour private lessons or thirty one-hour group sessions for one unit; fifteen one-hour private lessons for two units.

451. 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

452. 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 258B. 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.

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—Strings
B. Symphonic Literature
C. Keyboard Literature
D. Song Literature

596. Special Topics in Music (1-3) I, II
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: Mezsbacher
Chair: Feher
Professors: Dessel, Ingamson, Metzger, Phieger, Shull
Associate Professors: Dowier, Feher, May, Springer, Wallace
Assistant Professor: Thompson

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 the section of this catalog under the School 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 and teaching in chemistry and physics in secondary schools.

Preparation for the major. Biology 100, Chemistry 200, 201, 231, 251; Geological Sciences 100 or 104; Mathematics 150, 151; Physics 182A and 182B (or 180A and 180B); 231, 314, 317; Philosophy 537. To satisfy this requirement students must complete all major and general education requirements, including grades in History 110A-110B. Energy in Nature with Laboratory (4-4) I, II.

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, problem exercises and experiments.

115. Natural History (1) I, II
Seven meetings and one weekend.
The observational, phenomenological and descriptive study of the physical environment; astronomy, geology and meteorology. Students submit a written report on the study.

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 100A or 102A.

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.

LOWER DIVISION COURSES

100A-100B. Physical Science (3-3) I, II
Prerequisite for 100B: Natural Science 100A or completion of physical science requirement in Foundations of Learning.

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. Science 100A not open to students with credit in Natural Science 102A or 210A.

102A. 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 relevant to the subject discussed. Not open to students with credit in Natural Science 100A.

102B. Physical Science II (3) II
Two lectures and three hours of laboratory.

Prerequisite: Natural Science 102A.

Continuation of Natural Science 102A with additional subjects and extension of topics covered in 102A. For students interested in preparation for the major or for those interested in choosing an elective course in physical science.

UPPER DIVISION COURSES

(Interested 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, use of computers, and armaments.

310-5. Contemporary Problems in Physical Science (1) S Cr/NC
A series of six weekly lectures on varied aspects of physical science. Reading and reports required of students enrolled for credit. See Class Schedule for specific content. Maximum credit three units. These lectures are open to the public.

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 Foundations of Learning requirement in natural science and three units in classics history category of Foundations of Learning. 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 Foundations of Learning requirement in natural science and three units in classics history category of Foundations of Learning. Recommended: Astronomy 101 and a course in chemistry.
The major developments during the 15th 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 100A or 102A.
Technologies such as solar and fusion power, lasers, computer services, transport, synthetic food and their impact on values and life-styles of developed countries. Characteristics of postindustrial society, future shock and biological revolution. Curve extrapolation and simulation by games and computer.

400. Seminar (2 or 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. Processes and Inquiry in Physical Science (4-4) I, II
Three lectures and two hours of activity. Prerequisite: One course in a physical science or a life science. Recommended: Natural Science 210A or 210B.
Investigation of processes in science and the rational thinking skills characteristic of the physical sciences.

430. Interpretation of Quantum Mechanics (3) I, II
Identity, causality, questions of reality; the uncertainty principle. Especially intended for upper division students in the humanities who are curious about modern science.

431. The Origins of Life (3) II
Prerequisite: Completion of general education requirements in natural science. Recommended: A course in chemistry or Natural Science 102A.
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 298, 498, 598 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 COURSE
(Also Acceptable for Advanced Degrees)

522A-522B. Curricula in Physical Science (3-3) I, II
Two lectures and three hours of laboratory. Prerequisites: Completion of all lower division science preparation for a program of study leading to a teaching credential in a natural science area. Principles of physical science as presented in national curriculum study courses such as Project Physics, PSSC, IPS, and PSNS. May be taken for graduate credit only by candidates for a Master of Arts degree in Education in secondary curriculum and instruction.

GRADUATE COURSES
Refer to the Graduate Bulletin.

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Nursing
In the College of Human Services

Agency Member of the National League for Nursing
Accredited by the California Board of Registered Nursing
and by the National League for Nursing

Faculty
Emeritus: Coveny, Johnson, Moses, Nye, Sirovica, Thomas
Director: Wozniak
Professors: Black, Salerno, Wozniak
Associate Professors: Flagg, Hines, Laito, Verderber
Assistant Professors: Deluga, Hansen, La Monica, Laws, Leslie, Lutz, Moffett, Roz
Lecturers: Broderick, Colwell, Gilbert, Goldberger, Kallely, Lucas, Sakley, Schram, Shively, Smith

Offered by the School of Nursing
Major in nursing with the B.S. degree in applied arts and sciences

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.
First-time freshman and transfer student applicants requesting a nursing major will be ranked and evaluated on the basis of performance in required high school courses or transferred college or university course work in the same disciplines. Points will be granted to those who apply for admission in addition to the requirement as a major and meet the high school requirements. Points will be granted to those who apply for admission in addition to the requirement as a major and meet the high school requirements. Points will be granted to those who apply for admission in addition to the requirement as a major and meet the high school requirements.

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
   b. Course grade requirement (B or better) in each of these required university courses:
      Biology 261
      Zoology 108
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 Standard Written English Test
   b. By a score of 20 on the American College Tests
   c. By a score of 47 on the Scholastic Aptitude Test
   Students who have not achieved the minimum score on the writing competency test must register in Study Skills 150 prior to admission to the nursing program.

5. **Additional Point System.** Applicants requesting admission to the professional course work will be ranked and evaluated on the basis of a point system. A maximum of 94 points can be earned in meeting the prerequisite courses, writing competency, recognition of outstanding achievement, practical experience and bilingual ability requirements, and applicants will be ranked in accordance with points earned. In combination with points assigned earlier in the review process, a grand total of 110 points is possible. 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 (21 units). Obtain application form at the College of Human Services, Director of Admissions office.

**Special Instructions**

1. **Change of Major.** Requests for change of major during the 1980-81 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 1980-81 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.

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.

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### 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.

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### Sequence of Courses in the Nursing Curriculum

#### First Year

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<th>First Semester</th>
<th>Second Semester</th>
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<td>First Semester</td>
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<td>Chemistry 130</td>
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<td>Zoology 108</td>
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<td>Personality Development</td>
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<td>Nursing 204</td>
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<td>Nursing 306</td>
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<td>Elective</td>
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<td>Nursing 412</td>
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<td>Nursing 414</td>
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*Completion of three units in English composition is necessary to be eligible to take the State Board examination.*

**Courses in oral communication and statistics recommended.**
LOWER DIVISION COURSES

202. Nursing Science I (5) I, II
Two lectures and nine hours of laboratory.
Prerequisites: Admission to the nursing program. Satisfactory completion of concurrent registration in Microbiology 210; courses in personality development; and concurrent registration in Nursing 204.

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.

252. Stress in the Health Continuum (6) I, II
Three lectures and nine hours of laboratory.
Prerequisite: Concurrent registration in Nursing 250.

UPPER DIVISION COURSES

500. Honors Course (1-3) I, II
Refer to Honors Program.

506. Nursing Science III (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Nursing 250, 252; concurrent registration in Nursing 308 and 310. 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 (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 250, 252; concurrent registration in Nursing 308 and 310. 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 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.

310. Psychosocial Nursing (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 306 and 308. 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.

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. Geriatric Nursing (4) Irregular
Two lectures and six hours of laboratory.
Principles of gerontology as they apply to the nursing care of the older patient in a variety of settings.

350. Nursing Science IV (3) I, II
Two lectures and three hours of laboratory.
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 data. Emphasis on development of critical elements, criteria, and conclusions in evaluating objective evaluation of client care.

354. Maternal-Neonatal Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 356. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

356. Child Health Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 354. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

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. 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.

414. Community Health Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 354. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

450. Assertive Nursing (1) I, II
Two lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 412, 414; credit or concurrent registration in Nursing 412, 414; concurrent registration in Nursing 454 or 455. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

452. Clinical Nursing in Complex Situations (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 412, 414; concurrent registration in Nursing 450. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

454. Ambulatory Nursing in Complex Situations (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 412, 414; concurrent registration in Nursing 450. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

480. School Nursing (3) Irregular
Prerequisites: Concurrent registration in Nursing 412, 414; credit or concurrent registration in Nursing 412, 414; concurrent registration in Nursing 454 or 455. Focus on the child on the health-illness continuum. Emphasis on the child in the family and the therapeutic modalities in a variety of settings. Emphasis on the child's role in patient care situations.

492. Nursing Science IV (3) I, II
Three lectures and six hours of laboratory.
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 data. Emphasis on development of critical elements, criteria, and conclusions in evaluating objective evaluation of client care.
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 Geophysical 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 sciences 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, 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, and courses 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

(Intended for Undergraduates)

320. The Oceans (3) I, II
Prerequisites: One introductory college course in a life science and one in a physical science. Biological and physical aspects of the oceans and their significance to man; problems of modern oceanography.

320L. Oceanography Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Oceanography 320. Laboratory elective to accompany Oceanography 320. Laboratory and field methods of study in the major areas of oceanography.

400. Practical Oceanography (6) I, II Cr/NC
Laboratory, field work, or on-the-job training by arrangement.
Prerequisites: Chemistry 200, 201; Physics 180A-180B and 182A-182B; a course in intermediate college algebra and an elementary course in statistics. Recommended: a course in analytical chemistry (Chemistry 250 or 251).
Practical experience in oceanography at shore installations and at sea. An intensive full-time program in the laboratory and field aspects of the marine sciences. Offered only when ship scheduling permits. Enrollment only by application; students will be notified of selection by the tenth week of the semester preceding the desired interval because of ship berth
limitations. Students will normally participate on extended cruises at sea and are advised not to enroll for other courses nor to make employment commitments during the semester.

**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 196. 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 546: Advanced Physical Oceanography
- Geological Sciences 548: Coastal and Estuarine Physical Oceanography
- Microbiology 560: Marine Microbiology
- Zoology 510: Marine Invertebrate Zoology

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**Oriental Languages**
Refer to sections on Chinese, Hebrew, Japanese

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**Philosophy**
In the College of Arts and Letters

**Faculty**
Emeritus: Lauer, Ruja, Shields
Chair: Snyder
Professors: Carella, Crawford, Howard, Koppelman, McClurg, Nelson, O'Reilly, Rosenstein, Ruja Snyder, Warren, Weissman
Associate Professors: Feenberg, Troxell, Weston

**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 semesters 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.”

**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:

- Three units from among 502, 504, 505.
- Three units, either 506 or 507.
- Three units from among 523, 525, 537.
- Three units from among 512, 527, 528.
- Three units from among 521, 522, 531.
- 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 554.
- **Values:** Philosophy 329, 334, 510, 512, 527, 528, 533, 536, 541, 542 and 595.
- **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.
102. Introduction to Philosophy: Knowledge and Reality (3) I, II
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 and 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.

UPPER DIVISION COURSES
(intended for Undergraduates)

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.

303. History of Philosophy III (3)
Prerequisite: Six units of philosophy.
Nicholas of Cusa through Kant.

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.
Outstanding men and movements, e.g., Biblical ethics and law, Philo of Alexandria, the rabbatical tradition, the Kabbala, Moses Maimonides, Moses Mendelsohn and Martin Buber.

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
Prerequisites: Twelve upper division units in philosophy and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

502. History of Philosophy II (3)
Prerequisite: Philosophy 301.
Plotinus through William of Occam.

Philosophy / 399

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.
(Formerly numbered Philosophy 505B)

507. Twentieth Century Anglo-American Philosophy (3)
Prerequisite: Six units of philosophy.
Major figures and movements in Anglo-American philosophy since World War II.
(Formerly numbered Philosophy 505A)

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.
The foundations of linguistic philosophy with emphasis on achieving an awareness of the relationship between thinking and language.

510. Philosophy of Law (3)
Prerequisite: Six 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.

512. 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.

523. Theory of Knowledge (3)
Prerequisite: Six units of philosophy.
The major theories of human knowledge: mysticism, rationalism, empiricism, pragmatism.

525. Metaphysics (3)
Prerequisite: Six units of philosophy.
Prominent theories of reality, e.g., realism and nonrealism, 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; authority and individual, the community; 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.
GRADUATE COURSES

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, Wisdom, 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.

543. 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.

544. 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.

545. 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, Wisdom, and Ryle.

546. Philosophy of Religion (3)
Prerequisite: Six units of philosophy.
Philosophical examination of issues raised by the religious impulse in man.

547. 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.

548. Topics in Asian Thought (3)
Prerequisite: Six units of philosophy.
Selected philosophical themes, traditions or figures, e.g., substantivalism and nonsubstantivalism in Indian thought, Chinese Buddhist schools, Gandhi. See Class Schedule for specific content. Maximum credit six units with three units applicable to a master's degree. (Formerly numbered Philosophy 596.)

549. 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 296, 496, 596 courses applicable to a bachelor's degree. (Formerly numbered Philosophy 595.)

Refer to the Graduate Bulletin.
Certificate in Adapted Physical Education

All candidates for the Certificate in Adapted Education must complete all the requirements for the physical education major for the single subject teaching credential, apply for the certificate program and be accepted, and complete the following specialized course work.

A minimum of 15 units to include:

**Required classes:**
- Physical Education 567, 568
- Special Education 501*

**Electives:** A minimum of four units selected with the approval of the Coordinator of Adapted Physical Education from Physical Education 323, 563, 600 (therapeutic exercise), 660, 663, 664, 666, 668; Special Education 500, 501, 510 or 550; other classes with approval of Coordinator.

* Prerequisites waived.

Types of Activity Courses

A health history record is required of each student entering the university. Adapted physical education classes to care for special needs are offered. The content of these classes is planned to give each student an opportunity to participate in many activities of courses is planned to give each student an opportunity to participate in many activities of interest. An opportunity is afforded carryover value, developmental nature and recreational interest. An opportunity is afforded carryover values.

**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.

101A. Physical Fitness and Figure Control (1)

102A-102B. Conditioning (1-1)

103A-103B. Jogging (1-1)

104A-104B. Weight Training (1-1)

105. Individual Adaptives (1)
Prerequisite: Consent of instructor.

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.

108A-108B. Basketball (1-1)

109A-109B. Soccer (1-1)

110A-110B. Volleyball (1-1)

111A-111B. Softball (1-1)

112A-112B. Field Hockey (1-1)

113A-113B. Flag Football (1-1)

114A-114B. Wrestling (1-1)

115A-115B. Track and Field (1-1)

116A-116B. Golf (1-1)

117A-117B. Archery (1-1)

118A-118B. Tennis (1-1)

119A-119B. Bowling (1-1)

120A-120B. Badminton (1-1)

121A-121B. Handball (1-1)

122A-122B. Fencing (1-1)

123A-123B. Racquetball (1-1)
124A-124B. Sailing (1-1)
Physical Education 124A is prerequisite to 124B.
125A-125B. Men's Gymnastics Apparatus (1-1)
126A. Rhythmic Gymnastics (1)
127A-127B. Women's Gymnastics Apparatus (1-1)
128A-128B. Ice Skating (1-1)
129A-129B. Swimming (1-1)
130A-130B. Synchronized Swimming (1-1)
131. Life Saving (1)
132A-132B. Ballroom Dance (1-1)
133A-133B. Folk and Square Dance (1-1)
134A-134B. Modern Dance (1-1)
135A-135B. Ballet (1-1)
136A-136B. Jazz (1-1)
138. Selected Activities (1)
May be repeated with new activity for additional credit. See Class Schedule for specific content.

141. Physical Education of Children (2)
Four hours of activity.
Application of the principles of motor learning and muscular fitness to the elementary physical education activity program. Includes a practical field experience with elementary students.

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.

165. Techniques in Athletic Training (2)
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, bandaging and taping.

176. Foundations of Physical Education (2)
Overview of discipline of physical education with a view toward development of a basic philosophy and background for entering profession. Required for all physical education majors and minors.

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.

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.

UPER DIVISION COURSES

( Intended for Undergraduates)

320. Skin and Scuba Diving (2)
One lecture and three hours of laboratory.
Prerequisites: Medical examination, waiver for hazardous procedures, pass swimming competency test.

Function and knowledge of underwater diving to include diving physiology, hyperbaric conditions, medical hazards, safety procedures associated with scuba diving, proper care and operation of equipment.

322. Practicum: Life Saving and WSI (2)
Four hours of activity.
Prerequisite: Intermediate swimming class at SDSU or its equivalent. (Swimmers level of Red Cross.)
Content designed to qualify expert swimmers in both American Red Cross Life Saving and Water Safety Instructor's Certification. Includes methods and materials for teaching all levels of swimming.

323. Instructor's Course in Swimming for the Handicapped (1)
Two hours of activity.
Prerequisites: Medical exam, waiver for hazardous procedures, pass swimming competency test.
To develop knowledge of various types of handicapping conditions, as well as how to adapt programs, methods and materials for these conditions. Red Cross certification (WSIH) is given upon satisfactory completion of course.

