For additional information

- Admissions
- Athletics
- Counseling
- Employment of Students
- Extension Classes
- Financial Aid
- Fraternities and Sororities
- Grades
- Graduate Study
- Health Services
- Housing
- Imperial Valley Campus
- Library Facilities
- Overseas Study
- Parking
- Registration
- ROTC
- Scholarships
- Social Activities
- Summer Study
- Teaching Credentials
- Transcripts
- Veterans Benefits

consult:
- Associate Dean of Admissions and Records, AD 127
- Director of Athletics, PE 107
- Director of Counseling, 5630 Hardy
- Director of Career Planning, 5658 Hardy
- Office of Continuing Education, 5707 Hardy
- Director of Financial Aid, CL 122
- Student Resource Center, CL 107
- Registrar, AD 127
- Dean of the Graduate Division, AD 220
- Director of Health Services
- Director of Housing, 5860 Hardy
- Dean, 720 Heber Ave., Calexico
- Director of Library Services
- Office of Continuing Education, 5707 Hardy
- Chief of University Police, 5650 Hardy
- Registrar, AD 127
- Chairman, Aerospace Studies, BA 128
- Scholarships Adviser, CL5G
- Student Resource Center, CL 107
- Office of Continuing Education, 5707 Hardy
- Dean, School of Education, CL 106
- Registrar, AD 127
- Veterans Adviser, 5525 Hardy

General Catalog

and

Announcement of Courses

Volume 63

1976

San Diego State University
5300 Campanile Drive
San Diego, California
92182
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Map of San Diego State University Inside Back Cover

Annual Calendar

1976

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

1977

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

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## 1976-1977 Academic Calendar

### Summer Sessions, 1976
- June 1-19
- June 21-July 30
- August 1-31

### Fall Semester, 1976
- August 11, 13, 17, 20, 23, 24
- September 6
- Sept. 7, 8, 9, 13, 26, Oct. 5, 6, 7, 22;
- Nov. 16, 17, 18; Dec. 1, 2, 3, 6, 7

### Winter recess begins.
- First day of final examinations
- Last day to apply for a leave of absence for fall semester
- Last day to apply for refunds.

### Fall Semester, 1976
- October 11
- November 1-30
- November 11
- November 25-28
- December 1
- December 14
- December 15
- December 16
- December 24
- December 27
- December 30

### Spring Semester, 1977
- August 1-31
- Jan. 5, 7, 27, 28; Feb. 4, 8; Mar. 12; April 19
- June 21-July 29
- August 1-31
- August 2-20

### Summer Sessions, 1977
- May 12-21
- May 13
- May 14-21
- May 22
- May 25
- May 27
- May 30
- June 20-July 29
- June 24
- July 4
- August 1-19

### Academic Calendar

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications for admission or readmission to San Diego State University for the spring semester 1977. Accepted after this date only until enrollment quotas are met.</td>
<td>Jan. 6, 12, 14, 17, 18</td>
</tr>
<tr>
<td>Mathematics placement examinations for students planning to enter Chemistry 200 and 200L or 204A; Mathematics placement examinations for students planning to enroll in Mathematics 103, 104, 119, 120, 121, 140, 150, or Economics 142.</td>
<td>Jan. 10-21</td>
</tr>
<tr>
<td>First day, second semester.</td>
<td>Jan. 17</td>
</tr>
<tr>
<td>Reading Comprehension Test for elementary education.</td>
<td>Jan. 24</td>
</tr>
<tr>
<td>Applications for admission or readmission to San Diego State University for the fall semester 1977. Accepted after this date only until enrollment quotas are met.</td>
<td>Apr. 12, 13, 14; May 3, 4, 5</td>
</tr>
<tr>
<td>Applications for admission or readmission 10 San Diego State University for the spring semester 1977. Accepted after this date only until enrollment quotas are met.</td>
<td>Feb. 7, 8, 9; Mar. 16, 17, 18; April 12, 13, 14</td>
</tr>
<tr>
<td>Fall Recess.</td>
<td>Feb. 27</td>
</tr>
<tr>
<td>Holiday—Memorial Day.</td>
<td>May 30</td>
</tr>
<tr>
<td>Last day of spring semester.</td>
<td>May 30</td>
</tr>
<tr>
<td>Term II summer session (6 weeks).</td>
<td>May 31-June 17</td>
</tr>
<tr>
<td>Last day to apply for a leave of absence for fall semester.</td>
<td>June 20-July 29</td>
</tr>
<tr>
<td>Last day to apply for refunds.</td>
<td>June 24</td>
</tr>
<tr>
<td>Final examinations.</td>
<td>July 4</td>
</tr>
<tr>
<td>Grades due.</td>
<td>August 1-19</td>
</tr>
</tbody>
</table>
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 ACCEPTED FOR EXACT AMOUNT OF FEES. (YOUR CHECK IS RETURNED BY THE BANK FOR ANY REASON, YOUR REGISTRATION WILL 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.

- 0 units–3.9 units
- 4 units–7.9 units
- 8 units–11.9 units
- 12 or more units

The above fees also include a student activity fee of $10.00, a student union fee of $9.00 and a nonrefundable facilities fee of $3.00.

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) per year, approximately $40.00.

Parking Fees

- Nonreserved parking space, per semester
- Car pool—see cashier at registration

Less than four-wheeled, self-propelled vehicle $3.75

Miscellaneous Fees

Fees payable when service is rendered.

- Nonresident student enrolling in less than 15 units or fraction thereof—per unit

Health insurance (mandatory for foreign students) per year, approximately $40.00.

Late registration fee (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 returned for any cause

Loss or damage of equipment and library books

Graduation fee

Credentisl fee

Bank Americards

Students may use California BankAmericards (the first four digits must be 4019 or 4024) to pay registration fees up to and including $100. Amounts over $100 must be cleared with the University Cashiers Office in CL-108.

BankAmericard accounts are subject to a one percent “check service” fee. ($1 minimum.)

Master Charge

Approved for extension courses and summer sessions only.

REGULAR SESSION FEE REFUNDS

Fees may be refunded only as authorized by Sections 41902, 41903, 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, death, disability, compulsory military service), the number of days of instruction which have elapsed before application for refund is made, 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 and the appropriate procedure to be followed in seeking a refund may be obtained from the appropriate campus authority.

Student Services Fees

To be eligible for a refund of student services fees, a student must completely withdraw from the university. THERE WILL BE NO REFUND FOR A REDUCTION OF UNIT LOAD. To be eligible for a refund of a student services fee, 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, not later than 14 days following the day the academic term begins. All but $10.00 will be refunded. For additional information contact the Cashier’s Office or telephone 286-5253.

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:

<table>
<thead>
<tr>
<th>Time Limit</th>
<th>Amount of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before or during the first week of the semester</td>
<td>100 percent of fee</td>
</tr>
<tr>
<td>During the second week of the semester</td>
<td>90 percent of fee</td>
</tr>
<tr>
<td>During the third week of the semester</td>
<td>70 percent of fee</td>
</tr>
<tr>
<td>During the fourth week of the semester</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>During the fifth week of the semester</td>
<td>30 percent of fee</td>
</tr>
<tr>
<td>During the sixth week of the semester</td>
<td>20 percent of fee</td>
</tr>
</tbody>
</table>

Parking Fee

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

Nonresident space per semester:

<table>
<thead>
<tr>
<th>Period</th>
<th>Amount of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–30 days</td>
<td>75 percent of fee</td>
</tr>
<tr>
<td>31–60 days</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>61–90 days</td>
<td>25 percent of fee</td>
</tr>
<tr>
<td>91–end of term</td>
<td>None</td>
</tr>
</tbody>
</table>

For a refund, the parking sticker must be removed from the vehicle by a University Police Officer.

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

SUMMER SESSION FEES

Tuition, each session (per unit) $30.00

Activity Fee:

- Term I
- Term II
- Term III

Student Union Fee:

- Term I
- Term II
- Term III

Parking Fees (nonreserved spaces):

- Entire summer period
- Week six session
- Three-week session

EXTENSION COURSE FEES

Lecture or discussion course (per unit) $30.00
EXEMPTIONS
Students under Public Law 694, 87-815, California state veterans’ dependents, or state rehabilitation programs will have fees paid for tuition and materials and service under provisions of these respective programs.

No fees of any kind shall be required of or collected from those individuals who qualify for such exemption under the provisions of the Alan Pattee Scholarship Act.