330. Physical Welfare of the Athlete (3)
Two lectures and two hours of activity.
Prevention, diagnosis and treatment of athletic injuries; the use of ergogenic aids; nutrition; the conditioning program, including basic knowledge of appropriate parameters—flexibility, strength, endurance and related areas.

331. Practicum: Theory and Analysis of Coaching Competitive Sports (2)
Four hours of activity.
Concentrated study to include mechanical analysis, tactics and strategy, scouting, officiating and rules, and daily-seasonal practice planning in one of the sports listed below.

A. Basketball
B. Football
C. Baseball
D. Track and Field (including Cross Country)
E. Women's Field Sports
F. Additional sports (offered on student demand) may be repeated with new content.

341. Practicum: Physical Education Activities for Elementary Schools (2)
Four hours of activity.
Prerequisite: Physical Education 141.
In-depth study of selected physical education activities for elementary school children.
Includes teaching techniques, unit planning, progressions and resource materials.

345. Practicum: Physical Education Activities for Secondary Schools (2)
Four hours of activity.
Prerequisite: Passing competency tests in each activity covered in section. Selection and care of equipment, skill analysis, teaching progressions, evaluation.
### 352. Workshop in Dance (1-2)
- Two hours per unit.
- Choreographic techniques and skills with visiting master teachers; written report or project. Maximum credit four units.

### 362. Exercise Physiology Laboratory (1)
- Three hours of laboratory.
- Prerequisite: Consent 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.
- 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 or concurrent registration in Physical Education 567 or 568.
- Supervised laboratory of practical experience in adapted or special physical education programs. Maximum credit four units.

### 369. Practicum in Athletic Training (1-3)
- Three hours of laboratory per unit.
- Prerequisite: Physical Education 165.
- Practical training and clinical applications of basic and advanced techniques of athletic training and sports medicine. Athletic first aid, emergency procedures, bandaging, taping, use of physical therapy modalities, and application of therapeutic exercises to be performed in actual athletic medicine clinics. Maximum credit six units.

### 371. Physical Growth and Development (3)
- Principles of human growth; performance as affected by developmental levels and individual differences in structure and function.

### 376. Socio-Cultural Foundations of Physical Activity (3)
- Prerequisite: Physical Education 176.
- Integrated approach to understanding of historical, philosophical, and sociological forces shaping development of physical education and sport. (Formerly numbered Physical Education 175.)

### 380. Physical Education Programs (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.

### 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.
- Basic modern dance skills with emphasis on alignment.

### 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.
- Progressively difficult movement patterns based on previously developed skills with emphasis on elevation, rhythm, body design, and dynamic flow of movement.

### 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 Socio-Cultural Aspects of Physical Activity (3)
- Prerequisite: Physical Education 376.
- Historical, anthropological and cultural factors influencing development of sport and physical education in America, and current sociological, philosophical, socio-psychological, physical education in modern American society. (Formerly numbered Physical Education 375.)

### 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 competition.

### 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

#### 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 structural 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.

556. History and Philosophy of Dance (2)
The cultural background of all forms of dance in various civilizations with emphasis on the relationship of the social structure to the existing dance forms.

557. Dance Criticism (2)
Prerequisite: Physical Education 556.
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.

561. Physiology of Exercise (3)
Prerequisites: Biology 362 and Zoology 108.
Effects of physical activities on the physiological functions of the body.

562. Cardiopulmonary Laboratory (2)
One lecture and three hours of laboratory.
Prerequisites: Physical Education 362 and 561.
Cardiopulmonary evaluation of human subjects for rehabilitative and preventive cardiology including electrocardiography, blood chemistry, ergometry, central and peripheral vascular assessment, body composition, and life-style change.

563. Biomechanics of Human Movement (2)
Prerequisite: Zoology 108.
Mechanical principles as applied to movement; analysis and application to selected motor skills.

565. Prevention and Rehabilitation of Injuries to Athletes (2)
One lecture and three hours of laboratory.
Prerequisites: Physical Education 560 and 561.

567. Corrective and Orthopedic Physical Education (2)
Prerequisites: Physical Education 560 and 561.
Etiology, characteristics, and programs for children with corrective and/or physically handicapping conditions will be discussed. This will include evaluating and implementing prescribed activities for individuals with these types of conditions.

568. Special Physical Education (2)
Prerequisites: Psychology 101 and Physical Education 371.
Etiologies, characteristics, and education programs for mentally retarded, emotionally disturbed, learning disabled, blind and hearing impaired individuals. Specific programs and activities are discussed relevant to each of disabled groups mentioned.

570. Psychological Bases of Physical Education (3)
Prerequisite: Psychology 101.
Psychological parameters related to physical performance and the acquisition of motor skills.
Physics

In the College of Sciences

Faculty
Emeritus: Clark, Craig, Kaibbell, Moe, Smith, Snodgrass, Wolter
Chair: Burnett
Professors: Burnett, Garrison, Lilly, Morris, Nichols, Piserchio, Rehtuss, Roeder, Shore.
Skoll, Teasdale, Templin
Associate Professors: Cottrell, Davis, Solomon
Lecturer: Shackelford
Adjunct Faculty: Eargle, Eckert, Kaufmann, Martin

Offered by the Department
Master of Arts degree in physics.
Master of Science degree in physics.
Master of Science degree in radiological physics.
Major in chemical physics with the B.S. degree in applied arts and sciences.
Major in physics with the A.B. degree in liberal arts and sciences.
Major in physics with the B.S. degree in applied arts and sciences.
Single Subject teaching credential in physical sciences in the area of physics.
Minor in physics.

Chemical Physics Major
With the B.S. Degree in Applied Arts and Sciences
Preparation for the major. Mathematics 150, 151, and 152; Physics 195, 195L, 196, 196L, 197, 197L (35 graduate work acceptable for students preparing for elementary or secondary teaching, Students planning 340A-340B, and three units from Mathematics 521A, 532 or 534A. Mathematics listed in the section of the catalog on "Graduation Requirements," Individual master plans for each student are filed with Evaluations.

* Chemistry 204A-204B replaces Chemistry 200, 201 and 251.

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 the listed.

Preparation for the major. Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L (43 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. Students should choose French, German or Russian. Refer to section of catalog on "Graduation Requirements."

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 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." Individual master plans for each student are filed with Evaluations.
A minor is not required with this major.

Preparation for the major and the major 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. Mathematics 200, 201, or 204A-204B; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L (35 units).

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
The courses in this area constitute the expected preparation for entering students in many graduate physics programs.
Required: Physics 510, and 532 or 564.
Recommended: Physics 350B, 552.
Strongly recommended: Physics 532, 564.
(b) Scientific Instrumentation
Required: Physics 413, 516A.
Recommended: Physics 515, 516B.
Strongly recommended: Physics 518, 520.
(c) Modern Optics
Required: Physics 306, 552, 553.
Recommended: Physics 518A, 532.
(d) Radiation Physics
Required: Physics 302, 560, 561, 565.
Recommended: Physics 413, 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
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. This major may be used by students in teacher education for the A.B. degree in applied arts and sciences.

The requirements for the single subject teaching credential in physical sciences in the area of physics are the same as those listed for either the A.B. degree in liberal arts and sciences or the B.S. degree in applied arts and sciences. The department is currently offering three options: (a) Scisence, (b) Mathematics, and (c) General Science.

Applying for a waiver of the State Examination for the Teaching Credential in Physics.

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 major be in upper division courses. The department recommends that the requirements for the minor be selected from the courses in one of the areas listed below. Prerequisites: Physics 150 and 151.
180A-190B, 195 and 195L, 196 and 196L, 197 and 197L, Mathematics 123 or 152.

Foundations of Physics (for Mathematics, Chemistry, and Astronomy.
Physics Minor
Enrollment in the College of Sciences or the (B.S. degree in applied arts and sciences.
Scientific Instrumentation (also appropriate for all science majors above). Physics 311, 313 and 413 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.

Radiation Physics. In lieu of the prerequisites listed above, a student may substitute Physics 115A-115B or 180A-180B and 182A-182B; Mathematics 123 or 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.

**LOWER DIVISION COURSES**


103. Physics for Poets (3) I, II

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.

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 (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 115A-115B, 180A-180B, 195, 195L, 196, 196L, 197, 197L.

109. Physics of Musical Sounds (3) I, II

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.

115A-115B. Elementary Physics (4-4) I, II

Two lectures, one discussion and three hours of laboratory.

Prerequisites: Two years of high school mathematics. Physics 115A is prerequisite to 115B. This is a one-year course for non-science majors. Physics 115A is not open to students with credit in 180A or 195, 195L; 115B is not open to students with credit in 180B, 196, 196L, or 197, 197L. Foundations of wave motion, behavior of light, energy, mass, evolution of ideas concerning planetary motion. Emphasis on evolution of fundamental concepts.

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

Prerequisite: 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 180B not open to students with credit in Physics 195. Physics 180A not open to students with credit in Physics 196. (Formerly numbered Physics 184A-184B.)

182A-182B. Physical Measurements (1-1) I, II

Three hours of laboratory.

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, electronic and magnetic fields, and optics. (Formerly numbered Physics 125A-125B.)

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. (Formerly numbered Physics 195A.)

195L. Principles of Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Physics 195.

Experiments in mechanics, wave motion, resonance phenomena using precision airtracks.

196. Principles of Physics (3) I, II

Prerequisites: Physics 195, credit or concurrent registration in Mathematics 151.

This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of electricity and magnetic fields. (Formerly numbered Physics 196B.)

196L. Principles of Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Physics 196.

Experiments in DC circuits, AC circuits, electrical resonance, oscilloscope measurement techniques, and electric and magnetic fields.

197. Principles of Physics (3) I, II

Prerequisites: Physics 196, credit or concurrent registration in Mathematics 152.

This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of wave motion, electromagntic waves, optics, special relativity and atomic and nuclear physics. (Formerly numbered Physics 197C.)

197L. Principles of Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Physics 197.

Experiments in optics, lasers, holography and nuclear counting.

201. Physics of Sound, Hearing and Speech (4)

Three lectures and three hours of laboratory.

Prerequisite: Credit or concurrent registration in Mathematics 103.

Fundamental nature of sound and applications to hearing and speech.

206. 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 206, 496, 596 courses applicable to a bachelor's degree.

**UPPER DIVISION COURSES**

(Revised for Undergraduates)

301. Energy and Conservation (3) I, II

Prerequisite: Completion of Basic Subjects and Foundations of Learning science components of General Education.

Course devoted to the fundamental physical concepts underlying energy, its conversion, utilization and conservation. Not open to physics majors.

302. Nuclear Energy (2)

Prerequisite: Physics 107, or 115A or 180A and 182B, or 197, 197L

Nuclear sources of energy, including solar, geothermal, hydrocarbon, and an introduction to nuclear reactors and their environmental impact.
303. Radiation Physics (3)
One lecture and six hours of laboratory.
Prerequisite: Physics 107, or 115A, or 180B and 182B, or 197, 197L.
Radiation, interaction of radiation with matter, and methods of detection and measurement.

306. Optics (3)
Prerequisites: Physics 197, 197L, or 180B. Mathematics 123 or 152.
Reflection, refraction, matrix methods, dispersion, polarization, double refraction, interference, diffraction, Fourier optics, coherence theory, lasers, and holography with applications to optical instruments, wave propagation, and the nature of light.

311. Electronics for Scientists (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Physics 115A, or 180B and 182B, or 196, 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.
Semester I: Atomic theory of matter, introduction to quantum theory with applications to atomic structure. Semester II: Atomic theory, periodic table, techniques of quantum mechanics. Applications of quantum mechanics to solid state and nuclear physics. (Formerly numbered Physics 354A.)

357. Advanced Physical Measurements (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Physics 197, 197L and credit or concurrent registration in 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, magnetostatics, electromagnetic induction, Maxwell's equations, radiation and wave propagation. (400A: formerly numbered Physics 350B. 400B: formerly numbered Physics 400.)

413. Electronic Instrumentation (2) I
Six hours of laboratory.
Prerequisite: Physics 313.
Transducer principles and applications; theory and design of active filters, modern signal detection and enhancement techniques, instrumentation design.

431A-431B. PSSC and PPC Physics (4-4)
Three lectures and discussions and three hours of laboratory.
Prerequisites: Physics 115B, or 180B and 182B.
A new approach to the teaching of major concepts of physics. Designed for those who plan to teach science. The course is based on materials prepared by national groups of teachers such as the Physical Science Study Committee and the Harvard Project Physics.

460. Thermal Physics (3)
Prerequisite: Physics 354A.
Classical thermodynamics and statistical mechanics. Applications of equilibrium thermodynamics. Introduction to statistical mechanics, including concepts from probability and statistics. Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Applications of statistical mechanics in calculating macroscopic properties of simple systems. (Formerly numbered Physics 354B.)

498A. Senior Research (1) I, II (1-3) 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.

498B. Senior Research (2) I, II (2) I, II (1-3) Cr/NC
Two discussion periods and four additional hours per week to be arranged.
Prerequisite: Physics 498A.

499. Special Study (1-3) I, II (1-3) Cr/NC
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 nuclei.

515. 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.

516A-516B. Theory of Scientific Instrumentation (3-2)
Prerequisites: Physics 311, Mathematics 340A or 530. Physics 516A is prerequisite to 516B.
Linear system analysis using Fourier techniques. Introduction to the stochastic treatment of signals and noise, using concepts from probability and statistics. Optimization of detection systems with respect to signal-to-noise ratio. Applications to spectroscopy. (Formerly numbered Physics 416.)

518. Minicomputer Interfacing (3)
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physics 413.
Theory and practice of minicomputer interfacing and control techniques, including minicomputer architecture on a block-diagram level, bus structure, and I/O signals. Minicomputer language programming and applications to I/O involving instrumentation peripherals. (Formerly numbered Physics 418.)

520. Microprocessor Instrumentation (3)
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physics 413.
The electronics of microprocessor based computer and control systems. Assembly language programming. Interfacing of analog inputs and outputs. The microprocessor as a multipurpose signal processing instrument.

532. Solid State Physics (3) II
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. (Formerly numbered Physics 660.)

561. Nuclear Physics Laboratory (3)
One lecture and six hours of laboratory.
Prerequisites: Physics 303 or 357, Mathematics 123 or 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. (Formerly numbered Physics 685)

570. Relativity (3)
Prerequisites: 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
Prerequisite: Consent of instructor.
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 Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introduction to Political Science (3) I, II</td>
<td>Basic concepts of political science including an introduction to the discipline and representative methods of acquiring political knowledge. Illustrative materials are drawn primarily from the American experience. Completion of both Political Science 101 and 102 will meet all requirements in American institutions. (Formerly numbered Political Science 110.)</td>
</tr>
<tr>
<td>102</td>
<td>Introduction to American Government and Politics (3) I, II</td>
<td>The origin and development, structure and operation of the government of the United States, national, state and local. Completion of both Political Science 101 and 102 will meet all requirements in American institutions. Political Science 102 will meet the requirements in U.S. Constitution and California government. (Formerly numbered Political Science 120.)</td>
</tr>
<tr>
<td>103</td>
<td>Introduction to Comparative Government (3) 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. (Formerly numbered Political Science 130.)</td>
</tr>
<tr>
<td>201</td>
<td>Elementary Statistics for Political Science (3)</td>
<td>Prerequisites: Political Science 101 and 102, and Mathematics 103 or qualification on the Mathematics Placement Examination. Quantitative methods in political science. Tabular and graphic presentation, measures of central tendency, simple correlation and sampling techniques. Not open to students with credit for another course in statistics. (Formerly numbered Political Science 140.)</td>
</tr>
<tr>
<td>296</td>
<td>Experimental Topics (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

(Originally for Undergraduates)

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>Politics and the Arts (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>395</td>
<td>Institute of Public Affairs (1-3)</td>
<td>Study of selected phases of American or Comparative Government. May be repeated with new content and consent of instructor. Maximum credit six units.</td>
</tr>
<tr>
<td>496</td>
<td>Experimental Topics (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 (3) I, II</td>
<td>Analysis of special topics. Admission by permission of instructor. (Formerly numbered Political Science 363.)</td>
</tr>
<tr>
<td>499</td>
<td>Special Study (1-3) I, II</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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</tr>
</thead>
<tbody>
<tr>
<td>301A-301B</td>
<td>History of Western Political Thought (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 contemporary political and social problems involving power, freedom, equality, justice and action. 301A emphasizes Plato, Aristotle, Augustine, Aquinas, and Mansur of Padua. 301B stresses major political theories such as Machiavelli, Hobbes, Locke, and Rousseau. (Formerly numbered Political Science 501A-501B.)</td>
</tr>
</tbody>
</table>

### UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>515A-515B</td>
<td>Research Methods (Field II)</td>
<td>Prerequisite: 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)

(Originally for Undergraduates)

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td>American Institutions (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 requirements in American Institutions. Not open to students with credit in Political Science 102.</td>
</tr>
<tr>
<td>321</td>
<td>State Politics (3)</td>
<td>Public policy making within the context of statewide politics, state-federal and state-local relations, including both official and unofficial institutions. Emphasis on California. Meets the graduation requirement in California Government.</td>
</tr>
<tr>
<td>326</td>
<td>Political Communication (3)</td>
<td>Prerequisite: Political Science 202. Social and attitudinal variables in political behavior. Quantitative research data as used in electoral studies.</td>
</tr>
<tr>
<td>332</td>
<td>Minority Political Thought and Politics in the United States (3)</td>
<td>Prerequisites: Political Science 102. Political attitudes, behavior and thought of selected minority groups.</td>
</tr>
<tr>
<td>334</td>
<td>Politics of the Environment (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.</td>
</tr>
</tbody>
</table>
335. Government and Public Policy (3)
Prerequisite: Political Science 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.