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 23762. 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
The Student Services Fee was established in 1974 by the Trustees of The California State University and Colleges in lieu of the Materials and Service fee; however, the fee level was maintained at $144 (for 12 or more units for the academic year). It is intended that this new fee will provide 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, psychomelrists, 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.

The previous Materials and Service Fee covered not only the above expenditures but also the cost of instructional and audiovisual supplies and contractual services; however, a Task Force recommended that the responsibility for financing these expenditures be transferred to the State. It also suggested that the basis for the Student Services Fee be fully and clearly communicated to students and campus staff.

The 1976-1977 Student Services Fee is subject to change by Board of Trustees action as necessitated by budget actions of the executive and legislative branches of government.

Debts Owed to the Institution
From time to time the student may become indebted to the institution. This could occur, for example, when the student fails to repay money borrowed from the institution. Similarly, debts occur when the student fails to pay institution, dormitory, or library fees, or when the student fails to pay for other services provided by the institution at the request of the student. Should this occur, Sections 42380 and 42381 of Title 5 of the California Administrative Code authorize the institution to 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. For example, under these provisions the institution may withhold permission to register, and may withhold other services, such as grades and transcripts. If a student believes that he or she does not owe all or part of a particular fee or charge, the student should contact the campus business office. The business office, or another office on campus to which the student may be referred by the business 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.

Organization and Administration

The California State University and Colleges
Board of Trustees
Office of the Chancellor
San Diego State University
Advisory Board
Administration
Colleges, Schools, Departments
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 and fourteen of the nineteen campuses received 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. A limited number of doctoral degrees are offered jointly with the University of California.

Presently, under the system's "New Approaches to Higher Education," the campuses are implementing a wide variety of innovative programs to meet the changing needs of students and society. Among pilot programs under way are instructional television projects, self-paced learning plans, minicourses, and credit-by-examination alternatives. The Consortium of The California State University and Colleges fosters and sponsors local, regional and statewide external degree and certificate programs to meet the needs of individuals who find it difficult or impossible to attend classes on a campus.

Enrollments in fall 1975 totaled approximately 297,000 students, who were taught by a faculty of 16,000. Last year the system awarded over 57 percent of the bachelor's degrees and 36 percent of the master's degrees granted in California. Over 525,000 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 nineteen campuses of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. For the 1975-76 year, the total cost of operation is $657.2 million, which provides continuing support for 230,005 full-time equivalent (FTE) students. This results in an average cost per FTE student of $2,857 per year. Of this amount, the average student pays $262. Included in this average student payment is the amount paid by nonresident students. The remaining $2,595 in costs are 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, housing, and parking, as well as costs for extension and summer session work. Computations are based on full-time equivalent students, not individuals, and costs are prorated by system totals, not by campus. The average costs for a full-time equivalent student in the system are depicted in the following chart:

1975-76 Projection of Total Costs of Campus Operation
(Including Building Amortization)

<table>
<thead>
<tr>
<th>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>$538,523,843</td>
<td>$2,371</td>
<td>82.0</td>
</tr>
<tr>
<td>State Funding (Capital Outlay)**</td>
<td>29,138,200</td>
<td>127</td>
<td>4.4</td>
</tr>
<tr>
<td>Student Charges</td>
<td>60,374,319</td>
<td>262**</td>
<td>9.2</td>
</tr>
<tr>
<td>Federal (Financial Aids)</td>
<td>29,192,461</td>
<td>127</td>
<td>4.4</td>
</tr>
<tr>
<td>Total</td>
<td>$657,228,623</td>
<td>$2,857</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 enroll for more than 15 units; some students enroll for fewer than 15 units.

** The system's wide range of facilities and equipment on the 19 campuses is currently valued at approximately $1.16 billion, excluding the cost of land. Amortized over a 40-year period, they are valued at $17 per FTE student.

*** 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 total full-time equivalent student enrollment. Individual students may pay more or less than $262 depending on whether they are part-time, full-time, resident or nonresident students.

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Director of Veterans Affairs: Edward R. Mendez
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Athletics
O. Kenneth Karr, Jr.
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 Associate Dean: Robert S. Ackerly, Jr.
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 Associate Dean (Acting): Elmer D. Baldwin, Dean (Acting)
 Assistant to the Dean: James Harmon
 Coordinator, Extended Services: Alan C. Smith

General Information

Imperial Valley Campus
Special Programs and Services
Financial Aid
Student Services
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 School's first class met initially on November 1, 1898 in temporary quarters downtown while the first unit 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 guidance of Samuel T. Black, who left his position as State Superintendent of Public Instruction to become the first President (1898-1910).

Under the vigorous administration of Edward L. Hardy (1910-1939), the School was reorganized as a four-year State Teachers’ College in 1921, and supervision 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 of the present Community Colleges, was incorporated as a branch of State, where it remained through 1946.

By the time its first four-year bachelor's degree was granted, it became clear that San Diego State Teachers' College would soon outgrow its 17-acre site, and a campaign was begun to build a new campus. The Legislature agreed; provided the city furnish a new site and buy the old one. In 1928 the present site, on what was then the far eastern outskirts of the city, was approved by the electorate.

In February, 1931, the college relocated in the seven mission-style buildings surrounding what is now called Main Quad. In 1935, the Legislature dropped the word "teachers" from the title and permitted the expansion of degree programs into areas other than teacher preparation. Walter R. Heppner was appointed President (1935-1952) and the institution began a period of slow growth.

At the end of World War II there were fewer students enrolled than there are presently faculty members. In the quarter-century since, the campus grew phenomenally under the direction of President Heppner and his successor, Malcolm A. Love (1952-1971), until it is now the most populous campus in California. In 1960, the College became a part of the newly organized State College System under a statewide Board of Trustees and a Chancellor. In 1971, following a campaign spearheaded by President Love, the Legislature renamed the system The California State University and Colleges, and San Diego State College became California State University, San Diego.

Donald E. Walker, now President of Southeastern Massachusetts State University, served as Acting President from 1971-1972, and Brage Golding, President of Wright State University in Ohio, became the University’s fifth president in 1972. Dr. Golding, a chemical engineer, is the first president to come from a background other than teacher education, drawing to a close the University’s former primary emphasis. After a spirited campaign by the Alumni Association, legislation was passed in 1973 which changed the institution’s title to that preferred by the community: San Diego State University.

In recent years a number of new buildings have been added to accommodate the 32,000 students who attend, notably: Aztec Center, the first student union in the system; Dramatic Arts, with the finest theater in the county; Music, incorporating a Recital Hall; and the striking Malcolm A. Love Library, which has more floor space than all seven original buildings combined. A new Health Services building was opened in late 1974, and new Art and Humanities classroom buildings are presently under construction.

The curriculum is a far cry from that of 1898, although English, history and mathematics—joined now by psychology and sociology—still provide the greatest number of instructional hours. Students may now work toward a bachelor’s degree in sixty-six areas, a master’s in fifty-one, and the doctorate in three. A remarkable eighty-eight percent of the permanent teaching faculty possess the doctorate in those disciplines where it is the standard terminal degree.

A measure both of the distance San Diego State has come and of the stature it has achieved may be taken from the fact that the University was granted a charter for a chapter of the national honor society Phi Beta Kappa, the first of the System’s nineteen campuses to be so honored.

University Library

Faculty

Emeritus: Haynes, Kneay, McAmis, Murdock, Roy, Schailes
Director: Kenney

Assistant Director: Dickinson, F.

Librarians: Leerhoff, Szabo

Associate Librarians: Barclay, Gwinup, Harrington, Hoover, Marriott, Pease, Samples

Senior Assistant Librarians: Adams, Chan, Crisley, Dickinson, P., Denton, Goodwin, Goyne, Granrod, Greene, Harkavy, Johns, Moore, Neyndorff, Phillips, Posner, Sandelin, Shira, West

Assistant Librarians: Coleman, Hart, Lamb, Martinez

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 spaces for some 700,000 books, and will ultimately accommodate over a million volumes.

Presently the collection comprises some 870,000 volumes including books, bound periodicals, and government documents. Additional resources include some 1.05 million microfiche and microopaque cards, 34,000 reels of microfilm, 7,000 college catalogs, 61,000 items of curriculum materials, 25,000 scientific reports, 300,000 archival papers, and 2,800 phonograph records. The library receives some 10,000 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 business, medieval history, American history, Civil War history, Asian studies, Latin American history, colonial French African history, English literature (sixteenth and eighteenth centuries), music of the Middle Ages and the nineteenth century, medieval philosophy, American philosophy, and public administration. Strong research and special collections in the sciences cover the history of science, paleontology, biology, ornithology, astronomy, the history of astronomy, mathematics, chemistry, geology, the geologic history of Pacific Ocean invertebrate fauna, and the geology of San Diego County and Baja California.