338. The Legislative Process (3)
A detailed analysis of legislatures. Special attention will be devoted to the impact of dynamic factors on formal procedures.

340. Internship in Politics (2-6)
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.

344. Special Problems in American Politics (3)
Prerequisites: Political Science 101 and 102 and three upper division units within Field III.
Intensive exploration of selected issues in the field of American politics.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

352. Urban Politics (3)
Prerequisite: Political Science 101 or 102.
The processes by which social conflicts in American urban areas are represented and regulated. Urban political culture; ecology; group development and activity; power structures, and reform movements are surveyed. The character of the urban political problem and proposed solutions are evaluated.

523. Community Political Behavior (3)
Prerequisite: Political Science 101 or 102.
The study of structure of community power are summarized and critically evaluated. The issues of community conflict are treated both by case study and comparative methods. Examples are drawn primarily from American-urban experience.

530. Political Parties (3)
Prerequisite: Political Science 102 or 320.
A critical analysis of the political party as a part of the process of government; party organization and activities; nominating and campaign methods; theories and functions of the party system; party responsibility. The function of the two-party system in American government.

531. Political Groups and Movements (3)
Prerequisite: Political Science 101 or 102.
Pressure group activity, lobbies, mass movements; factors which explain origins and motivations of group behavior; voting, money, information, protest as political resources; theories of pluralism, power elite and mass society; class and ethnic politics.

536. The American Presidency (3)
Prerequisites: Political Science 101 and 102.
Analysis of principal institutions, functions and problems of the presidency and federal executive branch. Attention given to presidential leadership, staffing, executive-legislative relations and policy formation.

537. The Politics of Bureaucracy (3)
Prerequisites: Political Science 101 and 102.
An analysis of the bureaucracy as an actor in the political system.

Public Law (Field IV)
UPPER DIVISION COURSES
(Reserved for Undergraduates)

345. Constitutional Government (3)
Prerequisites: Political Science 101 and 102.
Constitutionalism as a concept of legal and political philosophy; foundations of American constitutionalism; origin and framing of the American Constitution; philosophy of the American Constitution; application of constitutional principles to contemporary political situations and problems.

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.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

546. Law and the Political System (3)
Forces influencing the making of law; relationship between social and legal change; nature and limits of the judicial function.

547A-547B. American Constitutional Law (3-3)
Prerequisite: Political Science 547A is prerequisite to 547B.
Principles of American constitutional law. Includes judicial review, the federal system, the separation of powers, the nature of selected Congressional powers, and the liberties protected by the constitution against national and state action. Meets the graduation requirement in the United States Constitution.

550. 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.

Comparative Politics (Field V)
UPPER DIVISION COURSES
(Reserved for Undergraduates)

355. Governments of Continental Europe (3)
The political systems of countries of western continental Europe. (Formerly numbered Political Science 556.)

357. Government of England (3)
The structure and functioning of the English parliamentary system with emphasis on present-day political principles and parties. (Formerly numbered Political Science 557.)

359. Government of the Soviet Union (3)
Theory and practice of government in the Soviet Union, with some attention to foreign affairs. (Formerly numbered Political Science 559.)

364. Political Violence in Contemporary Africa (3)
General pattern of nationalism in Africa south of the Sahara. Theories of social change and general features of contemporary African political development. (Formerly numbered Political Science 564.)

370. Political Violence (3)
Prerequisite: Political Science 101, 102 or 103.
Underlying conditions, expressions and consequences of violence within political systems.
422 / Political Science

372. Democracy and Mass Society (3)
Impact of contemporary world on processes and ideology of democracy in various national settings.

374. Special Problems in Comparative Politics (3)
Prerequisites: Political Science 101, 102, 103 and three upper division units within Field V.
Intensive exploration of selected issues in the field of comparative politics.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

555. 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.

558. Comparative Communist Governments (3)
The interrelations between the theory and practice of modern communism as found in representative communist systems.

561. 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.

562. Governments and Politics of the Far East (3)
The internal political structure and foreign policies of China, Japan and Korea.

563. 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.

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.

571. Seminar in Cross-national Studies (3)
Prerequisite: Any upper division course in comparative politics.
Cross-national analysis of institutional norms, attitudes and behavior in relation to government; factors which determine patterns and styles of political participation in contemporary societies.

International Politics (Field VI)
UPPER DIVISION COURSES
(Intended for Undergraduates)

375. International Relations (3)
Political, economic, cultural and social forces responsible for various patterns of international conflict among nation states and other transnational actors. (Formerly numbered Political Science 375A-375B)

376. International Organization (3)
Prerequisites: Political Science 101 and 102.
International organization both as institutions and as processes, including the United Nations, regional organizations, multinational corporations, international stratification, development of international law, international integration and disintegration. (Formerly numbered Political Science 576.)

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. (Formerly numbered Political Science 581.)

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. (Formerly numbered Political Science 582.)

390. Dynamics of Modern International Crises (3)
Prerequisite: Consent of instructor.
The determination and analysis of facts surrounding international crises since World War II; the evaluation of these crises and their effects upon external policies of the United States and the operations of the United Nations. (Formerly numbered Political Science 590.)

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.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Portuguese
In the College of Arts and Letters

Faculty
Chair: Christensen
Associate Professor: Silverman

Offered by the Department of Spanish and Portuguese Languages and Literatures
Minor in Portuguese.
Courses in Portuguese.
Major work in Portuguese is not offered.

Portuguese Minor
The minor in Portuguese consists of a minimum of 15 units in Portuguese, six units of which must be in upper division courses. Recommended: History 552.
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. The first two years of high school Portuguese may be counted as the equivalent of Portuguese 101; three years the equivalent of Portuguese 102. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

LOWER DIVISION COURSES

101. Elementary (4)
Four lectures and one hour of laboratory. Pronunciation, oral practice, reading on Luso-Brazilian culture and civilization, essentials of grammar.

102. Elementary (4)
Four lectures and one hour of laboratory. Prerequisite: Portuguese 101. Continuation of Portuguese 101.

211. Conversation (2)
Prerequisite: Portuguese 102. Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. (Formerly numbered Portuguese 210)

212. Conversation (2)
Prerequisite: Portuguese 211. Continuation of Portuguese 211. (Formerly numbered Portuguese 211)

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)
Oral and written composition in Portuguese, based on models from modern Portuguese and Brazilian literature. (Formerly numbered Portuguese 301A)

302. Advanced Oral and Written Composition (3)
Oral and written composition in Portuguese, based on models from Modern Portuguese and Brazilian literature. (Formerly numbered Portuguese 301B)

499. Special Study (1-3)
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, Kidwell, McColloM, Peiffer, Steinmetz, Turner, Voeks
Chair: Gossage
Associate Professors: Borges, Bryson, R, DeFran, Fenson, Hornbeck, Kaplan, R, Lynn, McCordick, Price, Psomas, Saccuzzo, Sand, Smith
Assistant Professors: Brown, Fragaszy, Lee, Scollay

Offered by the Department
Master of Arts degree in psychology.
Master of Science degree in psychology.
Minor in psychology with the A.B. degree in liberal arts and sciences.

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 non-professional major in psychology and is designed to provide the student with a greater understanding of human behavior as the emphasis in his liberal arts 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 biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

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.

Major. A minimum of 24 upper division units in psychology to include Psychology 350, 360, 370, and 380, (12 units.)

Recommended courses in related fields: Six units in biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

Note: At the Imperial Valley Campus, students are to select 12 units from Psychology 316, 321, 335, 368, 410, 452, 454, 481, 496, 497, 499, and 517. Other psychology courses may be substituted with the approval of the major adviser.

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 biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

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 of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units in psychology to include Psychology 350, 405, 410; and one of the following: 411, 412, 413, 414, 415, 416, 417, 418 or 419; and ten units selected from courses in consultation with the departmental adviser.

Psychology Minor

The minor in psychology consists of 18-26 units selected from one of the following areas:

Experimental: Psychology 101, 210 and 270 or equivalent; Mathematics 103, 14 units of upper division psychology to include Psychology 410 and three of the following: Psychology 316, 411, 414, 416, 417, 419, and 517, 587, (26 units.)

Industrial/Organization: Psychology 101 and 270 or equivalent; Mathematics 103; 12 units of upper division psychology to include Psychology 320, 405, and two of the following: Psychology 321, 322, 326, 342, (21-22 units.)

Personality and Social: Psychology 101 and 210 or 260; 12 units of upper division psychology of which none must be selected from Psychology 330, 340, 350 and 351, (18 units.)

Physiological: Psychology 101, 210, 260 and 270 or equivalent. Mathematics 103; 11 units of upper division psychology to include Psychology 410, 460, and either 413 or 461, (26 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

Preparation for the major. Psychology 101.

Recommended courses in related fields: Psychology 101.

Prerequisites: Psychology 101.

The nature of psychological inquiry: Emphasis on principles and basic experimental data of learning and perception.

Prerequisite: Psychology 101.

Physiological mechanisms underlying the psychological phenomena of sensation, perception, emotion, motivation, learning and psychosomatic disorders.

Quantitative methods in psychology. Measures of central tendency and variability, linear correlation, applications of the normal probability curve, chi-square, and an introduction to statistical inference.
300. Honors Course (1-3) I, II
Refer to Honors Program.

301-S. Contemporary Problems in Psychology (1) S
Lectures open to the public.
A series of six weekly lectures by visiting psychologists on subjects related to current research problems. Reading and reports required of students enrolled for credit. See Class Schedule for specific content. Maximum credit three units.

316. Operant Behavior (3)
Contingencies of reinforcement, stimulus control, response shaping, aversive control, and other basic principles of operant behavior applied to the understanding and modification of human behavior.

320. Personnel and Industrial Psychology (3) I, II
Prerequisites: Psychology 101, and 270 or statistics in another field.
Psychological principles applied to industrial problems of selection, placement and training.

321. Organizational Psychology (3) I, II
Prerequisite: Psychology 101.
The interplay of men and organizations. Psychological literature of the individual and his motivation to work, working in groups, industrial organizations, communications and conflict in industrial organizations.

322. Consumer Psychology (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 101, and a course in statistics.
A review of the research literature and methods relevant to the individual as a consumer in our society. Emphasis on methods of measuring attitudes, values, and behavior of people when functioning as consumers.

326. Principles of Personnel Interviewing (3)
Prerequisite: Psychology 101.
Psychological factors in interviewing, interviewing techniques. Supervised practice in interviewing for purposes of personnel selection, appraisal and development.

330. Developmental Psychology (3) I, II
Prerequisite: Psychology 101.
The psychological development of the normal individual from conception through childhood, adolescence, maturity, and old age. Stress is laid upon the interdependence of the various periods of the individual's life.

335. Psychology of Later Maturity (3) II
Prerequisite: Psychology 101.
The psychological, physiological, and sociological factors influencing behavior in the later years of life.

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. Not open to students with credit in Sociology 440.

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.
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) I, II
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.
Prerequisites: 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. The nature and processes of memory and cognition. Examination of information-processing capacities and processes in perception, learning, memory, and other cognitive activities.

432. Advanced Developmental Psychology (3) I, II
Prerequisite: Psychology 330. Selected topics in the areas of infancy, childhood and adolescence.

446. Advanced Topics in Social Psychology (3)
Prerequisite: Psychology 340. An intensive exploration of selected areas within 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 366. 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 Abnormal Psychology (3)
Prerequisite: Psychology 350. An intensive study and evaluation of research methodology and current literature concerning the neuroses, psychoses, aphasias, ataxia, mental defect, and psychopathology.

454. Mental Deficiency (3) I, II

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.

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 neuropsychology of emotion, sleep, bodily needs, instinctive patterns of behavior, and of learning, brain and behavior disorders.

461. Neural Bases of Behavior (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 260 or six units in the biological sciences. Elements of neurology and psychobiology with emphasis on sensory, central, and motor mechanisms. (Formerly numbered Psychology 581.)

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 (1-4)
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
Prerequisites: 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)

517. Psychology of Verbal Behavior and Learning (3)
Prerequisite: Psychology 210. Analysis of linguistic and cognitive processes within the context of social behavior.
(Formerly numbered Psychology 317.)

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
Prerequisite: Psychology 270. Further study of quantitative methods in psychology with emphasis on methods of correlation, chi-square, and contingency, and an introduction to the analysis of variance.
(Formerly numbered Psychology 470.)

571. Correlational Analysis (3)
Prerequisite: Psychology 270. Quantitative methods in psychology with emphasis on methods of correlation, multiple correlation, partial correlation, and factor analysis.

580. History of Psychology (3) I, II
Limited to psychology majors with senior standing or graduate students. The historical background of modern psychology.

587. Advanced Principles of Learning (3)
Prerequisites: Psychology 210 and 270. The empirical data, basic principles and theoretical positions of major learning theorists.

596. Selected Topics in Psychology (3)
Prerequisites: 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.
Public Administration and Urban Studies

In the College of Professional Studies and Fine Arts

Public Administration and Urban Studies is a member of the National Association of Schools of Public Affairs and Administration

Faculty
Emeritus: Love
Chair: Clapp
Professors: Bigger, Clapp, Gazell, Gilbreath, Gitchoff, Kitchen
Associate Professors: Boasstorm, Hamilton, Rea, Stock
Assistant Professors: Corso, Gupta, Perez, Ross, Walshok

Offered by the School of Public Administration and Urban Studies

Master of City Planning degree.
Master of Public Administration degree.
Master of Science degree in criminal justice administration.
Master in criminal justice administration with the B.S. degree in applied arts and sciences.
(Major in public administration with the A.B. degree in applied arts and sciences. Minor in public administration.

Public Administration Minor

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."

Minor is not required with this major.

Preparation for the major. Business Administration 180, 210A-210B or 212; Economics 101 and 102; Political Science 102; Public Administration 220; and a course in statistics (3 units). (22 units)

Major. A minimum of 36 upper division units to include Public Administration 301, 310 or 312 or 315, 330, 340, 450, 460, 497 or 498, and 15 units selected with the approval of an advisor from the Public Administration faculty. Within this program, students may emphasize specialization, unity of command, oversight. Major in public administration with the A.B. degree in applied arts and sciences. Minor in public administration.

Public Administration Major

The minor in public administration consists of 24 units to include Political Science 102 and a course in statistics or Business Administration 180, Public Administration 301, 310 or 312 and 315, 330, 340, and two additional courses with the consent of a public administration 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.

Certificate in Public Administration

This certificate is designed primarily for persons who hold administrative or managerial experience or for those who seek to prepare for such responsibilities. Previous academic degree, candidacy will be established by the director of the program. The awarding of the grade point average of 2.5 (C-)

For further information, consult the director, School of Public Administration Certificate Program.

The department's undergraduate courses fall into three main areas:

1. Criminal justice. Most relevant are courses numbered Criminal Justice Administration 301, 310, 320, 321, 330 and 351.
2. Public administration. Most relevant are courses numbered Public Administration 301, 305, 310, 312, 330, 340, 341, 450, 460, 462, 530, 531, 540, 570 and 586.
3. Urban studies. Most relevant are courses numbered Public Administration 320, 510, 512 and 520.

LOWER DIVISION COURSE

220. Administrative Report Writing (3)

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.

UPPER DIVISION COURSES

(Intended for Undergraduates)

301. Concepts and Issues in Public Administration (3)

Theory and practice of governmental administration in differing environments; role of administrators in public policy; issues facing administrators, techniques of administration.

305. Studies in Public Administration (1-3) I, II

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 and consent of instructor.

310. Management of Urban Governments (3) I, II

Problems of local units of government in the urban environment. Organization and function of local agencies. Emphasis on California.

312. Management of State Governments (3) I, II

Administrative and constitutional problems of state management in the American federal system. Emphasis on California.

315. Management of the Federal Government (3) I, II

Prerequisite: Public Administration 301.

Problems in the administration of the federal government: for example, leadership, specialization, unity of command, oversight.

320. Introduction to Urban Planning (3) I, II

An introduction to community planning: regional, county, and city. Consideration of the Master Plan, including its purposes, contents, and method of adoption.

330. Public Personnel Administration (3) I, II

Analysis of personnel problems. Supervision and management of public employees and public organizations in an age of change.