The library provides a general and a specialized reference service in the social sciences and humanities, as well as separate reference services for sciences and engineering, government publications, and educational resources. Reference librarians assist students and faculty in their research and study, and librarians with advanced degrees in particular subject areas are available for reference consultation. Computerized information retrieval service, now in its initial stages of implementation, is also available.

Among the conveniences provided the users of the library are locational information desks in the main lobby, the periodicals reading room, and the microforms and listening center; numerous inexpensive photocopying machines including one for microfiche and microfilm; an inexpensive typewriter; coin-operated electronic calculators; listening equipment for cassettes, open-reel tape, and phonographic records; and most of the required textbooks at the limited-ban (reserve) room of the library.

Accreditation

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

American Assembly of Collegiate Schools of Business
American Council on Education
American Speech and Hearing Association Educational Training Board
California Board of Registered Nursing
California Commission for Teacher Preparation and Licensing
Council on Education of the Deaf
Council on Social Work Education
Engineers' Council for Professional Development
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 of Nursing
Western Association of Schools and Colleges
The journalism-news-editorial sequence is accredited by the American Council on Education for Journalism. The clinical services area of speech pathology and audiology is accredited by the American Speech and Hearing Association Professional Services Board. San Diego State University is approved by the Veterans Administration.

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 68 areas, the master's degree in 52 areas, and the Ph.D. in three areas. Some of its recent noteworthy innovative programs are in Afro-American studies, Asian studies, ecology, Jewish studies, Mexican-American studies, religious studies, and women's studies.

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 (with University of California, San Diego)
- Doctor of Philosophy in Ecology (with University of California, Riverside)
- Doctor of Philosophy in Business Administration
- Master of Public Administration
- Master of Business Administration
- Master of City Planning
- Master of Public Administration
- Master of Social Work

Nondegree programs leading to the Certificate in Applied Linguistics, the Certificate in Criminal Justice Administration, and the Certificate in Public Administration 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 Arts or Bachelor of Music degree in applied arts and sciences.
  3. **Professional curricula**: The School of Business Administration offers the Bachelor of Science degree in business administration with majors in seven fields; the School of Engineering offers the Bachelor of Science degree in engineering with majors in four fields; and the School of Education offers curricula in teacher education leading to graduate credentials at all levels of public school teaching.
  4. **Proprofessional and nondegree curricula**: Programs are offered in preprofessional, prelegal, and premedical, leading to transfer to professional schools. Nondegree programs are offered in public administration. The Air Force offers an ROTC program, leading to a commission in the Air Force Reserve.

- **Graduate Curricula**: The Graduate Division offers curricula leading to the Master of Arts or City Planning, the Master of Public Administration, the Master of Social Work, and joint-doctoral programs in chemistry, ecology, and genetics.

**Imperial Valley Campus**

**Faculty**

Professors: Baldwin (Acting Dean), Smith (Coordinator of Extended Services)
Associate Professors: Ayala, Franklin, Harmon (Associate Dean), Polich, J., Spencer, Wilson
Assistant Professors: Hill, King, Meister, Morris, Polich, K. (Librarian)
Visiting Professor: Bork
Lecturers: Allen, Alvarado, Brautigam, Dolinar, Escalera, Ferguson, Goodrich, Huerta, Jones, Najarian, Oates, Pattie, Quintero, Rice, Rocha, Rodney, Spaulding, Stuckey, Swanson, VonWerthof, Williams

**Location and Function**

The Imperial Valley campus is a division of San Diego State University. As such, it is fully accredited. Operating as a separate campus, its primary function is to provide upper division and graduate collegiate instruction for the desert area of Southeastern California.

The campus is located at Seventh Street and Heber Avenue in Calexico, adjacent to Rockwood Plaza, a park near the center of the city. The buildings housing this campus are of early Spanish style architecture, complementing the geographic location which is within walking distance of Mexicali, Baja California, Mexico, a city of approximately 500,000 population. The campus is 120 miles east of San Diego via U.S. Interstate Highway 8. Its buildings are fully air-conditioned in the summer.

The program at this campus is an integral part of San Diego State University and is under the general jurisdiction of the Vice President for Academic Affairs. The curriculum includes the recommended upper division and postgraduate program of courses leading to a bachelor's degree and/or the California Teaching Credentials. In addition to its regular program, the campus assists in the administration of extension courses for the area.

A major feature of this campus is to foster better understanding and relations between Mexico and the United States. Since the campus is located within walking distance of the Mexican metropolis of Mexicali, the student has a unique opportunity frequently to visit a foreign country and enjoy its educational, cultural and recreational attractions. Mexicali is linked by highways, bus, trains and airline to the rich cultural heritage of Hermosillo, Guaymas, Mazatlan, Guadalajara and Mexico City.

The climate of Imperial Valley is dry and mild most of the college school year, with recreation opportunities in the nearby Salton Sea, Gulf of California, and Colorado River. Desert recreation, hiking, and golfing are available.

Serving at the Imperial Valley campus are full-time resident faculty members in the areas of anthropology, art, criminal justice administration, drama, economics, education, English, geography, history, mathematics, Mexican-American studies, music, philosophy, political science, psychology, sociology, and Spanish. More than eighty percent of the full-time faculty possess the doctoral degree.

Part-time faculty, selected from outstanding professionals of Imperial Valley, augment the instructional programs of the Imperial Valley Campus.

Since the student-faculty ratio is low, personal student counseling can be provided. Each student is assigned a faculty adviser who assists him in arranging his program so that he is better able to realize his educational and occupational career goals.

**Program**

The program at the Imperial Valley Campus is limited to upper division and graduate students. The campus offers eleven majors leading to the bachelor's degree and a program designed to complete the California teaching credentials. The programs are similar to those described in this catalog, however, not all majors and minors are available at Imperial Valley Campus.

The Imperial Valley Campus is structured to serve the needs of the following: (1) community college graduates, (2) transfer students who have satisfactorily completed two or more years of college work with an accredited college, (3) students working for the B.A. or B.S. degree, (4) persons now teaching, but who want to complete requirements for the bachelor degree and/or a teaching credential, (5) inservice teachers holding either a provisional credential or a partial fulfillment of requirements credential, (6) other upper division or graduate students who wish to expand their academic preparation.

For those transfer students needing certain lower division college work in connection with their work at this campus, there are available in the area the Imperial Valley College, College of the Desert,
Mt. San Jacinto College, Palo Verde College, and Arizona Western College. These are public community colleges offering the first two years (60 units) of college course work.

This campus has a limited experimental student and faculty exchange with the two Mexican higher educational institutions in Mexicali, Baja California. Qualified students may be selected to attend classes for elective credit at either CETYS or Universidad Autonoma de Baja California.

Imperial Valley Campus schedules classes in three-hour blocks, seven days a week from 9:00 a.m. until 10:00 p.m., so that commuting students may earn 9 to 12 units each semester by attending classes one or two days a week.

THE WEEKEND UNIVERSITY was an early innovation at Imperial Valley Campus. Classes are offered Friday evening through Sunday, enabling students to earn up to 12 units of college credit each semester by attending classes on weekends.

A schedule of classes, with instructions for registration, is published each semester and can be obtained on request from the Dean of the campus approximately six weeks before the dates of registration. All tests required for the programs offered at this campus are administered on campus. In addition, the Graduate Record Examination, National Teachers Examinations and other tests are scheduled in accordance with the nationally advertised test dates.

Registration and Commencement
Registration for all classes offered at Imperial Valley Campus is held at the beginning of each semester (Fall, Spring and Summer) at the Calexico campus. Continuing students, and those admitted or readmitted by the university, will be mailed detailed instructions for registration. All but continuing students need to file applications for admission with the Dean's office at Calexico. Currently enrolled and previously enrolled students at the San Diego campus, registering for courses at Imperial Valley Campus, should notify the Dean's office in Calexico and request the Registrar's office at the San Diego Campus to forward student records to Calexico.

Commencement exercises are held once a year in Calexico at the end of the spring semester. Students graduating at the midyear, June graduates, and students completing requirements for graduation in the summer session are invited to participate.