340. Administrative Behavior (3) I

Social, psychological, and behavioral theories of organization; concepts of administrative leadership; organization and the individual; emphasis on governmental organizations.

341. Administrative Management (3) I, II

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.

350. Contemporary Urban Issues (3)

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.

450. Fiscal and Budgetary Policy (3) I, II

Prerequisites: Economics 101 and 102, Public Administration 301.

Policies of fiscal administration and budgeting; political implications of the governmental budget process; revenue, debt, and treasury management; the functions of accounting and financial reporting. (Formerly numbered Public Administration 550.)
460. Administration and Public Policy Development (3) I, II
Process of formulating public policy with emphasis on the role of public agencies.

462. Selected Topics in Public Affairs (3)
Selected topics in the administration of public policy and problems of public administrative organization. May be repeated with new content. Maximum credit six units.

463. Science, Technology and Public Policy (3) I, II
Scientific and technological innovations currently being introduced into public organizations and their impact on the public policy-making process, and effects of government regulations and policy on scientific and technological developments in society.

466. 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. Admission by permission of instructor.

498. Internship in Public Administration (2-6) I, II Cr/NC
Prerequisites: Public Administration 301, 341 and all lower division required courses; credit or concurrent registration in Public Administration 330 or 340 and 450; senior standing and a "B" (3.0) average in the major.
Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences.

499. Special Study (1-3) I, II
Prerequisite: Twelve upper division units in public administration.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510. Intergovernmental Relations in the United States (3) II
Prerequisite: Public Administration 310 or 312 or 315.
Constitution, political and administrative characteristics of American federalism, including regionalism, interstate compacts, and grants-in-aid.

512. The Metropolitan Area (3) I, II
Prerequisite: Public Administration 310 or 312.
Problems of government and administration arising from population patterns and physical and social structures of metropolitan areas.

520. Decision Making in the Urban Community (3) I, II
Prerequisite: Public Administration 310.
Processes of decision making in the management of urban communities.

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) I, II
Prerequisite: Public Administration 330.
Historical development, legal basis and organizational implications of governmental employer-employee relations with 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.

570. Administrative Law (3) II
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. (Formerly numbered Public Administration 470.)

580. Comparative Public Administration (3) II
Prerequisite: Public Administration 301.
Administrative organization and process of selected foreign and American governments. Analysis of the cultural basis of administrative systems.

GRADUATE COURSES
For graduate courses in Public Administration and Urban Studies and City Planning, refer to the Graduate Bulletin.
**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, 466, 475, 485, 486, 496, 548, 549, 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) II

Study of leisure and its impact on contemporary life; issues affecting recreation in today's urbanized society.

107. Recreation 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, social recreation, games, 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 week-end outings.

205. Wilderness and the Leisure Experience (3) I, II

Use and abuse of natural resources for recreational purposes. First-hand 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.

Prerequisite: Recreation 107.

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

Prerequisites: Credit or concurrent enrollment in Recreation 107 and 275 hours experience in recreation leadership. Observation and participation in community recreation leadership. Practical experience in a variety of recreational settings. Minimum of one hour per week in class plus eight hours per week at an agency.

**UPPER DIVISION COURSES**

(Entended for Undergraduates)

300. Honors Course (1-3) I, II

Refer to Honors Program.

340. Conduct of Recreational Sports (3) I, II

Two 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.

361. Scientific Foundations of Recreation Therapy (3) I, II

Survey of medical and psychiatric pathology and terminology. (Formerly numbered Recreation 350.)

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. (Formerly numbered Recreation 352.)
452. Clinical Methodology of Recreation Therapy (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Recreation 351, 361, 371.
Integration and application of clinical principles and therapeutic procedures. Emphasis on methodology and refinement of skills.

464. Supervision of Recreation Agencies (3)
Prerequisite: Recreation 101.
Interagency relations, personnel policies and procedures, volunteer coordination, supervisory techniques, community organization, public relations and fund-raising in public, private and commercial settings.

465. Administration of Recreation Systems (3)
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.

475. Commercial Recreation 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. Non-Urban Recreation Resources (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.

486. Interpretative Techniques in Outdoor Recreation (3) I, II

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. 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.
Prerequisite: Completion of all lower division recreation classes required in student's emphasis, and completion of both Standard and Advanced Red Cross Certificates in First Aid by end of internship.
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. (Formerly numbered Recreation 448)

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. (Formerly numbered Recreation 449)

575. Management of Recreation Areas and Facilities (3) I, II
Prerequisite: Recreation 465.
Role of the recreation administrator in the planning, acquisition, development, financing, operating and staff and maintaining of recreational lands, waters, and structures. Use of natural and man-made resources in the environment. (Formerly numbered Recreation 475)

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
in the College of Arts and Letters

Faculty
Chair: Downing
Professors: Anderson, Downing, Friedman, Jordan
Associate Professors: Khalil, Sparks, Swyhart
Lecturer: Hamdoun

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 semesters 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."

Major. A minimum of 24 upper division units in religious studies to include either Religious Studies 301 or 305, at least three units from Western Religious Traditions below, at least three units from Eastern Religious Traditions below, and at least six upper division units in religious studies, and 12 units from one of the areas listed below:

Western Religious Traditions: Religious Studies 310, 312, 314, 316, 318, 330, 340, 520
Eastern Religious Traditions: Religious Studies 501, 503, 506, 508

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 areas listed below:

Western Religious: Religious Studies 301 or 305, 310, 312, 314, 316, 318, 330, 340, 520
Eastern Religious: Religious Studies 501, 503, 506, 508

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. (Formerly numbered Religious Studies 100.)
201. Ways of Understanding Religion (3)
Examples of major approaches to study of religious phenomena, and central issues in methodology. (Formerly numbered Religious Studies 200.)

UPPER DIVISION COURSES
(3) I, II
206. 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 206, 496, 596 courses applicable to a bachelor's degree.

300. Honors Course (1-3) I, II
Refer to Honors Program.

301. Hebrew Scriptures (3) I, II
Prerequisite: Three units of religious studies.
Prerequisites: Three units of religious studies. Problems of composition and historical significance in the context of religious meanings of the scriptures known to Jews 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.
Prerequisites: Three units of religious studies. The problems of composition and historical significance in the context of religious meanings.

310. Greek and Latin Fathers (3)
Prerequisite: Three units of religious studies.
Readings in patristic thought from Ignatius of Antioch through Augustine.

312. The Eastern Orthodox Tradition (3)
Prerequisite: Three units of religious studies.
Major doctrines, practices and developments in the Eastern Church from the Patristic period to the present.

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 views of man. May be repeated with different content. See Class Schedule for specific content. Limit of nine units of any combination of 330, 430, 530 courses applicable to a bachelor's degree.

340. Islam (3)
Prerequisite: Three units of religious studies.
Major doctrines, practices and developments from the time of Mohammed to the present.

350. Dynamics of Religious Experience (3)
Prerequisite: Three units of religious studies.
Chief data and major approaches in the study of individuals' religious experience and the symbolic structure of devotional performance.
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. (Formerly numbered Religious Studies 353A-353B.)

354. Religion and Society (3)
Prerequisite: Three units of religious studies.
Theological and religious interpretations of the social dimension of human existence. Critical investigation of science inquiry into traditional and contemporary forms of religious life. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units. (Formerly numbered Religious Studies 353A-353B.)

355. Religion, Literature and the Arts (3)
Prerequisite: Three units of religious studies.
The relations between religion, literature and the arts in major cultural traditions.

356. Religion and Science (3)
Prerequisite: Three units of religious studies.
A critical exploration of the relation of science to religious conceptions of human nature and destiny.

357. 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.

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 (3-12)
Prerequisite: Twelve upper division units in religious studies and consent of instructor. Seminar workshop and project in the comparative study of religious practices, doctrines, themes (such as religious ethics, mysticism), phenomenological studies in religions, etc.

499. Special Study (1-3)
Prerequisite: Twelve upper division units in religious studies. Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

501. Religions of India (3)
Prerequisite: Three units of religious studies. Phenomenological studies in the major religious traditions of India, especially Hinduism and Buddhism.

502. 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.

503. Scriptures of India (3)
Prerequisite: Three units of religious studies. The religious and philosophical modes of thought and ways of life in India as reflected in major scriptures; reading and analysis of primary texts in translation.

504. Scriptures of Far Eastern Traditions (3)
Prerequisite: Three units of religious studies. The religious and philosophical modes of thought and ways of life in east Asia, especially 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.

520. Religious Consciousness in American Society (3)
Prerequisite: Three units of religious studies. Critical investigation of the traditions which have helped to shape religious pluralism within American society.

524. Religion and Public Education (3)
Prerequisite: Valid teaching credential or enrollment in a credential program. Examination of federal and state legislation and guidelines of boards of education affecting the teaching about religion in the public schools. Teaching materials and curriculum will be evaluated in the light of these contexts.

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.
### Russian
In the College of Arts and Letters

**Faculty**
- Chair: Kozlik
- Professors: Dukas, Fetzer, Kozlik

**Offered by the Department of Germanic and Slavic 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. (20 units)

**Foreign Language Requirement.** The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

**Major.** A minimum of 24 upper division units in Russian to include Russian 301, 302, 305A-305B, and 12 units in period literature, or six units in period literature and six units in Russian linguistics.

### 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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>101. First Course in Russian</td>
<td>(4) I, II&lt;br&gt;Four lectures and one hour of laboratory.&lt;br&gt;Pronunciation, oral practice, reading in Russian literature, minimum essentials of grammar. Not open to students who have completed three years of high school Russian.</td>
</tr>
<tr>
<td>102. Second Course in Russian</td>
<td>(4) I, II&lt;br&gt;Four lectures and one hour of laboratory.&lt;br&gt;Prerequisite: Russian 101 or two years of high school Russian.</td>
</tr>
<tr>
<td>201. Third Course in Russian</td>
<td>(4)&lt;br&gt;Prerequisite: Russian 102 or three years of high school Russian.</td>
</tr>
<tr>
<td>202. Fourth Course in Russian</td>
<td>(4) I, II&lt;br&gt;Prerequisite: Russian 201.</td>
</tr>
<tr>
<td>211. Conversation</td>
<td>(2) I&lt;br&gt;Prerequisite: Russian 102 or three years of high school Russian.</td>
</tr>
<tr>
<td>212. Conversation</td>
<td>(2) II&lt;br&gt;Prerequisite: Russian 201 or 211, or four years of high school Russian.</td>
</tr>
<tr>
<td>296. Experimental Topics</td>
<td>(1-4)&lt;br&gt;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</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>300. Honors Course</td>
<td>(1-3) I, II&lt;br&gt;Refer to Honors Program.</td>
</tr>
<tr>
<td>301. Advanced Grammar and Composition</td>
<td>(3)&lt;br&gt;Prerequisites: Russian 202 and 212. Advanced grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered Russian 201A.)</td>
</tr>
<tr>
<td>302. Advanced Grammar and Composition</td>
<td>(3)&lt;br&gt;Prerequisites: Russian 202 and 212. Advanced grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered Russian 201B.)</td>
</tr>
</tbody>
</table>
305A-305B. Survey of Russian Literature (3-3)
Russian literature from its beginnings, with emphasis on the nineteenth and twentieth centuries. (Formerly numbered Russian 311A-311B.)

305. Selected Slavics (3)
One of the non-Russian Slavic languages or literatures selected for intensive study. Maximum credit six units in each language. See Class Schedule for specific content.

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 (3)
Poetry, prose and drama of the twentieth century.

570. Slavic Linguistics (3)
Prerequisite: Russian 202 and 212.
Structural and comparative Slavic linguistics.

580. Russian Syntax and Stylistics (3)
Prerequisite: Russian 301 and 302.
The structure of contemporary Russian.

581. Russian Phonetics and Morphology (3)
Prerequisite: Russian 202 and 212.
The sounds and forms of contemporary Russian.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Emphasis in Africa and the Middle East

The adviser for this emphasis is Dr. James N. Kerri, Afro-American Studies.

Preparation for the major. History 105, 106; Humanities 157 and/or 158; and three to six units selected from Anthropology 101, 102; Comparative Literature 270A, 272A; Economics 101, 102; Geography 101, 102; and Humanities 130, 131. (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. French 101, 102, 201, or Hebrew 101, 102, 201, or Portuguese 101, 102. An equivalent level of competency in any other language judged appropriate by the Committee on Africa and the Middle East is acceptable. Competency will be determined by examination.

A minor is required with the major. Students in this major may wish to consider a minor in Jewish Studies.

Major. A minimum of 30 upper division units, selected with the consent of the adviser, to include at least 15 units in anthropology, economics, geography, history, political science or religious studies, or a combination of 15 units in art, comparative literature and religious studies. Required courses: Anthropology 449 or 474 or 479; Economics 469; Geography 335; six units from History 473A, 473B, 574, 475A and 475B; and Political Science 364 or 563. In addition, the following courses are recommended: Anthropology 350, 424, 426, 429, 522; Art 568, 568A, 569, 570; Comparative Literature 535; Economics 365, 489; History 508, 509A-509B; Political Science 381, 561; Religious Studies 312, 330, 340.

Emphasis in Environment

The advisers for this emphasis are 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.

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 of catalog on "Graduation Requirements."

Major. A minimum of 30 upper division units to include 12 units selected from Anthropology 452 or 453, Geography 370 or 371, Political Science 334 or 335; and 18 units selected from Anthropology 428; Economics 452, 453, 454, 458, 555; Geography 354, 370, 371, 401, 570, 573, 574, 575, 576; History 340, 340C, Political Science 334, 335; Sociology 406, 508, 650, 557. Recommended: Biology 320 or 420, 525, 528; Chemistry 301; Engineering 360; Geology 303; 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 requirements for the Secondary Waiver Credential in Social Science are as follows:

1. A major in Social Science for the A.B. degree.
2. Satisfactory completion of 33 units selected from courses in the following categories. (These courses may also be used to satisfy requirements for the major.) At least one course in U.S. History must be selected from these categories.

A. Environment and Social Organization: their physical environment, origins of primitive societies and the development of social institutions. Nine units selected from the following courses: (No more than six units from one department)

- Afro-American Studies: 331, 470, 471A-471B.
- American Indian Studies: 303, 440, 460.
- Political Science: 354.

B. Personality and Social Control: the Individual and Society. Nine units selected from:

- Afro-American Studies: 380, 446.
- American Indian Studies: 400, 450.
- Anthropology: 350, 426, 429, 531, 532.
- Geography: 350.
- Mexican-American Studies: 390, 481.
- Political Science: 301A, 305, 335, 356, 375, 522, 530, 536, 548, 655, 558, 567.
- Women's Studies: 325, 360, 370, 380.

C. Economic Organization and Contemporary Social Problems: Growth and Modernization. Nine units selected from the following courses: (No more than six units from one department)

- Anthropology: 427, 429.
- Geography: 350, 354, 521, 570.
- Mexican-American Studies: 301, 303, 390.
- Political Science: 302, 332, 346, 370, 380, 531, 566, 579.
- Psychology: 320, 321, 340, 342, 347, 454, 455.
- Sociology: 404, 525, 537, 547, 550.
- Women's Studies: 330.

D. The Social Science as Science: Three units selected from the following:

- Anthropology: 301, 302, 304, 560.
- Economics: 311, 347.
- Geography: 585.
- History: 425, 430.
- Political Science: 315, 325, 497, 515A.
- Social Science: 496, 580.

E. Three units of electives.

15-80017
LOWER DIVISION COURSE
101. Logic of the Social Science (3)
Introduction to the process of evaluation, conceptualization and development of methods
common to anthropology, economics, history, geography, political science and sociology.
Problems in the use of evidence, forming of hypotheses, implementation of statistics and
organization of research through models. (Formerly numbered Social Science 158)

UPPER DIVISION COURSE
498. Senior Seminar (3)
(Intended for Undergraduates)
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.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)
580. Topics (3)
Special topics appropriate to an interdisciplinary approach. Reading, observation and
evaluation of research material and current scholarship in topics under consideration.
Whenever possible taught by team of instructors representing two of six social science
disciplines of anthropology, economics, geography, history, political science and sociology.
See Class Schedule for specific content. Maximum credit six units. Social Science 580 can
be used only as the three-unit course in the fourth field.

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: Baily, Clary, Maxwell, Morgan, Ontell, Pepper, Watson, Witte
Director: Harbert
Associate Director: Griffin
Professors: Brennen (Undergraduate Coordinator), Buller, Griffin, Harbert, Haworth,
Ishikawa, Kahn, Kelley, Kukkonen (Coordinator of Field Instruction), Lee, Reichert, K.
Stanford, Stumpf
Associate Professors: Anderson, F., Davis, Ellis, Gudnitz, Herman, Riehm, Sardinas,
Siman, Sprague, Valle
Assistant Professors: Ajemian, Cohen, Harris, Jones, Pritchard, Raymer, Ruemthart,
Schmidt, Sukato
Lecturers: Battso, Gaynor, Kim, Means, Ortiz, Reichert, E., Ruby, Spielberg
Appointments Under Grants from Outside Funds. Lecturers: Anderson, D., Logan, Yu

Offered by the School of Social Work
Major in social welfare with the A.B. degree in liberal arts and sciences.
Major in social welfare with the A.B. degree in applied arts and sciences.
Minor in social welfare.
Master of Social Work
Human Services Paraprofessional Certificate

Programs and Objectives
The School of Social Work offers a two-year graduate curriculum leading to the Master of
Social Work degree under approval granted by the Board of Trustees of The California State
University and Colleges in May 1963. The curriculum was developed in close cooperation
with the Council on Social Work Education and was fully accredited by its Accreditation

The School of Social Work is committed to ethnic and cultural diversity in its student
body, its faculty, the populations it serves and the unique concerns on which it focuses.