Physical Facilities: Offices, Classrooms, Student Union, Bookstore, Library

The campus consists of a cluster of eight large buildings set in an acre landscaped area in the center of the city of Calexico. The buildings are of early traditional Spanish architecture, with thick plastered walls and red-tiled roofs.

The administration offices are located east of the central classroom building complex. All classrooms are large, comfortable and equipped with refrigerated or heated air conditioning to suit the season. Resident faculty members maintain offices on campus.

The student union is entirely separate from the office and classroom areas. The large six-room building is furnished with televisions, sofas, lounge chairs, small tables, and easily movable chairs for readily arranged conferences, meetings and study areas. Snack and restroom facilities are available to students seven days a week. The Associated Student Body offices are located in the administration office building.

Books and other instructional materials may be purchased at the start of each semester at the campus bookstore. In addition to textbooks and supplies, paperback books on a variety of topics are available to students.

The Imperial Valley Campus library is housed in the south wing of the central building complex. It contains over 21,000 volumes and about 200 periodical titles. Additional loan privileges are available to students and faculty through the library at the San Diego Campus and the Southeastern California area public and school district libraries. Books and reference materials are also available from the two Mexican collegiate institutions located in Mexicali, Baja California, Mexico.

A good collection of audiovisual equipment is available for classroom use, including closed circuit TV and monitors. Films and other instructional materials are available to the staff and students through the Audiovisual Departments of the San Diego Campus and of the Imperial County Education Center. Films are also rented from outside sources as needed.

Placement, Employment and Information
The university provides a centralized placement service in cooperation with the School of Education. Students are aided in securing part-time and full-time positions and in obtaining information concerning occupational trends. Staff members maintain contact with local organizations and community leaders to expand employment opportunities for graduates of this campus.

Further information on admission, registration, programs and classes may be obtained by writing the Dean of the Campus, Imperial Valley Campus, San Diego State University, 720 Heber Avenue, Calexico, CA 92231, or calling 714-357-3721.
Special Programs and Services

Teaching and Learning Council

The Teaching and Learning Council, composed of five faculty members, three students, and two administrators, was established in 1973 by the Faculty Senate. Its function is to promote and encourage the highest quality in teaching and learning on this campus.

The Council is authorized to grant temporary approval to courses which encourage innovative departures in methods of teaching and learning. In addition, it sponsors teaching improvement programs for faculty and teaching assistants, which include the following: an Instructional Development Program; symposia and workshops; faculty lecture series; evaluative studies and research; in-service opportunities for faculty professional development; a faculty newsletter; and a presidential Mini-Grant Awards program.

The Teaching and Learning Council sponsors University Studies courses, among which are interdisciplinary courses and courses characterized by new methods of teaching and learning. University Studies courses are proposed by faculty or by students acting through a faculty sponsor. After receiving approval from the departments and deans, proposals for such courses are submitted to the Teaching and Learning Council, which is authorized to grant up to four semesters approval, after which a faculty committee reviews and evaluates the courses.

Research Bureaus

Asian Studies

Darryl Milry, Director

The Center for Asian Studies is an interdisciplinary organization in the College of Arts and Letters, administering funds and other support for research and development in Asian Studies. The Center also assists in the development of the university's holdings in the Asian area and has created a special collection of library materials on Asian Studies.

Business and Economic Research

Darryl Milry, Director

The Bureau of Business and Economic Research is a center for organized research activity serving the needs of the School of Business Administration. Operationally, it is a part of the School of Business Administration, with a director and staff, but serves in addition as a coordinating agency for studies which concern the university as a whole. Fiscal matters are coordinated through the San Diego State University Foundation.

The principal objects of the bureau are to (1) conduct research in the areas of economics and business, with special reference to local and regional problems; (2) facilitate research in these areas through faculty and student, (3) seek cooperative arrangements with outside organizations for conducting specific research projects; (4) analyze and interpret local and regional data; (5) publish the results of its investigations in aid of faculty in publication of their research.

Graduate students and faculty are encouraged to make use of bureau facilities. The bureau is a member of the Association for University Business and Economic Research.

Counselor Education

Raymond Howard, Director

The Center for the Study of Counselor Education is an interdisciplinary task force under the administrative jurisdiction of the Dean of the School of Education. Social welfare, education, psychology, 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.

Economics Research Center

Robert Barkley, Manager

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 Laboratory and are currently utilized by the Economics Department, the Center for Research in Economic Development, the Institute of Labor Economics, and the local chapter of Omicron Delta Epsilon.

Bureau of Educational Research and Evaluation

Peggy Hawley, Director

The Bureau of Educational Research and Evaluation operates within the School of Education. The objective of the bureau is to improve the quality of education through research by (1) assisting departments within the School of Education in their evaluation of courses and student performance, (2) serving faculty graduate advisers 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 School of Education and other educational communities, and (5) keeping faculty informed about current and potential bureau research activities and services.

European Studies Center

Emest M. Wolf, 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. It also 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.

Languages and Culutures

Latin American Studies

Emest C. Griffin, Director

The Center for Latin American Studies seeks to encourage teaching and research related to Latin America. It has primary responsibility for the administration of the Latin American undergraduate and graduate degrees. The center sponsors a Latin American Studies Lecture Series which is endowed with public lectures given by guest speakers and members of the San Diego State University faculty who discuss a variety of Latin American topics. 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, LE-543.

Center for Marine Studies

Richard F. Ford, Director

The Center for Marine Studies was established to coordinate and represent the multidisciplinary marine studies programs offered by departments within the University. To aid in the development
Sociology Research
Douglas Kirby, Director

The Sociology Research Center is a facility of the Department of Sociology. It provides physical equipment and space for the planning and processing of sociological research projects, such as area of investigation as urban growth and development, demographic factors, and housing surveys. The center is administered by the Department of Sociology by a director whose duties include consulting assistance in the design and execution of studies and in the preparation of proposals to funding agencies.

Social Science Research Laboratory
Warner Bloomberg, Jr., Interim Director

The Social Science Research Laboratory houses the Economics Research Center, the Sociology Research Center, the Political Science Research Center, and the Map Library of the Geography Department, in addition to computer facilities for research and instruction in the social sciences.

Survey Research
Oscar Kaplan, Director

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

Computer Center

The Computer Center is established to encourage and support the use of computers in all instructional, research and administrative activities of the University. The present equipment includes a large-size digital computer—an IBM 360 Model 50 with 583,216 bytes of core storage and a large array of peripheral devices. The supervisor is the Disc Operating System which supports the Assembler, COBOL, FORTRAN, PHL and RPG languages. Remote job entry facilities are located on the east and west sides of the campus. A smaller digital computer, an 8K IBM 1130, supports the APL and FORTRAN languages and has a plotting capability. A dual CDC3300 located at the Chancellor's Office for statewide usage is available to campus users via a high-speed data link. Over 70 timesharing terminals are strategically located throughout the campus and are available via dial-up telephone lines to either a DEC 11/45 on campus or to the statewide timesharing system. Programming and data processing courses and courses related to some specialized applications of computers 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 Foundation was organized as a separate auxiliary in 1943 to assist the University in obtaining support for research and educational programs from outside funding agencies. Since then, 2,600 separate contracts and grants have been administered by the Foundation, and faculty and students are presently engaged in about 200 projects sponsored by some 20 outside agencies involving over $10,000,000. Such projects serve to enrich teaching and research programs of the University, to develop further expertise of the faculty, to contribute new knowledge and to provide even greater public service than would otherwise be possible. The Foundation is governed by a Board of Directors consisting of faculty, students and administration, and is administered under general policies developed by the University and the Trustees.

Audiovisual Center

In general the center provides professional assistance in the application of educational technology to achieve maximum efficiency in instruction. These functions include: (1) consultation on selection, acquisition, preparation, utilization and evaluation of instructional media and equipment, (2) organizing, equipping and maintaining instructional media facilities and resources, (3) developing and operating a service to provide, maintain and circulate instructional media and equipment for instruction; and (4) preparing materials required for instruction but not conveniently available from other sources.
Financial Aid

Cost of Living
Each student should plan his budget based on individual needs. The wide range of financial resources of students in a university as large as ours makes it difficult to give specific information on costs. At San Diego State University, it is possible to live and participate moderately in campus life on a modest budget. The following table is based on system-wide figures provided for the purpose of determining financial aid.