The objectives of the School of Social Work at San Diego State University are to prepare
students with the essential knowledge, philosophy and basic skills for their responsible
practice in the profession of social work. In order to achieve these objectives, the School will
assist students to develop a philosophy which recognizes individual human welfare as the
purpose and goal of social policy; to acquire attitudes and values that will permit the
development and maintenance of professional relationships and professional standards; to
develop the discipline and self-awareness essential to the professional social worker; to
attain a level of competence necessary for professional practice; to acquire knowledge in
the continued methods of research in social work; and to accept responsibility for the continued
development of their competence in the practice of social work.

Social Welfare 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, this major serves broad educational purposes based on
understanding of contemporary social welfare programs and prepares for professional social
work education at the graduate level. The major prepares for immediate employment in
those social work positions which do not require professional social work education on a
graduate level.
Preparation for the major: Anthropology 102; Biology 100; Economics 100; Health Science 101; Psychology 101; Sociology 101; Social Welfare 110 or Sociology 110 or Mexican-American Studies 110B; Social Welfare 120. (24 units)

Foreign Language Requirement for Liberal Arts and Sciences only. 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 of catalog on "Graduation Requirements." 

Major (Undergraduate): A minimum of 45 upper division units, in a prescribed pattern to include Health Science 401* and 490; Social Welfare 350, 360, 370A-370B, 381, 483A-483B, 489A (6 units), 489B (6 units), 491, and three units of electives in social welfare or health science.

* Prerequisite waived for social welfare majors.

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 welfare for selection and arrangement of courses.

Social Welfare Minor

The minor in social welfare consists of 24 units to include Social Welfare 110 or Sociology 110 or Mexican-American Studies 110B, 120, Psychology 101; Sociology 101; and Social Welfare 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 indemnified ex-offenders and ex-substance abusers who seek paraprofessional positions in human services. A certificate in who:

(a) do not meet the prerequisite requirements for a major in social welfare 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 or able to complete non-professional offerings which are part of the regular degree program.

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 Welfare Program is established by the Coordinator of the Undergraduate Social Welfare 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 Welfare 350, 360, 370B, 381, and 496 or 499. Another professional discipline, with consent of coordinator, may be taken in the on-campus program. All units taken in Social Welfare may be applicable to the Social Welfare major.

For further information, consult the Coordinator, Undergraduate Social Welfare Program.

LOWER DIVISION COURSES IN 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. Not open to students with credit in Sociology 110 or Mexican-American Studies 110A-110B.

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 welfare 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 the abilities to develop and sustain interpersonal relationships. This course not open to students with credit in Family Studies and Consumer Sciences 135.

296. Experimental Topics (1-4) Cr/NC

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 SOCIAL WELFARE

(Intended for Undergraduates)

350. Cultural Pluralism (3) I, II

Understanding of the American society as a culturally pluralistic social process and an understanding of social work as a culturally directed profession with emphasis on the concept of cultural identification created by one's values, ideologies, knowledge and behavior.

351. Perspectives on Life in Urban Communities (3) I, II

Characteristics and processes of contemporary urban communities as they shape the life-styles of people. Urban communities examined in terms of their functional and dysfunctional capacities for meeting human needs.

360. Perspectives on Human Behavior (3) I, II

Prerequisites: Psychology 101 and Sociology 101. Interdisciplinary, comparative, and critical approach to explanatory theories of human behavior. Focus on interrelatedness of factors that affect the nature and quality of human life and linkage to the social welfare of individuals, families and communities. (Formerly numbered Social Welfare 360A)

370A. Social Policies and Social Issues (3) I, II

Prerequisites: Social Welfare 120. Major social forces and institutions as they relate to and determine social policy emphasizing social welfare services in an industrialized society.

370B. Social Provision and Program Evaluation (3) I, II

Prerequisites: Social Welfare 370A. Issues and dilemmas related to the provision of social services, and analysis of social program services. Evaluating effectiveness and efficiency of social welfare services and programs. Social work services.

381. Seminar in Basic Skills in Social Work Practice (3) I, II

Prerequisite: Junior standing. Helping skills in social work practice make use of assessment and interviewing theory. Addressing written, verbal, interpersonal skills with individuals, small groups and communities with regard to assessment in social work practice.

382. Seminar in Intermediate Skill Development for Social Workers (3) I, II

Prerequisite: Social Welfare 381. Students are expected to participate in simulation of social work practice situations, activities, and skills. Presentation of research and theory will be interwoven with structured classroom experiences.

483A-483B. Integrating Seminar (3-3) I, II

Prerequisites: Health Science 401; Social Welfare 370B and a 2.0 grade point average in all junior level social welfare courses required in the major. Concurrent registration in Social Welfare 489A for 483A. Concurrent registration in Social Welfare 489B for 483B. The integration of social work theory, principles and practice techniques.

489A-489B. Field Experience in Social Welfare (3-9, 3-9) I, II

Prerequisites: Health Science 401; Social Welfare 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 welfare major. Concurrent registration in Social Welfare 489A for 489B. A minimum of twelve units in Social Welfare 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
Prerequisites: Health Science 401; Social Welfare 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, interpreting, and analyzing data. (Formerly numbered Social Welfare 490A)

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)

520. Seminar in Contemporary Issues and the American Family (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing in other programs of study and unclassified standing with the consent of the director.
Explores and analyzes a myriad of areas within the context of change of the family as a social institution. The family is viewed systemically. Such factors as industrialization, cybernetics and the changing nature of the marital bond are included.

530. Seminar in History of Social Work (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with the consent of the director.
Development of social welfare institutions as a function of industrial society in America. Historical trends in politics, economics, migration, and life styles are examined in relation to the development of social institutions for responding to human need including the development of the profession of social work.

540. Seminar in Social Effects of the Legal Process (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing or unclassified standing with the consent of the director.
Structure and functions of law as it bears upon such groups as defendants in criminal proceedings, recipients of welfare programs, conservatoires in mental health hearings. 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 welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with the 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 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 and social welfare. 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 SOCIAL WORK
Refer to the Graduate Bulletin.
Sociology

LOWER DIVISION COURSES

101. Introductory Sociology (3) I, II
This course is prerequisite to all upper division courses in sociology. Basic theoretical concepts, 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.

105. Sociological Laboratory I (1)
Three hours of laboratory. Prerequisite: Must be taken in conjunction with a three-unit lower division course. Application of experimental, quantitative and qualitative methods to sociological problems and the use of experimental, social simulation teaching techniques.

110. Contemporary Social Problems (3) I, II

164. Sociological Analysis (3)
Prerequisite: Sociology 101. Development and use of fundamental procedures of sociological investigation.

201. Elementary Social Statistics (3) I, II
Prerequisites: Sociology 101 and Mathematics 103 at this University or 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. Not open to students with credit in Sociology 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

300. Honors Course (1-3)
Refer to Honors Program.

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 and qualitative methods to sociological problems and/or the use 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, bureaucracies, control and organizational change.

424. Social Stratification (3) I, II
Prerequisite: Sociology 101. Theories of stratification in society, studies in the American stratification system and its implications for possible social mobility. Introduction to the study of stratification focusing on the individual, groups, social class, and social structure.

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 social researchers and the process of social interaction (not open to students with credit in Psychology 340).

450. Quantitative Methods in Social Research (3) II
Prerequisite: Sociology 201. The use of parametric and nonparametric techniques in the analysis of social research including analysis of variance, covariation, multiple and partial correlation 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 design, scaling techniques and experimental designs.

465. Qualitative Research Methods (3)
Prerequisite: Sociology 201. Examination of field research methods including interviewing, observation, participant observation, case studies. Problems in research design, gaining and maintaining rapport, and analysis and interpretation of data.

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 bachelor's degree.
### UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>506</td>
<td>Modernization of Traditional Societies (3)</td>
<td>Sociology 101</td>
<td>Examines theories of social change relative to industrialization and urbanization of preindustrial societies. Comparative study of institutional and social-psychological consequences of industrialization, utilizing historical and contemporary study of macrosocial change.</td>
</tr>
<tr>
<td>507</td>
<td>Sociology of the Future (3)</td>
<td>Sociology 101</td>
<td>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.</td>
</tr>
<tr>
<td>510</td>
<td>Sociology of Conflict (3)</td>
<td>Sociology 101</td>
<td>Conflict as a social process: background, forms and consequences at the interpersonal, intergroup, and international levels from a sociological frame of reference. Major theories of conflict.</td>
</tr>
<tr>
<td>511</td>
<td>Sociology of Deviance (3) I, II</td>
<td>Sociology 101</td>
<td>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.</td>
</tr>
<tr>
<td>512</td>
<td>Sociology of Deviance (3)</td>
<td>Sociology 101</td>
<td>Sociology and criminal justice; analysis of methods of penal discipline, parole and probation; programs of prevention.</td>
</tr>
<tr>
<td>513</td>
<td>Criminology and Penology (3) I, II</td>
<td>Sociology 101</td>
<td>The extent and characteristics of crime; consideration of physical, mental, economic, and sociological causes of crime; study of methods of control and prevention; with special attention to the protective and remedial measures offered by the school, home, juvenile court, and social agencies.</td>
</tr>
<tr>
<td>514</td>
<td>Juvenile Delinquency (3) I, II</td>
<td>Sociology 101</td>
<td>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, and social agencies.</td>
</tr>
<tr>
<td>515</td>
<td>Societal Processing of Criminals and Delinquents (3)</td>
<td>Sociology 101</td>
<td>Sociological features of social processing of criminals and delinquents in terms of sociological theory, concepts, and research.</td>
</tr>
<tr>
<td>516</td>
<td>Sociology of Punishments and Corrections (3)</td>
<td>Sociology 101</td>
<td>Historical, theoretical, and empirical analyses of punishment and rehabilitation, analysis of contemporary correctional settings, and examination of prison populaions and alternatives to prison.</td>
</tr>
<tr>
<td>518</td>
<td>Topics in Comparative Societies (3)</td>
<td>Sociology 101</td>
<td>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.</td>
</tr>
<tr>
<td>520</td>
<td>Industrial Sociology (3) I, II</td>
<td>Sociology 101</td>
<td>Group relationships within economic organizations. Problems of leadership, morale and conflict. Some attention to the sociology of occupations and professions.</td>
</tr>
<tr>
<td>521</td>
<td>Sociology of Occupations and Professions (3) I, II</td>
<td>Sociology 101</td>
<td>Division of labor, status ranking of occupations, authority structures, occupational and professional organization, occupational socialization, problems of identity and role conflict.</td>
</tr>
<tr>
<td>522</td>
<td>The Sociology of Mental Illness (3) I, II</td>
<td>Sociology 101</td>
<td>The social definition, sociology and control of mental illness across various societies. The implications of social differentiation, stratification and urbanization upon the incidence.</td>
</tr>
<tr>
<td>523</td>
<td>Minority Group Relations (3) I, II</td>
<td>Sociology 101</td>
<td>Analysis of racial and ethnic discrimination. Analytical theories of ethnic prejudice. Analysis of projections in selected areas such as family, technology, work and leisure.</td>
</tr>
<tr>
<td>524</td>
<td>Medical Sociology (3) I, II</td>
<td>Sociology 101</td>
<td>A sociological analysis of health and medical institutions. Cultural factors in connections and roles of personnel, health and healing. Social structure of medical facilities and the role of personnel in such institutions. Relation of illness to income, housing and other socioeconomic factors.</td>
</tr>
<tr>
<td>525</td>
<td>Sociology of Aging (3) I, II</td>
<td>Sociology 101</td>
<td>Examination of the factors affecting the aging process. Cross-cultural comparisons of occupational, educational, familial, and recreational and political opportunities for the aging.</td>
</tr>
<tr>
<td>526</td>
<td>Sociology of Death (3) I, II</td>
<td>Sociology 101</td>
<td>Examination of social psychological concepts and theories of the process of dying. Comparative study of death and dying with emphasis on social, psychological, and social organization of death and dying in our society. Consideration of contemporary social-ethical issues surrounding dying in our society.</td>
</tr>
<tr>
<td>530</td>
<td>Sex Roles in Contemporary Societies (3) I, II</td>
<td>Sociology 101</td>
<td>Male-female relationships in occupational, educational and familial settings viewed historically and cross-culturally. Changing concepts of femininity and masculinity.</td>
</tr>
<tr>
<td>531</td>
<td>The American Family and Its Alternatives (3) I, II</td>
<td>Sociology 101</td>
<td>Analysis of landmark sex research and pornography in the United States and in selected areas. Changing concepts of femininity and masculinity in society. Analysis of contemporary family life in the United States and in selected areas.</td>
</tr>
<tr>
<td>532</td>
<td>The Family in Cross-Cultural Perspective (3)</td>
<td>Sociology 101</td>
<td>Comparative study of selected family systems in the past and present with parafamily forms in intentional communities of the 19th century. Compared with contemporary experimental communities and family organization.</td>
</tr>
<tr>
<td>537</td>
<td>Political Sociology (3)</td>
<td>Sociology 422</td>
<td>Social organization of political processes. Power and authority, social class, primary social change and other sociological factors considered in their relationships to political processes.</td>
</tr>
</tbody>
</table>
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.  

545. 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.  

546. 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.  

547. Sociology of Social Movements  
   (3)  
   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.  

548. Small Groups  
   (3)  
   Prerequisite: Sociology 440.  
   Processes, morale and organization of small groups; their role in society and institutions  
   such as industry, military, recreation and education; recent studies and methods of research.  

550. 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.  

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.  

563. The Logic of Sociological Inquiry  
   (3)  
   Prerequisite: Sociology 201.  
   Systematic overview and analysis of explanation in the social sciences and history with  
   emphasis on sociology. Problems of applying the natural scientific method to the social  
   sciences, interpretation of meaning and objectivity.  

596. Current Topics in Sociology  
   (1-3) I, II  
   Prerequisite: Sociology 101.  
   Selected specialized, controversial or currently relevant topics in sociology. Maximum  
   opportunity provided for student initiative in determining course content and procedures.  
   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. (Formerly numbered Sociology 511.)
Spanish

In the College of Arts and Letters

Faculty
Emeritus: Baker, Brown, Sonder
Chair: Christensen
Professors: Barrera, Case, Christensen, Head, Jimenez-Vera, Lemus, Segade, Walsh
Associate Professors: O'Brien, Santalo, Silverman, Talamantes, Weeter
Assistant Professor: 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.

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. (20 units)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 24 upper division units in Spanish to include Spanish 301, 302; and 18 units selected from one of the following areas of specialization: Hispanic Literature: Spanish 305A-305B, 306A-306B; and six units of electives. (48 units)

Spanish Language: Six units selected from Spanish 305A, 305B, 306A, 306B; Spanish 490, 548 or 549; and six units of electives. (36 units)

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 under the College of Education.

This major may be used by students in teacher education as an undergraduate major for departmental adviser in Spanish is required for the degree; students seeking the credential must complete a minor.

Preparation for the major. Spanish 101, 102, 201, 202, 211 and 212. (20 units)

Major. A minimum of 21 upper division units in Spanish to include Spanish 301, 302; six Spanish 305A-305B, 306A-306B, 490, 548; two courses from 440, 441 or 442; and three units of upper division electives from any of the department offerings. (45 units)

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 Interpretation in Spanish
The Department of Spanish and Portuguese Languages and Literatures offers a Certificate in Translation and Interpretation. The Certificate requires 15 units in Spanish dealing with problems of translation and interpreting and includes both translation and interpretation from Spanish into English and from English into Spanish.

Prospective candidates for the Certificate must meet the requirements for a minor in Spanish and acquire a bilingual facility (written and oral) in English and Spanish by completing with a GPA of 3.0 or better Spanish 305W. Students must also complete Spanish 301, 302 and 490, or pass a competency test in Spanish.

After meeting the basic requirements for admission, a student must complete 15 units from the following courses with a GPA of 3.0 or better: Spanish 544, 545, 556, 557 and 596.

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.

The first two years of high school Spanish may be counted as the equivalent of Spanish 101; three years the equivalent of Spanish 102; and four years the equivalent of Spanish 201.

The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work. 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.

101. Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Spanish 101 or two years of high school Spanish.

102. Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Spanish 102 or three years of high school Spanish.