<table>
<thead>
<tr>
<th>Estimated Expenses for the Academic Year</th>
<th>Living on Campus</th>
<th>Commuting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials, service, student activity</td>
<td>$188</td>
<td>$188</td>
</tr>
<tr>
<td>student union fee, facilities fee</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>450</td>
<td>400</td>
</tr>
<tr>
<td>Personal</td>
<td>1375</td>
<td>500</td>
</tr>
<tr>
<td>Room, board, health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board, incidentals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation, parking</td>
<td></td>
<td>450</td>
</tr>
<tr>
<td>Total</td>
<td>$2213</td>
<td>$1738</td>
</tr>
</tbody>
</table>

In addition, foreign students and out-of-state students pay an annual tuition of $1300. Typical expenses for married students without children average $4645 for a nine-month period.

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 limited. Financial aid in the form of loans, grants, and part-time employment on or off the campus is made available to qualified 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.

Some loan programs—those for prospective teachers, nurses and law enforcement agents—provide for partial cancellation of the indebtedness if after graduation the recipient is employed full time in the designated area. Some interest-free loans of modest size are available for emergencies. Some outright grants can be made to students from low-income families who would not, but for such a grant, be financially able to pursue a course of higher education. Some grants are also available to full-time employees of certain law enforcement agencies. All financial aid funds are available only to U.S. citizens or permanent residents.

Applying for Aid
All these financial aid programs, as well as others not described here, are administered by the Financial Aid Office, Room 122, Campus Laboratory School building. Interested persons should ask for the Financial Aid brochure. Counselors are available for guidance as to the most appropriate aid program for the individual.

A form titled "Preliminary Financial Aid Application for 1976-77" is contained as Part C in the Admissions Application booklet. However, additional information is required for evaluation and determination of financial need. Instructions and any required additional forms will be furnished to those students for whom space at San Diego State University has been reserved. All such additional forms or requested documentation must be returned to the Financial Aid Office.

A completed Financial Aid application includes a Parent's Confidential Statement (PCS) or a Student's Financial Statement (SFS). The PCS form may be obtained from your school counselor. It should be filed as soon as possible, in accordance with instructions therein. The SFS form is to be used by independent and married students; it may be obtained from your school counselor or from the Financial Aid Office; it should be filed as soon as possible in accordance with instructions therein.

California State Scholarships
Administered by the California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814. SAT scores are required for applicants for State Scholarships. Both SAT forms and the State application forms are available in the Scholarship Office during the annual application period, which for the 1976-77 academic year opens in September and ends December 6, 1975. Financial need must be shown for State scholarships. Renewals are granted for up to four years provided that the student is eligible to re-enroll in school. For the 1975-76 year, 650 San Diego State University students received awards covering fees. Major changes are expected for the 1976-77 program.

California State Fellowships
For the 1975-76 academic year approximately 800 State Fellowships were awarded for the entire state. Of these, 11 were awarded to graduate students attending San Diego State University. State Fellowships are limited to 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 State Scholarship and Loan Commission. Student 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 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 $120. State Fellowships are granted for one academic year (September through June). They are awarded after consideration of both academic and financial characteristics and critical manpower needs. 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 in the circumstances of each applicant. Original application forms for the 1976-77 program will be available from the Scholarship Office during November through mid-December, 1975. State Fellowships are renewable for up to three additional years. Renewal applications are automatically mailed to each State Graduate Fellowship recipient in mid-April.

Scholarships and Fellowships Administered by Departments
During the 1974-75 academic year, about 365 students received scholarships, fellowships, grants, or stipends totaling approximately $446,000 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 adviser in the department of their major to determine what scholarship, fellowship, grant, or stipend support might be available to them.

Scholarships Administered for Students Selected by Donors
For the 1974-75 academic year, about 369 students received scholarships totaling approximately $134,000 for an average award of about $360 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 Danforth, Fulbright, Ford, Rotary, Rhodes, and Marshall scholarships. Since limitations are placed on each college or university as to the number of applications it may endorse, 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. Since 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, 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.

San Diego State University Scholarships

The San Diego State University Scholarship Committee awarded approximately 323 scholarships totaling about $56,000 for the 1974-75 academic year. The awards averaged about $175. These scholarships were donated by a number of individuals and organizations with stipulation that the Scholarship Committee select the recipients. Application forms for applying for the 1976-77 program will be available in the San Diego State University Scholarship Office on December 1, 1975. The deadline for applying will be February 25, 1976. Selections are based on recommendations received from the various department chairmen and financial need. Recipients will be notified by June 1, 1976.

In addition to the scholarships granted to students directly by organizations and individuals, the following scholarships are awarded through the Scholarship Committee:

- Allstate Foundation
- American Business Women
- American Society of Military Comptrollers
- American Society of Women Accountants, San Diego Chapter
- Amsden Memorial
- Associated Students
- Audio Music Company
- Aztec Shops
- Baronoffsky, Dorothy Memorial
- Biehl, Martha S. Memorial
- Binder, Philip
- Brooks, Baylor
- Brown, Dr. Leslie P.
- Buckley, Marcella
- Burgener, Clair W.
- California China Painters Art Assn.
- California Fed. of Women's Clubs
- California PTA
- California Real Estate Association
- California Retired Teachers
- California Society CPAs-Women's Auxiliary
- California State Assn. Emblem Clubs & Nevada-Hawaii Clubs
- Cap and Gown - May Finney Marcy
- Center for Public Economics (Anonymous)
- Chi Omega
- Cleator, Robert K.
- Cooper, SamDora Memorial
- Copley Newspapers
- Country Friends
- Cramer, Harry
- Cressley, Sharon A. Memorial
- Delta Kappa Gamma
- Downtown Optimist Club
- Driver, Robert F. Co.
- Ellis, George William Memorial
- Everson, Beatrice
- Faculty-Alumni Public Administration
- Fleet Foundation
- Fletcher Foundation
- Fontaine, Amelia Memorial
- Foster, Frank Memorial
- Fox, Gerald
- Fox Foundation
- Geldreich, Dr. Edward
- General Dynamics
- Gore, Bonnie Jean Memorial
- Hayes, Mr. & Mrs. Lester
- Heartland Human Relations Association
- Hess, Robert C. Memorial
- Hodgetts, Mabel Memorial
- Intelcom Radi Tech
- Irwin, Oscar
- Jones, Sybil Elza Memorial
- KFMB
- LaSalle, William Memorial
- Linkletter, Art
- Lodge, Catherine Yuhanna
- Macy, May Finney Memorial-Cap and Gown
- Mayor's Bridges to Business
- Mogaher, Samuel E. Family Foundation Bicentennial
- Morrison, Alvin Memorial
- Mortar Board Alumni of San Diego
- National Council of Jewish Women
- Nuttal-Styris, Inc.
- Otberg, Lotte E. Memorial
- Pacific Beach Jr. Women's Club
- Paino, Miriam Memorial
- Pan American League of San Diego
- Paul, Paul
- Phi Epsilon Phi
- Phi Lambda Theta
- Post, Foster Memorial
- Post, Dr. Lauren C.
- Public Relations Club of San Diego
- Rabin, Mr. & Mrs. Seymour
- San Diego Assn. Childhood Education
- San Diego Imperial County Labor Council
- San Diego State University Alumni
- San Diego State University Memorial
- See, Pierre Belle Memorial
- Shields, Robert Patterson Foundation
- Sigma Alpha Gamma Upsilon Chapter
- Sigma Alpha Iota Alumnae
- Silvergate Lions Club
- Silverman, Anna & David Memorial
- Simpson, Mr. & Mrs. Arthur
- Solar
- SPEBSQSA
- Spanish Village Art Center
- Standard Oil Company of California
- United Commercial Travelers
- California Ladies Club
- United Jewish Federation of San Diego
- Union Oil Company
- Ward, Lola Memorial
- Watson, Donald, Jr.
- Whittier, Guiford H. Foundation
- Williams, DeWitt Bistiee
- Zweck, Mr. & Mrs. John Memorial
**Student Services**

**University Counseling Center**
Located at 5630 Hardy Avenue, the Counseling Center is a place where enrolled students and other members of the University community come for a wide range of services designed to enhance the total human experience at San Diego State. Professional counselors and supervised graduate students provide, without charge, confidential personal services in four major areas: (1) academic advising and program planning assistance for students who have not declared majors, (2) educational and vocational assistance to students through counseling on career choice and curriculum selection, (3) counseling with regard to problems of personal and social development, and (4) consultation with student groups, faculty, staff and administration. Under the direction of the Director, Dr. Melinda S. Sprague, the Center provides these services.

**Health Services**
As a part of the program of student personal services the University provides health services for the protection and maintenance of student health. These services are administered under the supervision of a medical director-administrator. A full-time physician staff is available to the students when school is in regular session. Nurse practitioners are also available to assist physicians in providing consultation, treatment of minor physical conditions, emergencies, and counseling for follow-up care. A staff of full-time nurses and technologists is also on duty when school is in regular session. Special clinics include Family Planning, Ear, Nose and Throat, Dermatology, Gynecology, and Orthopedics. Professional counseling psychologists are also available in the building daily.

A health history is required from all students prior to admission. In addition to the health history, students must show proof of having had a tuberculin test at some time during the preceding year. For students who have not had such a test, the procedure may be completed without charge at health services. A physical examination is recommended for all entering students but is not required. Careful attention is given to students undergoing private remedial treatment and food or to students whose physical condition requires a modified study schedule. Food services and a limited participation in athletic activities are also available to students having no private medical insurance coverage. This insurance covers hospitalization and specified medical services and may be purchased by the semester or by the year through Aztec Shops. An open enrollment period is available the first thirty days of each semester.

**Career Planning and Placement Center**
What will I do for a living? This is a question that is uppermost in the minds of many students when they first arrive on the campus. Students spend increasing amounts of time considering the question as their collegiate career passes; probably every graduating student is concerned with finding the best possible answer— for that individual—to the question. The Career Planning and Placement Center does not find the answer for any student; it does strive to help all students find the answer for themselves.

The Center is open from 8:00 a.m. to 7:00 p.m. Monday through Thursday, and from 8:00 a.m. to 4:30 p.m. on Friday. Career counselors work with individual students on a one-to-one basis and also work with groups of students through workshops in life planning and career decision making as well as seminars in interview techniques, resume preparation, and job search strategies.

In addition to the counseling staff, the Center also has an extensive library that is available to all students. The material in the library is concerned with information on employment opportunities, aids in making a career or academic major decision, and audiovisual material on careers. A special section is reserved for students who are planning to enter graduate or professional school.

In addition to helping the student become established in the world of work following graduation, the Center also assists individual students in finding part-time and summer employment while in school. Cooperative education programs between industry and government and the University are established and coordinated through Career Services.

As a student nears graduation, opportunities for interview with potential full-time employers are arranged by the Center. The Center also maintains an evaluations file for alumni who are involved in an education career as well as others whose employment may require such a file, and publishes a regular newsletter of current job vacancies in education, government and industry.

**Vocational Rehabilitation Services**
A student who has a physical or emotional disability which handicaps him vocationally may be eligible for the services of the State Department of Rehabilitation. These services include vocational counseling and guidance, training and job placement. He may qualify also for financial assistance for educational and medical needs and to meet living expenses.

For further information, students should apply to the department at its district office, 1350 Front Street, San Diego, or call 232-4361.

**Audiology Diagnostic Center**
The Audiology Diagnostic Center is a service of the Speech Pathology and Audiology Department. It is located on the lower floor of the Education Building. The principal objectives of this center are to provide diagnostic information regarding hearing loss for faculty, students, staff and the community. A student who has a hearing problem may be referred by any member of the University community. A minimal fee is charged for diagnostic evaluations. This center operates throughout the school year.

**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, 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 included. 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-referrals.

**Clinical Training Center**
The Clinical Training Center prepares university students at the undergraduate and graduate levels to identify and diagnose children's and young adults' psychological and physiological difficulties, to teach and give remediation, and to test and counsel. Students from the departments of Education, Psychology, Social Work and Speech Pathology and Audiology receive a variety of carefully planned experiences, including an opportunity to work with children and youth under supervision on a one-to-one ratio or in very small groups. In addition, they take part in frequent staff meetings which utilize the interdisciplinary approach toward solution of children's problems. Meetings with parents of the children with whom they work is a regular function of the training program.

While the primary purpose of the Center is to train teachers and clinicians, a community service is offered to those who have problems with school and dissemination of information. Referrals are ordinarily made by schools, other agencies, vocational planning, and the Student Resource Center. Referrals are made by schools, other agencies, vocational planning, and the Student Resource Center. Referrals are ordinarily made by schools, other agencies, vocational planning, and the Student Resource Center. Referrals are ordinarily made by schools, other agencies, vocational planning, and the Student Resource Center.

**Clinical Training Center**
The Clinical Training Center is located in the Campus Laboratory School and is open from 8:00 a.m. to 4:30 p.m. weekdays. The Answer Van (by the Aztec Bookstore) is open from 8:00 a.m. to 4:00 p.m. daily.

**Student Resource Center**
The Student Resource Center is designed to assist the students at San Diego State University by providing a central agency to help in the location and dissemination of information.

To meet this objective, the Student Resource Center maintains the Answer Van, organizes new student orientation programs, publishes a weekly calendar of campus events, and distributes information. The Center's counseling service is also available to students. The Center also maintains an extensive library that is available to all students. The material in the library is concerned with information on employment opportunities, aids in making a career or academic major decision, and audiovisual material on careers. A special section is reserved for students who are planning to enter graduate or professional school.

In addition to helping the student become established in the world of work following graduation, the Center also assists individual students in finding part-time and summer employment while in school. Cooperative education programs between industry and government and the University are established and coordinated through the Career Center.

As a student nears graduation, opportunities for interview with potential full-time employers are arranged by the Center. The Center also maintains an evaluations file for alumni who are involved in an education career as well as others whose employment may require such a file, and publishes a regular newsletter of current job vacancies in education, government and industry.
Aztec Center

San Diego State University was the first of The California State University and Colleges to build and operate a permanent university center. The Aztec Center story started in the mid-1930's when students and faculty began accumulating funds for construction. In 1956, the Associated Students Council levied a percentage of the Activities Fee for the building fund. Students voted to assess themselves a mandatory fee for the further 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 paid for with student funds and contributions from Aztec Shops, Ltd. From inception to the finalities of interior furnishings, students and faculty have shared alike in all phases of its planning and development. Financed by a student union fee, the Center is not only self-sustaining, self-liquidating, non-tax-supported, student-financed operation. Government 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. Use of the Center facilities is the privilege of San Diego State University students, faculty, staff, alumni and their guests. It provides a pleasant background for many cultural, social and recreational activities. Its name reflects its unifying nature, a dynamic, enriching focal point for the social life of members of the campus community.

The 120,000 square foot structure houses a portion of the activities program and includes several lounges, conference rooms, bowling lanes, billiards, table tennis, an information booth, contract Post Office, ticket office, lost and found, barber shop, student government center, a snack bar (Monty's Den), general store, a large hall (Montezuma Hall) for lectures, movies and concerts, Wilderness Center (backpacking information and equipment), and the Backdoor—San Diego State's Concert Club.

The Center also operates several satellite facilities under the umbrella structure of the Aztec Center program:

- Scripps Cottage and Park. A quiet relaxing lounge on the west side of campus, complemented by Scripps Park.
- Aquatic Center. Located on Santa Clara Point, Mission Bay. Classes (noncredit only) and recreational opportunities are available in the areas of sailing, waterskiing, surfing, scuba and sweep rowing. Over 55 boats are available for student use.
- Crafts Center. 5268 Hardy Avenue (just across the street). A complete crafts center offering instruction and use of materials in a wide range of crafts activities. Crafts materials may also be purchased.

Child Care Center Program

The Associated Students Child Care Center, operated under the concept of parent participation and control of all facets of its program, is located on the Campus Laboratory School playground across from the Business Administration building. The Center is open during the academic year from 7:30 a.m. to 5:00 p.m. Monday through Friday. Children of SDSU students between two and five years of age in good health are eligible for enrollment with first priority given to families with the greatest financial need; faculty/staff children are accepted on a limited basis.

Tuition ranges from $20 to 50 per hour based on family income, plus small snacks and milk fee for those children scheduled during mealtimes and a diaper fee for those children who are not yet toilet trained.

The program is staffed by four paid employees, volunteers, and parents, and participation is on a voluntary basis. Parents are expected to make a weekly contribution of time as teachers in the program and a monthly contribution to a working committee. They also have the opportunity to run for the parent governing board. The program is designed to develop and strengthen the child's sense of self and feeling of competency in a safe, healthy, stimulating environment.

Applications can be obtained by writing to the AS Child Care Center, San Diego State University, San Diego, California 92182.

Aztec Shops

Aztec Shops, Ltd. is a nonprofit campus auxiliary organization serving 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 check-cashing, free notary service, ticket sales, lost and found, a contract post office and a copy center.