201. Intermediate (4) I, II
Prerequisite: Spanish 102 or three years of high school Spanish.
A practical application of the fundamental principles of grammar. Reading in Spanish of cultural material short stories, novels or plays; oral and written reports. Special sections available for the Spanish speaking. (Formerly numbered Spanish 203)

202. Intermediate (4) I, II
Prerequisite: Spanish 201 or four years of high school Spanish.
Continuation of Spanish 201. Special sections available for the Spanish speaking. (Formerly numbered Spanish 204)

211. 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 emphasis on the spoken language with a modicum of practice; emphasis on the written material covering social, cultural or literary topics at vocabulary and useful phrases; conversation and assigned topics in English.

211-Y. (Formerly numbered Spanish 210)

Credit for Spanish 211-Y.
211-Y. Intermediate Conversation and Writing in Mexico (3)
Prerequisite: Spanish 201 or 211, 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 pre-summer period. Not open to students with credit for Spanish 211. (Formerly numbered Spanish 210-Y)

212. Writing and Conversation (2)
Prerequisite: Spanish 201 and 211, or four years of high school Spanish.
Emphasis on the written language with supporting practice in the spoken language: directed written composition on social, cultural or literary topics with stress on clarity and thoroughness of thought; all class discussion conducted in Spanish. (Formerly numbered Spanish 211)

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 Conversation and Writing (3)
Prerequisite: Spanish 211 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. 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 pre-summer period. Not open to students with credit for Spanish 301.

302. Advanced Writing and Conversation (3)
Prerequisite: Spanish 301 or near native-level proficiency.
Emphasis on creative writing with supporting practice in conversation; written composition on social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish.

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. (Formerly numbered Spanish 311A-311B)

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. (Formerly numbered Spanish 312A-312B)

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 European Studies 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. Not open to students with credit in Latin American Studies 341.

UPPER DIVISION COURSES (Also Acceptable for Advanced Degrees)

510A-510B. Modern Spanish Drama (3-3)
Prerequisites: Spanish 305A-305B.
The development of the drama of Spain from the beginning of the nineteenth century to the present time.

515A-515B. Mexican Literature (3-3)
Prerequisites: Spanish 306A-306B.
The major currents and characteristics of Mexican culture, as expressed through the development of the Mexican novel and theater.

520. Caribbean Area Literature (3)
Prerequisites: Spanish 306A-306B.
The development of the drama of Spanish-speaking countries of the Caribbean area.

522. Andean Countries Literature (3)
Prerequisites: Spanish 306A-306B.
The development of the Andean novel and short story from the period immediately preceding the Spanish conquest to today.

524. River Plate Literature (3)
Prerequisites: Spanish 306A-306B.
The 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 since 1936, with emphasis on the novel of the generation of 1898.

544. Interpretation: Spanish-English/English-Spanish (3)
Prerequisites: Spanish 490; one English composition course and one linguistics course.
Theoretic problems of translation and interpretation: linguistic, psychological, theoretical aspects of translation, including language translation, syntax, problems of translation; interpersonal communication and language translation, syntax, morphology and translation.
545. **Advanced Spanish-English/English-Spanish Translation** (3)
Prerequisites: Spanish 544; one English composition course and one linguistics course.
Techniques and methods of translating legal or governmental papers; banking documents, and business contracts from Spanish into English and from English into Spanish.

548. **Spanish Linguistics** (3)
Prerequisite: Spanish 302.
Structural, historical and applied Spanish linguistics.

549. **Phonetics and Phonemics** (3)
Prerequisite: Spanish 302.
The sounds of Spanish, and Spanish phonemic systems, with special attention to the problems involved in the teaching of Spanish pronunciation to English-speaking students.

550. **Golden Age Literature I** (3)
Prerequisites: Spanish 305A-305B.
Major writers and works, concentrating on prose and lyric poetry.

556. **Translation of Literary Works: A Critical Comparison** (3)
Prerequisite: Spanish 544.
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 490; one English composition course and one linguistics course.
Phonological, morphological, syntactic and lexical characteristics of the principal dialects of Spanish.

570. **Spanish-American Poetry** (3)
Prerequisites: Spanish 306A-306B.
Spanish-American poetry of the 19th and 20th centuries.

571. **Spanish-American Short Story** (3)
Prerequisites: Spanish 306A-306B.
Principal Spanish-American short story writers.

572. **Spanish-American Theatre** (3)
Prerequisites: Spanish 306A-306B.
Principal Spanish-American dramatists and movements.

580. **Modern Spanish Poetry** (3)
Prerequisites: Spanish 305A-305B.
Spanish poetry of the 19th and 20th centuries.

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.

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**Speech Communication**

**In the College of Professional Studies and Fine Arts**

**Faculty**
Emeritus: Ackley
Chair: King
Professors: Adams, Benjamin, King, Mills, Samovar
Associate Professors: Sanders, Weitzel
Assistant Professors: Hellweg, Lustig
Lecturer: McKiernan

**Offered by the Department**
Master of Arts degree in speech communication.
Major in speech communication with the A.B. degree in applied arts and sciences.
Teaching major in speech communication for the single subject teaching credential in English/Speech.
Minor in speech communication.
The Speech Communication Department conducts a number of activities such as the Forensics Program and the Readers Theater Program as performance 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)

**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 and 508; and 15 units selected from 300-500-numbered Speech Communication courses. No more than nine units from the following Speech Communication courses: 300, 301, 303, 304, 400, 496, 499.

**Speech Communication Major**

**For 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 104, 105, 111A, 135, 160, 191, (18 units)

**Major.** A minimum of 24 upper division units in speech communication to include Speech Communication 362, 391, 392, 508, 530, 537 or 354; and six units selected from any combination of Speech Communication 301, 309 (intercollegiate forensics experience), 361 and 400.

**Credential requirements.** Eighteen units to include:
(A) Language: 3 to 6 units from Linguistics 101, 520, 524 or 550.
(B) Literature: 6 to 9 units from English 250A-250B, 260A-260B, or other literature courses approved by the Speech Communication Department Chair.
(C) Composition: 6 to 9 units from English 200 and 500, Journalism 220 or 320, Study Skills 150.
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 or Speech Communication 104.

104. Public Speaking (3) I, II
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.

105. Introduction to Speech Communication (3) I, II
Investigation of the status of the discipline and analysis of interrelationships among varied specialties within the field. Intended for students who are either considering or who are committed to a speech communication major or minor.

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 definitions and models, coding, meaning, organization. Emphasis on applying principles to personal, historical, literary and political human interactions.

180. Argumentation (3)
Obtaining and organizing of evidence and the construction and use of the brief; study and discussion of current issues, the presentation of formal and informal debates. Participation in intercollegiate debate optional.

161. Intercollegiate Forensics (1) I, II
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
Role of group discussion in a democratic society. Principles and methods of group discussion in problem-solving and learning situations. Practice in dealing with questions of participation and leadership.

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.
470 / Speech Communication

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. (Formerly numbered Speech Communication 575)

485. Internship in Speech Communication (1-3) Cr/NC
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.

486. 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 486, 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)

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 artists as they affect the interpretive artist.

509. Readers Theatre (3)
Prerequisite: Speech Communication 508.
Theory, concepts and history of Readers Theatre. Principles of literary analysis and oral interpretation applied to methodologies and techniques in the development of texts into media of group communication of non-dramatic literature.

530. Semantics (3) I, II
Recognition of various types of linguistic meaning; logical distinctions in discourse; distinction between real and verbal disagreement; recognition and correction of semantic fallacies.

535. Theories of Human Communication (3) I, II
Prerequisite recommended: Speech Communication 135.
Special emphasis on various communication theories and models; the relationship of mental variables such as perception, roles and status, behavior change, language and motivation to the entire communication process.

537. 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.

580. Communication and Politics (3)
Prerequisite: Speech Communication 103 or 104.
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.

592. Persuasion (3) I, II
Prerequisite recommended: Speech Communication 103 or 104.
Persuasion with emphasis on psychological principles. Research project on a significant problem.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Speech Pathology and Audiology
In the College of Human Services

The clinical services area is accredited by the American Speech and Hearing Association. The preparation for clinical services is accredited by the American Speech and Hearing Association.

Faculty
Emretus: Earnest, Pfaff
Chair: Kopp
Professors: Kopp, Nichols, Riedman, Thile
Associate Professor: Allen
Assistant Professors: Gould, Newhoff, Novak, Phillips, Williams

Offered by the Department of Communicative Disorders
Master of Arts degree in speech pathology and audiology. The A.B. degree in applied arts and sciences.
Minor in speech pathology and audiology.

Speech Pathology and Audiology 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.
Mathematics 103; Physics 201; Psychology 101, 260 and 270, Speech Communication 103 or 104; Speech Pathology and Audiology 104, 105 and 106. (27 units.)
Major. A minimum of 24 upper division units in speech pathology and audiology selected with the approval of the adviser, to include Speech Pathology and Audiology 320, 321 and 340.

Speech Pathology and Audiology Minor
The minor in speech pathology and audiology consists of 23 units in speech pathology and audiology to include Speech Pathology and Audiology 104, 105, 106, 320, 321, 323, 340, 322 or 550, 270, Speech Communication 103 or 104.
Prerequisites for the minor include Physics 201, Psychology 101 and 260. (10 units)
Courses in the minor may not be counted toward the major, but may be used to satisfy general education requirements, if applicable.

Credentials
Specialist Credential for the Communication Handicapped
The Specialist Credential for the Communication Handicapped prepares students for an emphasis in one or more of the following areas of handicapped:
- Deaf and Severely Hard of Hearing
- Deaf-Blind
- Severe Oral Language (including aphasia)

Speech and Hearing
The Specialist Credential for the Communication Handicapped specifies a sequence of speech pathology and audiology 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. Admission to the program for the Single Subject Credential (Secondary) or Multiple Subjects Credential (Elementary).
### UPPER DIVISION COURSES (Intended for Undergraduates)

#### 305. Speech and Language Development and Communication Disorders (3) I, II
Normal development of speech and language, identification, prevention and remediation of speech, hearing and language disorders. Five hours of observation required. Not open to speech pathology and audiology majors.

#### 320. Phonetics (3) I, II
Two lectures and three hours of laboratory. Prerequisite recommended: Speech Pathology and Audiology 104.

#### 321. Anatomy and Physiology of Speech (3) I, II
Two lectures and three hours of laboratory. Prerequisite: Psychology 260 or Zoology 108, Recommended: Credit or concurrent registration in Speech Pathology and Audiology 106.

#### 322. Functional Communication Disorders (3) I, II
Prerequisites: Speech Pathology and Audiology 106; Psychology 101; credit or concurrent registration in Psychology 330.

#### 323. Organic Communication Disorders (3) I, II
Prerequisites: Speech Pathology and Audiology 106 and 321; competency examination.

#### 324. Methods of Speech Pathology (3) I, II
Prerequisites: Speech Pathology and Audiology 320 and 323 with a grade of C or better.

#### 325. Fieldwork in Speech, Hearing and Language (1-3) I, II Cr/NC
Two hours for each unit of credit. Prerequisite: Departmental approval and credit or concurrent registration in Speech Pathology and Audiology 106.

#### 326. Clinical Practice in Speech Pathology (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 324, and three upper division units in speech pathology and audiology. Admission is based on passage of a competency examination prior to enrollment and departmental approval.

#### 340. Audiology: Principles (3) I, II
Prerequisites: Speech Pathology and Audiology 105, Psychology 201, Psychology 260 and credit or concurrent registration in Speech Pathology and Audiology 341.

#### 341. Techniques of Audiology (1-3) I, II
Three hours of laboratory per unit. Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 340.

#### 342. Audiology: Application (3) I, II
Two lectures and two hours of activity. Prerequisite: Speech Pathology and Audiology 341.

#### 344. Clinical Practice in Audiologic Assessment (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 357, 551 and concurrent registration in Speech Pathology and Audiology 356.

#### 345. Clinical Practice with the Deaf (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 357, 551 and concurrent registration in Speech Pathology and Audiology 356.

#### 346. Clinical Practice with Hard of Hearing (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 357, 551 and concurrent registration in Speech Pathology and Audiology 356.

#### 357. Fieldwork with the Deaf (1-2) I, II Cr/NC
Field observation and participation under supervision with small groups of hearing impaired youngsters. Maximum combined credit six units for Speech Pathology and Audiology 356, 357 and 656.

#### 358. Manual Communication for the Hearing Impaired (2) I, II Cr/NC
Field observation and participation under supervision with small groups of hearing impaired youngsters. Maximum combined credit six units for Speech Pathology and Audiology 356, 357 and 656.

#### 360. Audiology: Principles (3) I, II
Prerequisites: Speech Pathology and Audiology 105, Psychology 201, Psychology 260 and credit or concurrent registration in Speech Pathology and Audiology 341.

#### 361. Techniques of Audiology (1-3) I, II
Three hours of laboratory per unit. Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 340.

#### 362. Audiology: Application (3) I, II
Two lectures and two hours of activity. Prerequisite: Speech Pathology and Audiology 341.

#### 364. Clinical Practice in Audiologic Assessment (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 357, 551 and concurrent registration in Speech Pathology and Audiology 356.

#### 365. Clinical Practice with the Deaf (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 357, 551 and concurrent registration in Speech Pathology and Audiology 356.

#### 366. Clinical Practice with Hard of Hearing (1) I, II, S
Three hours of laboratory. Prerequisites: Speech Pathology and Audiology 357, 551 and concurrent registration in Speech Pathology and Audiology 356.

#### 367. Fieldwork with the Deaf (1-2) I, II Cr/NC
Field observation and participation under supervision with small groups of hearing impaired youngsters. Maximum combined credit six units for Speech Pathology and Audiology 356, 357 and 656.

#### 368. Manual Communication for the Hearing Impaired (2) I, II Cr/NC
Field observation and participation under supervision with small groups of hearing impaired youngsters. Maximum combined credit six units for Speech Pathology and Audiology 356, 357 and 656.
401. Voice Disorders (3)
Two lectures and three hours of laboratory.
Prerequisite: Speech Pathology and Audiology 321.
Theory and practice in the remediation of voice problems. Perceptual training and measurement of vocal dimensions.

433. Clinical Practice in Public Schools (4) I, II CR/NC
Prerequisites: Speech Pathology and Audiology 529, four units of practice, 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. One hundred twenty hours practicum required. Applies only toward Restricted Credential, Speech and Hearing Specialist or for the Certificate of Clinical Competency in Speech Pathology.

458. Total Communication for Teachers of the Hearing Impaired (2)
Prerequisite: Speech Pathology and Audiology 368. Concurrent registration in Speech Pathology and Audiology 458L recommended.
Intermediate level course in the use of total communication with emphasis on developing formal and informal non-verbal communication skills.

458L. Total Communication Laboratory (1)
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 458. Laboratory experience to develop receptive and expressive total communication skills.

469. Workshop in Speech Pathology and Audiology (1-3) I, II
Study of some problem in speech pathology or audiology. 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)

527. Diagnostic Method in Speech Pathology (3) I, II
Prerequisites: Speech Pathology and Audiology 320, 323, and 340, and credit or concurrent registration in Speech Pathology and Audiology 326.
Principles and procedures in the assessment and prognosis of communication 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 Pathology (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Speech Pathology and Audiology 527 and passage of a competency examination.
Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment.

529. Orientation to Public School Practicum (3) I, II
Prerequisites: Speech Pathology and Audiology 324 and 527. Minimum of 50 hours of supervised clinical practicum, plus departmental approval. Recommended: Credit or 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 Speech Pathology and Audiology 433 or Special Education 490E (severe oral language or speech and hearing emphases). (Formerly numbered Speech Pathology and Audiology 329.)

530. Family Communication Dynamics (3)
Prerequisites: Speech Pathology and Audiology 322 and 336.
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: Speech Pathology and Audiology 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) I, II
Prerequisite: Speech Pathology and Audiology 351 or Linguistics 520.
Techniques of language assessment, including administration and evaluation of particular diagnostic tests. Organic impalcations in auditory perceptual problems. Discussions and demonstrations. Project required.

539. Neuropathologies of Speech, Hearing and Language (3) II
Prerequisites: Speech Pathology and Audiology 321 and 340. Recommended: Speech Pathology and Audiology 323.
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.

543. Hearing Amplification (1 or 3) I
Prerequisites: Module I: Speech Pathology and Audiology 340. Module II: Speech Pathology and Audiology 342.
Module I includes hearing aid components, functions, trouble shooting and client orientation to amplification (1 unit). Module II includes hearing aid evaluations, fittings, and electroacoustic hearing aid analysis (2 units). Students may elect Module I (1 unit) or Modules I and II (3 units).

547. Hearing Conservation (2-3)
Prerequisite: Speech Pathology and Audiology 341.
Module I: Core information (noise measurement, analysis, reduction; its effect on hearing (communication); 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)
Prerequisites: Speech Pathology and Audiology 357 and 531 (or Linguistics 520).
Theories of multisensory methods in speech, language and hearing, and psycho-educational programs. services and cultural-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: Speech Pathology and Audiology 320, 321 and 551.
Significant theories and research in prevention and remediation of articulatory disorders. Significant theories and research in treatment of articulatory disorders. Includes emphasis on speech habilitation of hearing impaired, cognitive and motor processing.