The bookstore provides required textbooks, assigned class materials, reference works and offers a large selection of general interest books and supplies.

Alumni Association

The Alumni Association seeks to maintain a continuing and congenial relationship between the University and its former students.

The primary purpose of the association is the promotion of the welfare of the University. The association carries on the purpose through fund-raising activities. Contributions are turned over to the University to assist in the funding of scholarships, faculty chairs, equipment and building programs along with other worthy causes when needed. Secondary purposes of the association are the dissemination of educational information, in behalf of the University, to members of the association and, upon occasion, the association serves the University administrative sounding board to collect information or opinions from the alumni regarding programs and policies.

Association publications include the quarterly Alumni News and semiannual informational brochures with news and information about the University.

Membership in the association is open to any former student who attended regular or continuing education classes for at least a semester, as well as members of the faculty and staff.

University Housing Services

Residence Halls

Accommodations for 1669 single students are available in six residence halls on campus. Each of the buildings is fireproof and air-conditioned throughout. Five red-brick halls accommodate 211 students each, with sleeping and study facilities on a two-students-per-room basis. The sixth residence, which is a high-rise building, accommodates 614 students. Study hours are agreed on by residents and staff. Participation in campus activities is encouraged. Student governments and hall residents and staff. Participation in campus activities is encouraged. Student governments and hall residents in each of the halls recommend standards for basic behavior in the residence halls. Each of the residence halls is staffed by personnel appointed by the Director of Housing.

Currently, the cost for room, including linens, is approximately $350 to $450 per semester. Three food service plans (19, 14 or 10 meals per week) are offered in the Commons at additional charges ranging from approximately $250 to $350 per semester, on an individual basis. It is the responsibility of each student to contact the Housing Office if one wishes to obtain on-campus housing. Applications are given priority in this order: students living in residence hall are admitted to the University, when you receive a contract, and your first payment is received as specified. A student may apply as early as a year in advance. Applications are taken in order of date received. A student's specific assignment cannot be guaranteed.

No reservation can be confirmed until the student is accepted for admission into San Diego State University. Receipt of a housing contract does not mean that the University is committed to admitting the student. The deposit will be refunded if a student, after having submitted his housing application, is denied admission to the University.

During the Summer Sessions, rooms are available on a first-come, first-served basis. A nonrefundable security deposit should accompany a request for reservation.

Off-Campus Housing

Adjacent to the campus is a nine-story privately owned and operated coeducational residence hall for San Diego State University students. Room and board are available for 568 students.

No reservation can be confirmed until the student is notified of his acceptance into the 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 nonrefundable security deposit should accompany a request for reservation.

The copy center provides xerox copying, poster printing, binding and collating. Food services operates East Commons, West Commons and Monty's Den cafeterias. In addition, a meal ticket program is available to any enrolled student with 19-, 14- and 10-meal options.
Greek Letter Groups

There are 10 national sororities at San Diego State University which provide accommodations for approximately 290 women. A formal rush program is held during the fall semester while informal rush continues throughout the entire year. For further information contact Panhellenic, c/o University Housing Office, San Diego State University, 5300 Campanile Drive, San Diego, California 92182.

The 15 national fraternities invite students for membership throughout the academic year and summer months. Interested students may obtain further information by writing to the Intrafraternity Council, c/o University Housing Office, San Diego State University, 5300 Campanile Drive, San Diego, California 92182.

Transportation and Parking

Bus line transportation to the University, connecting with all areas of the metropolitan area, is available daily, except Sundays and holidays. Route 36 operates north-south on College Avenue, between the campus and the College Grove Shopping Center at Ryan Road and Spring Valley Shopping Center at Sweetwater Road. Transfer points for connecting east-west bus lines are at Montezuma Road with Route E—Fletcher Hills; at El Cajon Boulevard with Route E; at University Avenue with Route 7; and at Streamview Drive with Route 8. Route 80 express runs from Pacific Beach to Grossmont Center with a stop at Montezuma Road and College Avenue, connecting the beach area with the campus.

On-campus parking is scarce and is by permit only. Visitors should stop for a permit at the Campanile Information Booth entrance to the campus.

Educational Opportunities Program

This program is designed to assist undergraduate students from minority 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 and its supportive services attempt to insure that each student shall have the opportunity to reach his or her fullest potential.

Veterans Services

The Veterans Affairs Office (VAO) is a one-stop center conveniently located one block off campus at 5525 Hardy Avenue. Peer counselors provide immediate assistance and/or referral from 8:00 a.m. to 7:00 p.m., Monday through Thursday, and 8:00 a.m. to 4:30 p.m., Friday.

Services provided include employment, academic, financial aid and personal counseling, as well as tutorial assistance.

All paperwork regarding Veterans Administration Educational Benefits is processed here. It is the first step for all eligible veterans and dependents wishing to receive benefits. Advance payments of GI Bill benefits can be arranged by contacting the office at least two months prior to the beginning of a semester. The “Veterans Viewpoint,” a monthly publication, is sent to all users of VAO services and keeps them informed of important dates and developments. The telephone number is 286-5813.

Disabled Students

Disabled Students Services functions as a liaison for disabled students on campus. The goal is to provide information, services, and academic, personal and vocational counseling for students as needed.

This office also acts as a referral service for interpreters, attendants, readers, notetakers, typists, and housing. Disabled Students Services will help a student make arrangements to have a class rescheduled in an accessible classroom. Five specially modified vans enable students who are unable to drive or use public transportation to get to and from campus and field work. An electric golf cart is also available for those students who need help with mobility around the campus. Special parking facilities (authorized by the Disabled Students Services and the Health Services) is another service offered to the disabled student. A TTY (telephonic typewriter) for use by the deaf, as well as other special equipment, is available in the Disabled Students Services Office.

For further information concerning special orientation to campus, special maps, accessible restrooms or information about inaccessible classrooms, please contact the Disabled Students Services in Room 110B, Campus Lab School, 286-6473; or TTY at 286-5417.
Undergraduate Admission Requirements

First-Time Freshmen 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. The full table of grade point averages, with corresponding test scores and the equation by which the index is computed, is reproduced on the following page. Test results of either the CEEB Scholastic Aptitude Test (SAT) or the American College Testing Program examination (ACT) are acceptable in establishing eligibility.

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 188  
Iowa City, Iowa 52240

SAT Address  
College Entrance Examination Board  
P.O. Box 592  
Princeton, New Jersey (8540)

First-Time Freshmen (California high school graduates and residents). An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have an eligibility index which places him among the upper one-third of California high school graduates. The minimum acceptable index for residents on the SAT score is 307; using the ACT score, 741.

First-Time Freshmen (high school graduates from other states and U.S. possessions). The admission requirements for nonresident applicants are more restrictive than those for California residents. An applicant who is not a nonresident for tuition purposes is and a graduate of a high school outside California must have an eligibility index which places him among the upper one-sixth of California high school graduates. The minimum acceptable index for nonresident applicants on the SAT score is 342; using the ACT score, 826.

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. The minimum acceptable index for nonresident applicants on the SAT score is 342; using the ACT score, 826.

Eligibility Index

The following chart is used in determining the eligibility of graduates of California high schools (or California legal residents) for freshman admission to a CSUC campus. Grade point averages are based on work completed in the last three years of high school, exclusive of physical education and military science. Scores shown are the SAT total and the ACT composite. Students with a given G.P.A. must present the corresponding test score. Conversely, students with a given ACT or SAT score must present the corresponding G.P.A. in order to be eligible.

The minimum eligibility index is: SAT = 307 and ACT = 741. The index is computed either by multiplying the grade point average by 800 and adding it to the total SAT score, or multiplying the grade point average by 200 and adding it to 10 times the composite ACT score.

Undergraduate Transfers (Resident and Nonresident)

Beginning fall term 1974, transfer eligibility is based on transferable college units attempted, rather than on all college units attempted. The California community college transfer should consult his college counselor for information on transferability of courses. An applicant in good standing at the last college attended may be admitted as an undergraduate transfer if he meets either of the following requirements:

1. He was eligible for admission in freshman standing (see First-Time Freshmen requirements) and has earned an average grade of "C" (2.0 on a scale where A = 4.0) or better in all transferable college units attempted.

2. He has completed at least 56 transferable semester units or 84 transferable quarter units with an average grade 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.
Evaluation of Transfer Credits

Native speakers from foreign countries who have finished high school or the equivalent in that country, with the exception of Spanish, will not be given credit for taking the elementary courses offered in that particular language. They will not be given credit for conversation courses in their native tongue.