553. Language Disorders and Methods (3) I, II
Prerequisites: Speech Pathology and Audiology 531 and 551.
Significant theories and research in language development and remediation. Includes emphasis on application to hearing impaired individuals.

554. Multisensory Integration (3)
Prerequisites: Speech Pathology and Audiology 532 and 553.
Theories of multisensory integration, sensory motor development, and auditory processing. Programs and techniques of remediation applicable to communicatively handicapped children.
596. Selected Topics in Speech Pathology and Audiology (1-4) I, II
Prerequisite: Twelve units in speech pathology and audiology.
Specialized study of selected topics from the area of speech pathology and audiology. 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.

Study Skills
In the College of Arts and Letters

Faculty
Chair: Basile
Associate Professors: Basile, Denman, Macdonald
Lecturers: Albanese, Allister, Corona, Hallahan, Johns, Johnson, M., Johnson, P., Knox, Linthicum, Migdal, Miller, Mullenberg, Nower, Padilla, Potts, Sweedler

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

LOWER DIVISION COURSES

The Study Skills Center, located in Library East, offers courses and individual assistance to all students at any university level, including bilingual and international students, who wish to improve reading, writing or other skills, or obtain help with study problems or writing projects. Course work leading to satisfaction of the graduation requirement in writing competency is offered in the Center.

Study skills courses may not be used to satisfy general education requirements and no more than six units may be applied towards a bachelor's degree.

100. English Fundamentals (3) I, II Cr/NC
Practical grammar — including usage, sentence structure, syntax, punctuation and rhetoric.

111. Reading Development (3) I, II Cr/NC
Two lectures and three hours of laboratory. Improvement of individual reading effectiveness: speed and comprehension, reading for the main idea, skimming, scanning, and word power.

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 Study Skills 132, or, at the discretion of the instructor, Study Skills 133. (Formerly numbered English 1X.)

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 Study Skills 132, or, at the discretion of the instructor, Study Skills 133. (Formerly numbered English 1X.)

133. English for International or Bilingual Students (3) I, II Cr/NC
Advanced listening, 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. (Formerly numbered English 12.)

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.

143. Adjunct Writing: Selected Topics (1) Cr/NC
Instruction in basic writing skills required of a particular discipline. Writing assignments in this course will be coordinated with those from designated lower division courses in selected disciplines; students will learn to refine papers for mechanics, rhetoric, and style within the context of the specified discipline. See Class Schedule for specific content.
150. Writing Development (3) I, II Cr/NC
One lecture and four hours of laboratory.
Instruction in basic writing skills, supervised practice, and frequent individual
conferences. Open to students at any level of college work. (Satisfies writing competency
requirement.) (Formerly numbered Study Skills 101.)

151. Technical Writing (3) Cr/NC
A comprehensive course in preparing and writing technical papers and reports. Emphasis
on style, organization and techniques used in composing scientific and technical
communications. Analysis of technical publications and the variety of methods used in
compiling data and presenting graphic material.

296. Experimental Topics (1-3) Cr/NC
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.

Telecommunications and Film
In the College of Professional Studies and Fine Arts

Faculty
Chair: Anderson
Steen, Wylie
Associate Professors: Martin, Meador, Misiorowski
Lecturer: Thaller
Distinguished Visiting Lecturer: Witherspoon

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
like.
A minor is required with this major.

Preparation for the major. Telecommunications and Film 100, 110, 120, 121, 122, 123,
and 160 (21 units.)

Major. A minimum of 24 upper division units in telecommunications and film to include
Telecommunications and Film 500 or 505 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. (21 units.)

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.
TV Production: Telecommunications and Film 500 or 505, 501, 510, 520, 550, 580 and
581. (22 units.)
Management: Telecommunications and Film 310, 500, 505, 540, Psychology 342, and six
units selected from Telecommunications and Film 501, 530, 535. (21 units.)
Film: Telecommunications and Film 501, 510, 520, 550, 560, 561 and 562 or 563. (22
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 376, 377, 383, Educational Technology and Librarianship 540, 541, 544; Elementary Education 362, 372; Psychology 330; Telecommunications and Film 570.

Graphic Art: Art 340, 341, 440, 441, 590; Industrial Arts 381, 482; Industrial Technology 364.

Industrial Arts: Industrial Arts 341, 361, 443, 444, 462, 563.

Information Systems: Business Administration 380, 480, 482.

International Media: Political Science 375, 577; Telecommunications and Film 363, 590.

Law and Government: Journalism 510; Political Science 335, 546, 547A, 547B; Telecommunications and Film 505.

Management: Business Administration 350, 351, 352, 356, 453; Telecommunications and Film 500, 501.

Mass Communication: Journalism 500, 503, 508, 509; Political Science 310, 336; Psychology 328, 342; Sociology 422, 440, 460, 545, 546; Telecommunications and Film 562.

News: Journalism 320, 425, 474, 475, 502, 529; Telecommunications and Film 502, 505.

Performance: Drama 330, 431, 432; Speech Communication 380, 508, 535; Telecommunications and Film 390, 391.

Playwriting: Drama 420; English 527, 572, 581; Telecommunications and Film 510.

Production Design and Management: Art 381, 451, 481, 581; Drama 440, 448, 540, 545A; Industrial Technology 436; Psychology 320; Telecommunications and Film 550.

Research Methods: Business Administration 301, 366; Journalism 509; Psychology 322, 342, 405; Secondary Education 564; Sociology 460, 464.

Radio-Television Minor

The minor in radio-television consists of a minimum of 15-24 units, with no more than three hours of any course, that must be taken with the approval of the departmental advisor for minors. Areas include:

Film as Art and Communication: Telecommunications and Film 160, 363, 562, 563, and 540.

Broadcast Station Practices: Telecommunications and Film 100, 101, 102, 103, 201, 202, 203, and 301.

Performance: Telecommunications and Film 390, 391, 520; Drama 105, 130; Speech Communication 111A.

Educational Telecommunications: Telecommunications and Film 100 or 315, 320 or 370, 570, and six to nine units of electives.

The minor in radio-television is not open to students with a major in Telecommunications and Film.

Telecommunications and Film / 483

110. Broadcast Writing (3) I, II

Prerequisite: Successful completion of the University's writing competency requirement. Theory and practice in writing materials for oral presentation. Problems of timing and pacing, conversational expression and word color.

120. Staging and Art for Television and Film (3) I, II

Two lectures and more than three hours of activity. Aesthetic considerations and technical practices in staging, lighting, and graphics for television and film. Practical experience in university sponsored productions.

121. Audio Production (3) I, II

Two lectures and more than three hours of activity. Theory of audio production, use of basic audio equipment, and basic sound production. Practical experience in University sponsored productions. (Formerly numbered Telecommunications and Film 130.)

122. Still and Motion Picture Photography (3) I, II

Two lectures and more than three hours of activity. Basic film equipment and its use in preparation of photographic materials for film and TV production. Practical experience in University sponsored productions.

123. Video Production (3) I, II

Two lectures and more than three hours of activity. Practical experience with production equipment. Theory and practice in the skills and knowledge of television production. Includes basic production techniques and methods. Preparation of several projects. Practical experience in University sponsored productions.

160. Cinema as Art and Communication (3) I, II

An intensive survey of cinema, with emphasis on the feature film and the documentary. Historical and stylistic influences on the aesthetic values and social implications of cinema. Illustrated by sample screen scenes.

260. Film Techniques (3) I, II

Two lectures and three hours of activity. Theory and practice in the skills and knowledge of television production. Includes basic production techniques and methods. Preparation of several projects. Practical experience in University sponsored productions.

280. Television Production and Directing (3) I, II

Two lectures and more than three hours of activity. Theory and practice in the skills and knowledge of television production. Includes basic production techniques and methods. Preparation of several projects. Practical experience in University sponsored productions.

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, 498, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Originally for Undergraduates)

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.
500. Broadcast Management (3) I, II
Prerequisite: Telecommunications and Film 100.
Administration and organization of radio and television, including radio and television as advertising media, broadcasting research, station organization, promotion and sales, and current developments in radio and television as mass media.

501. 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 581. Financing, preproduction planning, and postproduction of television and film.

505. Regulation of Broadcasting (3) I, II
Prerequisite: Telecommunications and Film 100.
Responsibilities of broadcasters as prescribed by law, governmental policies and regulations, and significant court decisions.

510. Script Writing for Broadcasting and Film (3) I, II
Prerequisites: Telecommunications and Film 260 or 280, and successful completion of the University’s writing competency requirement.
Development of a single program and series ideas. Scripting of dramatic original and adaptation forms, and the documentary.

520. Directing Television and Film Drama (3) I, II
Two lectures and more than three hours of activity.
Prerequisites: Credit or concurrent registration in Telecommunications and Film 260 or 280.
Planned for prospective directors of plays for television and film. The student will become acquainted with principles, procedures and methods. Practical experience in University-sponsored productions.

530. Radio Programming (3) II
Two lectures and more than three hours of scheduled activity.
Prerequisites: Telecommunications and Film 100 and 121.
Formats, policies, production practices and research in modern programming. Student work is broadcast on KPBS-FM.

535. Television Programming (3) I, II
Prerequisite: Telecommunications and Film 100.
Structure of television programming. Problems such as ratings, advertisers and scheduling; social effects and criticism of television programming.

540. Broadcast Advertising (3) I, II
Prerequisites: Two courses in broadcasting, journalism or marketing.
Theory, procedures, and the role of broadcast advertising, including marketing and media research, campaign planning, media strategy, time purchasing, and evaluation.

541. Broadcast Commercial Practices (3)
Prerequisite: Telecommunications and Film 540.
Consideration of the structure and procedures in broadcast advertising organizations, policies, training, and evaluation of research tools.

550. Advanced Lighting and Staging for Television and Film (4) I, II
One lecture and more than nine hours of activity.
Prerequisites: Telecommunications and Film 120, 122, 123, and consent of instructor.
Production elements of television and film, to include lighting and staging techniques, art, and scenic design and scene decoration. Practical experience in University-sponsored productions.

560. Film Production (3) I
One lecture and more than six hours of activity. Practical experience in University-sponsored productions.
Prerequisites: Telecommunications and Film 260 and 510.
Advanced practicum in film production. Camera, lighting, design, sound techniques for Super-8 and 16mm productions. (Formerly numbered Telecommunications and Film 560A.)

561. Film Direction (3) II
Two lectures and more than three hours of activity.
Prerequisites: Telecommunications and Film 501, 520, 550, and 560.
Studio and location work in the preparation of dramatic and nondramatic films. Practical experience in University-sponsored productions. (Formerly numbered Telecommunications 561 and Telecommunications 260.)

562. Documentary and Propaganda Film (3) I, II
Prerequisite: Telecommunications and Film 160.
Viewing and analysis of the major conceptual forms and cinematic techniques of these genres from 1922 to the present.

563. 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. Maximum credit six units.
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. **Educational Telecommunications** (3) I, II
   Prerequisite: Telecommunications and Film 100. The role of instructional and public broadcasting in the United States; utilization of telecommunications in the classroom and industrial training programs.

580. **Advanced Programming and Development for Television** (3) I, II
   Prerequisite: Telecommunications and Film 280, 510, and consent of instructor. The development of program ideas into formats for television productions of all types. Practical experience in developing and producing programs for University-sponsored productions.

581. **Advanced Television Directing** (3) I, II
   Prerequisite: Telecommunications and Film 280, 520 and consent of instructor. Presentational techniques and individual projects in the direction and production of television programs. Practical experience in University-sponsored productions.

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. (Formerly numbered Telecommunications and Film 496.)

**GRADUATE COURSES**

Refer to the Graduate Bulletin.

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### University 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 experimental and nontraditional course work and through courses designed to improve the academic capabilities of students.

#### General Courses

**LOWER DIVISION COURSES**

142. **Exploring the University** (1) Cr/NC
   A five-week mini-course to prepare new students academically and ease the transition into the university through instruction in the principles of effective learning, clear thinking, and disciplined study. An orientation to the general nature of higher education and the opportunities it offers for learning.

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.

275. **Honors Special Study** (1)
   Prerequisite: Admission to the University Honors Program. Special study associated with a lower division course offered as an honors section, and serving as an extension of the course.

**UPPER DIVISION COURSE**

(Interested for Undergraduates)

400. **Selected Activities** (1-3) Cr/NC
   Prerequisite: A minimum grade point average of 2.0. Supervised experience in college and/or community activities.

#### Innovative Courses

The University Curriculum Committee sponsors University Studies courses (250, 350, 550) among which are interdisciplinary courses and courses characterized by new methods and proposals for such courses are submitted to the University Curriculum Committee, which is authorized to grant up to four semesters' approval subject to periodic review. Questions about individual courses should be directed to the department or departments listed about such courses in the Class Schedule; immediately after the University Studies number (250, 350, 550) in the Class Schedule; general inquiries about University Studies courses (250, 350, 550) as a whole should be directed to the chair of the University Curriculum Committee.

Students interested in enrolling in University Studies 250, 350 or 550 should contact the Division of Undergraduate Studies (AD-223) for information. Applications must be submitted to the Division prior to the end of the first week of classes. These courses may not be used to satisfy course requirements for the major or minor. No combination of University Studies 200 and 400 in excess of six units may be counted for credit on a bachelor's degree program.

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<th>Course Number</th>
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<td>250</td>
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Women's Studies
In the College of Arts and Letters

Faculty
Chair: Boxer
Professor: Boxer
Assistant Professors: Horst, Huckle, Rotella, Watson
Lecturers: Kerr, Perkins, Zimmerman

Offered by Women's Studies
Minor in women's studies.
Courses in women's studies.
Major work in women's studies is not offered.

Women's Studies Minor

The minor in women's studies consists of 18 units to include Women's Studies 101 or 330, and 201; the remaining 12 units should include at least one course from three of the following groups:

- **Group A**: Courses which investigate the experience of women in cultures or eras distinct from our own—Women's Studies 310, 340, 341A-341B.
- **Group B**: Courses which examine biological, psychological and sociological influences on women's personality and behavior—Women's Studies 320, 321, 325, 360, 390.
- **Group C**: Courses which explore artistic expression by and about women—Women's Studies 351, 352, 353.
- **Group D**: Courses which examine the roles of women in political and economic life—Women's Studies 370, 380, 385.

Students planning graduate work in women's studies should include Women's Studies 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**

101. Introduction to Women's Studies (3)
Overview of the women's movement and women's studies program with emphasis on the relationship between students' personal experiences and their cultural context. (Formerly numbered Women's Studies 110.)

201. Sexism and the Social Sciences (3)
Images of women and men and their roles in society viewed through a feminist critique of conventional, biased concepts and modes of thought in disciplines dealing with human interaction; also proposing alternative strategies for research.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

**UPPER DIVISION COURSES**

(Intended for Undergraduates)

310. Women in Comparative Cultures (3)
Women from an anthropological perspective; social, economic, legal and ideological aspects of women's position in selected preindustrial or transitional to industrial societies.

320. Socialization of Women (3)
Theories of socialization; summary of studies on the impact of formal and informal social institutions on female development.

321. Life Cycles of Women (3)
Women's developmental processes 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.

325. Psychology of Women (3)
Theories of the psychological development of women; investigation of biological and cultural factors influencing personality and behavior.

330. Contemporary Issues in the Liberation of Women (3)
Intensive study of the contemporary women's movement; feminist views of political, economic, and social institutions which affect women's lives. Not open to students with credit in Women's Studies 101. (Formerly numbered Women's Studies 330A-330B.)

340. Women in History (3)
Social, cultural, economic, political and intellectual aspects of women's history in Western civilization, with emphasis on impact of modernization on women's roles in family and society.

341A-341B. Women in American History (3-3)
Survey of the social, cultural, economic, political and intellectual history of women in America. Semester I: From colonization to 1860; Semester II: 1860 to present.

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)
Definitions of women in society as reflected in literature and literary criticism. (Formerly numbered Women's Studies 350A.)

353. Women Writers (3)
Women writers as literary artists and social critics. (Formerly numbered Women's Studies 350B.)

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 biological factors, psychological variables, and sexual behavior, responses, identity.

370. Women and the Law (3)
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.

380. Women and Political Systems (3)
Comparative analysis of the place of women in various political theories, political and economic systems, and the processes which determine political power.

385. Women's Economic Roles (3)
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.

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.

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)
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 chair and instructor. Individual study. Maximum credit six units.
UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

595. Seminar in Women's Studies (3)
Prerequisites: Six upper division units (three in women's studies; three in appropriate field) 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. (Formerly numbered Women's Studies 495.)

Zoology
In the College of Sciences

Faculty
Emeritus: Crouch, Harwood, Huffman, Kaston, Norland, Olson
Chair: Atkins
Professors: Atkins, Bohnsack, Carpenter, Chen, Cohn, Collier, Dexter, Estes, Etheridge, Huffman, Hunsaker, Krekorian, McLean, Monroe, Olson, Wilson
Associate Professors: Avila, Cooper, Novacek, Plymale

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.

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 semesters 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."

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.
The student must complete an official program for graduation and file a copy signed by the adviser with the Evaluations Office no later than one full semester prior to anticipated time of graduation.

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.)

Major. A minimum of 36 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503; plus a minimum of 16 units of zoology consisting of no less than 3 courses at the 500-level, at least two of which must include a laboratory. Remaining units to be selected in consultation with a departmental adviser; up to eight upper division units may be chosen from chemistry, geology, mathematics, physics, or other area relevant to the student's interests.
The student must complete an official program for graduation and file a copy signed by the adviser with the Evaluations Office no later than one full semester prior to anticipated time of graduation.
Emphasis in Entomology

Preparation for the major. Botany 200; Zoology 200; Biology 215; Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B. (38-39 units.)

Major. A minimum of 38-39 upper division units to include Biology 411, 430, and 501; or Biology 411, 502, and 503; Botany 526; Zoology 521, 524, and 528; plus either Zoology 555 or 556; plus either 525 or 527; plus an additional four units of science credit related to the student's particular area of interest and selected in consultation with the entomology adviser. The student must complete an official program for graduation and file a copy signed by the adviser with the Evaluations Office no later than one full semester prior to anticipated time of graduation.

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. (38-39 units.)

Major. A minimum of 36 upper division units to include Biology 400 and either Biology 411, 430, 501, or Biology 411, 502, 503; Microbiology 310; plus a minimum of 12 upper division units of zoology to include any two of Zoology 503, 504, 510, 521, 540 or 570; and five units of electives selected in consultation with the Life Science Teaching Credential Adviser.

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 division units, 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.

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)
Prerequisite: Credit or concurrent registration in Zoology 100. Laboratory course on evolution and diversity of animals involving field trips and laboratory investigations.

108. Human Anatomy (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: An introductory course in high school biology or zoology.

Gross and microscopic anatomy of the organ systems of the human body.

200. Introduction to Zoology (4)
Three lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Botany 200. Zoology for life sciences major. Animal diversity and evolution, development, morphology and functioning of animal organ systems; activities and behavior patterns of animals; role of animals in human affairs.

250. Preprofessional Topics (1) Cr/NC
A. Topics in Medicine.
B. Topics in Dentistry.
C. Topics in Veterinary Medicine.

Designed to expose the preprofessional student to the profession of his/her choice through speakers and selected readings. Emphasis on alternatives and meeting stresses as a preprofessional student.

Maximum combined credit three units for 250A, 250B and 250C.

290. Experimental Topics (1-3)
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)

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.
Prerequisite: An introduction to the study of social behavior. Insights into the biological bases of social behavior. Not open to biological sciences majors.

340. Insects in Perspective (3)
Prerequisite: A college-level course in biological science. The role of insects in global ecosystems with emphasis on medical and economic aspects, adaptations of insects for these roles, and analysis of current problems in pest management. (Formerly numbered Zoology 330.)

450. Invertebrate Zoology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200. Survey of structure, function, ecological significance, and phylogenetic relationships of invertebrate animals.

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 vertebrates as a whole; anatomy, physiology, evolution and development of the vertebrate organism.

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 extinct and the role of humans in such extinctions.

490. Senior Investigation and Report in Invertebrate Zoology (2)
Prerequisite: Consent of instructor.
Investigation of a current problem in invertebrate zoology.
526. **Insect Ecology (3)**

Two lectures and three hours of laboratory.

**Prerequisite:** Zoology 521.

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.

**Prerequisite:** Zoology 521.

Theory and implementation of biological control of arthropods and weeds. Emphasis on the study 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 521 or an upper division course in physiology and Chemistry 230 or 231.

Description, theory and experimental analysis of all major physiological processes in insects.

530. **Advanced Topics in Invertebrate Zoology (3)**

Lecture-laboratory format varies with course content.

**Prerequisite:** Zoology 200.

Selected topics in advanced invertebrate zoology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

535. **Parasitology (4)**

Two lectures and six hours of laboratory.

**Prerequisite:** Zoology 200.

Studied of animal parasites with special reference to those of man. Laboratory including identification of important parasites of man, and collection and preservation of local forms.

503. **Embryology (4)**

Two lectures and six hours of laboratory.

**Prerequisite:** Zoology 200.

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.

**Prerequisites:** Zoology 200 or Microbiology 310 or Zoology 108.

The study of animal parasites, f. man and collection and preservation of local forms.

512. **Insect Physiology (4)**

Two lectures and six hours of laboratory.

**Prerequisites:** Zoology 521, or a combination of this course with Microbiology 495.

Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

515. **Ichthyology (4)**

Two lectures and six hours of laboratory.

**Prerequisite:** Zoology 200.

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.

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 495.

522. **Special Topics in Entomology (3-4)**

Two lectures and three hours of laboratory.

**Prerequisite:** Zoology 521.

Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

506. **Comparative Anatomy of the Vertebrates (4)**

Two lectures and six hours of laboratory.

**Prerequisite:** Zoology 200.

Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

516. **Herpetology (4)**

Three lectures and three hours of laboratory.

**Prerequisites:** Zoology 200 and consent of instructor.

The study and identification of birds, especially those of the Pacific Coast and the San Diego region.

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 study and identification of birds, especially those of the Pacific Coast and the San Diego region.

521. **General Entomology (4)**

Two lectures and six hours of laboratory.

**Prerequisite:** Zoology 200.

Structure, physiology, natural history and classification of insects.
540. Physiological Zoology (4)
Three lectures and three hours of laboratory.
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. Lower Vertebrate Paleontology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of nonmammalian vertebrates, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included.

561. Mammalian Paleontology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of mammals, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included. Zoology 561 need not follow in sequence with Zoology 560.

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.

571. Hormonal Aspects of Behavior (3)
Prerequisites: Biology 430 or 502, or Zoology 540.
Chemoregulatory mechanisms operating within multicellular organisms will be discussed; the structural and chemical components of regulatory systems will be examined in terms of their behavioral effects on the organism.

580. Aquaculture (3)
Prerequisites: Biology 411 or 501, plus either Zoology 200 or 506.
Principles and practices of the farming of aquatic organisms.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Faculty and Administration

1979 – 1980

DAY, THOMAS B. (1978)
B.S., Kishwaukee College; M.A., Northern Illinois University; Ph.D., Indiana University. Assistant Professor of Physics

ABBOTT, MICHELLE T. (1964)
B.S., B.J., Indiana University. Associate Professor of Chemistry

ABBOTT, PATRICK L. (1971)
B.S., B.A., Indiana University; M.A., Indiana State University. Professor of Geological Sciences

ACKERLY, ROBERT S. JR. (1963)
B.S. , M.S., University of Texas at Austin. Professor of Secondary Education

ADAMS, ELISE B. (1971)
B.S., M.S., Ph.D., University of Oklahoma. Professor of English and Comparative Literature

ADAMS, STEVEN J. (1979)
B.S., M.A., Ph.D., University of Cincinnati. Assistant Professor of Accounting

ADAMS, WILLIAM J. (1963)
B.S., M.S., Ph.D., University of Oklahoma. Professor of Speech Communication

AHERN, CAROL A. (1969)
B.S., Northeastern State College; M.A., University of Arkansas. Assistant Professor of Physical Education

ALPERT, GEORGE (1976)
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ARDEN, ROBERT J. (1967)
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B.S., New Mexico State University; M.S., Ph.D., University of New Mexico. Dean, College of Education; Professor of Educational Administration

ASSAF, NANCY C. (1976)
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BARBER, WILLIAM E. (1966)
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    A.B., University of Redlands; M.A., Ph.D., University of Southern California.

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    A.B., University of Rochester; Ph.D., University of Minnesota.

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    A.B., University of California, Los Angeles.

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    A.B., A.M., University of Illinois; Ph.D., University of Chicago.

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    A.B., Carleton College; Ph.D., University of Wisconsin.

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ERICKSON, WILLIAM (1964)
    A.B., California State University, Fullerton; M.A., University of Denver; M.S., Air Force Institute of Technology, Ohio.
Fonger, Sandra

Frey, Leonard H.

Gallup, Avery H.

Gallup, Avery H.

Galan, Ethan

Garfield, J. L.

Garfield, J. L.

Garland, Edward W.

Garrick, John D.

Garrison, John D.

Garrison, John D.

Gasparini, Joseph J.

Gasparrini, Joseph J.

Gasparini, Joseph J.

Gaston, Mary Patricia

Gauthier, Richard J.

Gauthier, Richard J.

Gauthier, Richard J.

Gay, John P.

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McComber, LeGrand T. (1968) B.A., Brigham Young University; M.A., University of Montana. Assistant Professor of Aerospace Studies.

McTaggart, Aubrey C. (1962) B.S., University of British Columbia; M.S., Ph.D., University of Illinois. Professor of Health Science.

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Meadores, Eddie S. (1972) B.S., Tennessee State University; M.S., Ph.D., Michigan State University. Associate Professor of Music.

Means, Gary (1980) B.S., M.S.W., San Diego State University; D.S.W., Denver University. Lecturer in Social Work.


Medina, Florencio (1973) A.B., Knox College, M.A., University of Michigan. Assistant Professor of Social Sciences, Imperial Valley.

Mejía, Carlos (1979) Assistant Dean for Student Affairs, College of Education.

Mendez, Edward R. (1973) A.B., St. John's University, M.A., Ph.D., St. Louis University. Professor of Sociology.

Meovides, Nicholas C. (1960) A.B., Cornell College; M.A., University of Minnesota. Professor of Music.

Mecier, Robert A. (1972) B.S., Defiance University; M.B.A., M.D., University of Chicago. Certified Public Accountant. Professor of Accounting.

Meigs, Robert F. (1972) A.B., M.A., University of Southern California. Professor of Accounting.

Meister, Cary W. (1975) A.B., University of California, Santa Barbara. Assistant Professor.

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Meadows, Edith E. (1972) A.B., A.A., M.A., Iowa State University; M.S., Ph.D., University of Colorado. Professor of English.
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<tr>
<th>Name</th>
<th>Degree(s)</th>
<th>Institution(s)</th>
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<tr>
<td>Newman, Alan C.</td>
<td>S.B., LL.B., University of Indonesia; Doctor of Philosophy; University of</td>
<td>Library, Netherlands Institute for Documentation and Research.</td>
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<tr>
<td>Nicholas, Alan C.</td>
<td>B.S., Bowling Green State University; Ph.D., Ohio State University</td>
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<td>Nicholas, Paul F.</td>
<td>A.B., College of William and Mary; Ph.D., Duke University</td>
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<td>Nicholas, Prescott S.</td>
<td>A.B., M.A., Stanford University; Ph.D., University of Pennsylvania</td>
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<td>Nooryan, Iraj</td>
<td>B.S., University of Tehran; M.S., University of California; Registered</td>
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<td>Ortiz, Elizabeth</td>
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<td>Professor of History.</td>
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<td>Orth, Frederick</td>
<td>B.S., City College of New York; M.S., Stanford University</td>
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<td>O'Leary, Vincent</td>
<td>B.A., University of California; Los Angeles; M.A., Northwestern University</td>
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<td>Padgett, Robert E.</td>
<td>A.B., M.A., Ph.D., University of Iowa.</td>
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<td>Nowler, Joyce</td>
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<td>Nowler, Leon</td>
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<td>Nunzi, Melissa</td>
<td>B.A., University of California; Los Angeles; M.A., Northwestern University</td>
<td>Assistant Professor of Zoology.</td>
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<td>Oades, Rizalino A.</td>
<td>A.B., Far Eastern University, Philippines; M.A., University of Hong Kong;</td>
<td>Professor of Finance.</td>
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<td>O'Brien, Albert C.</td>
<td>A.B., Providence College; A.M.T., Harvard University; Ph.D., University of</td>
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<td>B.S., M.A., University of Texas; Ph.D., University of Washington</td>
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<td>O'Brien, Mary M.</td>
<td>B.S., North Dakota State University; M.A., University of Colorado.</td>
<td>Assistant Professor of Spanish.</td>
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<td>Ochoa, Alberto M.</td>
<td>M.A., California State University; Los Angeles; M.S., University of</td>
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<td>O'Donnell, Jo Anne B.</td>
<td>B.A., University of Idaho; M.A., Arizona State University; Ed.D.,</td>
<td>Student Affairs Officer.</td>
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<td>Odenda, Eric M.</td>
<td>B.A., University of New Mexico; M.A., University of Iowa; Ph.D., University</td>
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<td>O'Connor, Vesna E.</td>
<td>B.S., St. Cloud State Teachers College; M.A., University of Minnesota;</td>
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<td>Christy, Basil</td>
<td>B.S., M.S., University of Illinois; Registered Professional Engineer.</td>
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<td>Olsen, Albert W.</td>
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<td>O'Neill, Edward E.</td>
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<td>Oreilly, Nathalia C.</td>
<td>Special study at Barnard College, University of Madrid, and Sorbonne.</td>
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<td>A.B., M.A., S.T.B., S.T.J., St. Mary of the Lake Seminary; L.M.S.,</td>
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<td>Owen, Mack</td>
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<td>Padgett, L. Vincent</td>
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<td>Pacheco, Richard</td>
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<td>Palmer, Dennis</td>
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<td>Assistant Professor of French.</td>
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<td>Panch, Nicholas</td>
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<td>Papin, Paul J.</td>
<td>B.S., B.S., University of Arizona; B.S., San Diego State University;</td>
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<td>Park, Chung J.</td>
<td>B.S., University of Washington; M.S., Kansas State University; Ph.D.,</td>
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<td>Park, Cynthia Darche</td>
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<td>Parsons, John A.</td>
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<td>Patterson, Emily H.</td>
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<td>Patterson, Patricia L.</td>
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<td>Paulin, Harry W.</td>
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<td>Pearson, Thomas R.</td>
<td>A.B., Librarian, Purdue University.</td>
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<td>Pease, William J.</td>
<td>B.A., Pomona College; M.A., Fordham University; M.S., University of California, Berkeley.</td>
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<td>Perkin, Robert B.</td>
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<td>Professor of Chemistry.</td>
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<td>Persaud, Carl F.</td>
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<td>Perks, Carol O.</td>
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<td>Perkins, William A.</td>
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<td>Professor of English and Comparative Literature.</td>
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<td>Persson, Gerald D.</td>
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<td>Peters, Lynn H.</td>
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<td>Professor of Management.</td>
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<td>Peterson, Donald W.</td>
<td>A.B., South Dakota; M.S., Springfield College, Ph.D., University of Oregon</td>
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<td>Peterson, Gary L.</td>
<td>A.B., University of Colorado; M.S., Ph.D., University of Washington.</td>
<td>Associate Professor of History.</td>
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<td>Peters, Richard H.</td>
<td>A.B., University of California, Berkeley; M.A., San Francisco State University, Ph.D., University of California, Davis.</td>
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<td>Phillips, Leroy N.</td>
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<td>Phillips, Sandra</td>
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<td>Phillips, Johnnie E.</td>
<td>A.B., M.A., Ph.D., University of Southern California.</td>
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<td>Phillips, Sandrine L.</td>
<td>A.B., Loyola University; New Orleans; M.A., University of Illinois.</td>
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<td>Phillips, Katherine D.</td>
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<td>Phillips, Thomas W.</td>
<td>A.B., University of Kansas; M.S., University of Kansas.</td>
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<td>Phillips, William H.</td>
<td>A.B., B.S., University of California.</td>
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<td>Phillips, Howard S.</td>
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<td>Phillips, Howard T.</td>
<td>A.B., San Diego State University; M.A., California State University.</td>
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<td>Pierucci, Mauro</td>
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<td>Piffard, Guerard</td>
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</table>

**Faculty / 521**
PILLSBURY, BARBARA L. K. (1972). Associate Professor of Anthropology

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<table>
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<tr>
<th>Name</th>
<th>Degree</th>
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<th>Field</th>
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<tbody>
<tr>
<td>Smith, Raynette H.</td>
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<td>Hebrew University, MA, Ph.D. University of Wisconsin</td>
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<td>Shira, Donald W.</td>
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<td>1966</td>
<td>Acting Associate Dean, Imperial Valley Campus</td>
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<td>Smith, Newton</td>
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<td>Smith, Hayden A.</td>
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<td>Smith, John F.</td>
<td>1968</td>
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<td>Professor of Psychology</td>
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<td>Smith, P.E. G.</td>
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<td>Smith, A. B. M.</td>
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<td>Smith, A. B. M.</td>
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<td>Smith, William R.</td>
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<td>Smith, William R.</td>
<td>1970</td>
<td>A.B., M.A., Arizona State University, Ph.D., Northwestern University</td>
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**Faculty / 527**
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