Other Applicants

Applicants not admissible under one of the above provisions should enroll in a community college, or other appropriate institution. Only under the most unusual circumstances will such applicants be permitted to enroll. Permission is granted only by special action.

San Diego State University offers a special program designed to expand educational opportunity for capable young people who, for a variety of reasons, have not previously had the opportunity. 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 University for postgraduate study must apply for admission to San Diego State University through the Office of Admissions. In making the application, they must observe the procedures outlined above.

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 of at least 2.5 (on a five-point scale) in the last 60 semester (90 quarter) units attempted; and (c) have been in good standing at the last college attended. Admission to a State university or college with unclassified postbaccalaureate standing does not constitute admission to graduate degree curricula.

Postbaccalaureate Standing (Classified)

A student who is eligible for admission to a 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 (Conditionally Classified)

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

Graduate Standing (Classified)

A student who is eligible for admission to a 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 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 $42 per year or $21 per semester. Applicants for admission as either graduates or undergraduates whose education has been in a foreign country should file an application for admission to a State university or college at least six months before the beginning of the fall semester. All applicants should submit proof of their scholastic achievements. In the case of inadequate school records, standardized tests of scholastic achievement will be required. All students holding a baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by an appropriate campus authority, have attained a grade point of at least 2.5 (on a five-point scale) in the last 60 semester (90 quarter) units attempted, and have been in good standing at the last college attended. Admission to a State university or college with unclassified postbaccalaureate standing does not constitute admission to graduate degree curricula.

Non-Resident Students

Those who have attended a non-Resident State University with the exception of Spanish will not be considered for admission to a State university or college under the above provisions. Non-Resident State University offers a special program designed to expand educational opportunity for capable young people who, for a variety of reasons, have not previously had the opportunity. For detailed information regarding admission to this program, refer to the section of this catalog on the Educational Opportunities Program.

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

After a student has been admitted to the University, his first basic step is to register for classes. Registration at San Diego State University is held prior to the beginning of each semester and each summer session. The dates for registration are announced in the Class Schedule, which is issued each semester. Schedules are available at the University bookstore up to 4:00 p.m. on the first day of registration. Fee information is available from the University bookstore. Students who cannot be present at time of registration and depend on the number of units selected. Students who cannot be present at time of registration may have another person register for them at the request of the student or the faculty. The person designated to register may have his or her ID card and must pay his fees. He will also be required to provide necessary data on the student information card. Late registration at San Diego State University is possible only in cases of genuine emergency. This involves petition action and additional fees and in no case is permitted beyond the first week of class.
Determination of Residence for Nonresident Tuition Purposes

New and returning students of The California State University and Colleges are classified for the purpose of determining the residence of each student for nonresident tuition purposes. The Residence Questionnaire and, if necessary, other evidence furnished by the student is used in making these determinations. A student may not register and enroll in classes until his Residence Questionnaire has been received by the Admissions Office.

The following statement of the rules regarding residence determination for nonresident tuition purposes is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes in California is found in Education Code Sections 22800-22865, 23751, 23751.1, 23754-23755, 23758.2 and 23762, and in Title 5 of the California Administrative Code, Article 4 (commencing with Section 41000) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

Legal residence may be established by an adult who is physically present in the state while, at the same time, intending to make California his permanent home. Steps must be taken at least one year prior to residence determination date to evidence the intent to make California the permanent home with concurrent relinquishment of the prior legal residence. Some of the relevant indices of an intention to establish and maintain California residence are registering to vote and voting in elections in California; satisfying resident California state income tax obligations on total income; ownership of residential property or continuous occupancy or letting of an apartment on a lease basis where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and checking accounts in California banks; maintaining permanent military address and home of record in California if one is in the military service, etc.

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 act of the minor or that of 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 the date from which residence is determined for that term. The residence determination dates for the 1976-1977 academic year are September 20, 1976 and January 25, 1977. If you have any questions regarding the applicable date, the campus Admissions Office can give you the residence determination date for the term for which you are registering.

There are several exceptions for nonresident tuition. Some of the exceptions provide for:

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.
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.

A advising provision is made during orientation week for each new student to obtain assistance from a faculty adviser in arranging a program. Each student should thereafter schedule a conference with his adviser at least once during each semester.
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 a student from whatever penalties he may incur.

The Board of Trustees of The California State University and Colleges, in Section 43800 of Title 5 of the California Administrative Code, has reserved the right to add, amend, or repeal any of its regulations, rules, resolutions, standing orders, and rules of procedure, in whole or in part, at such time as it may choose. None shall be construed, operate as, or have the effect of an abridgment or limitation of any rights, powers, or privileges of the Trustees. The Chancellor reserves the right to add, amend, or repeal any of his Executive Orders, at such time as he may choose, and the President of San Diego State University reserves the right to add, amend, or repeal provisions of the catalog and rules of the University, including handbooks, at such time as he may choose. No Executive Order shall be construed, operate as, or have the effect of an abridgment or limitation of any rights, powers, or privileges of the Chancellor nor shall any catalog provision or rule of the University be construed, operate as, or have the effect of an abridgment of any rights, powers, or privileges of the President.

Every effort has been made to assure the accuracy of the information in this catalog. Students are advised, however, that such information is subject to change without notice. Therefore, they should consult the appropriate instructional departments, schools, or administrative offices for current information.

Privacy Rights of Students

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) sets out requirements designed to protect the privacy of parents and students. Specifically, the statute provides that the campus must provide students access to official records directly related to the student and any opportunity for a hearing to challenge such records or the grounds on which they are inaccurate, misleading, or otherwise inappropriate; the right to a hearing under the Act does not include any right to challenge the appropriateness of a grade as determined by the instructor. The Act 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. An office and review board has been established by the Department of Health, Education and Welfare to investigate and adjudicate violations and complaints under the Act. The office designated for this purpose may be contacted at the following address: Mr. Thomas S. McFee, Room 5660, Department of Health, Education and Welfare, 330 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 field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. The above designated information is subject to release by the campus at any time unless the student has received a prior written objection from the student specifying information which the student requests not be released.

Nondiscrimination in Programs and Activities

Title IX of the Education Amendments of 1972, as amended, and the administrative regulations adopted by the Department of Health, Education and Welfare pursuant thereto, prohibit discrimination on the basis of sex in education programs and activities operated by San Diego State University. Such programs and activities include admission and employment. Inquiries concerning the application of Title IX to programs and activities of San Diego State University may be referred to Dr. Joseph Samuels, Affirmative Action Officer, the campus officer assigned the administrative responsibility of reviewing such matters.

Grades

At the end of each semester or summer session in which a student is enrolled, a report of courses taken, showing units and grades earned, is sent to the student. Grades are given on a graded or credit/no credit basis. Students are normally graded on a letter grade basis. Outside courses, however, may be transferred on a credit/no credit basis. A grade point average is calculated for each semester and for the student's cumulative record. A minimum grade point average of 2.0 (C) is required for graduation. Students must maintain a minimum grade point average of 2.0 (C) to continue in the baccalaureate degree program.

Undergraduate Student Options on Grading

An undergraduate student may elect to be graded on a letter grade basis or on a credit/no credit basis. The decision to be made must be made at the time of registration. The decision to be made must be made at the time of registration.

Grades and grade points per unit used in reporting are as follows: Grade of A (outstanding achievement), 4 points; B (commendable), 3 points; C (satisfactory), 2 points; D (passing), 1 point; F (failure), 0 points; I (Incomplete), counted as units attempted after the year, 0 points; SP (satisfactory progress), not counted in the grade point average, Audit, no credit earned and not counted in the grade point average, Cr (credit), 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.

Undergraduate Student Options on Grading

An undergraduate student may elect to be graded on a letter grade basis or on a credit/no credit basis. The decision to be made must be made at the time of registration. The decision to be made must be made at the time of registration.

Grade Point Average

To compute the grade point average, one divides 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. A student may not be graduated with the grade of Incomplete on his record, he must cancel officially his application for graduation.

Incomplete Grade

An Incomplete signifies that a portion of required course work has not been completed and evaluated in the prescribed time period due to unforeseen, but fully justified, reasons and that there is still a possibility of earning credit. It is the responsibility of the student to bring pertinent information to the instructor and to reach agreement on the means by which the remaining course requirements will be satisfied. A final grade is assigned when the work agreed upon has been completed and evaluated.

An Incomplete must be made up within one calendar year immediately following the end of the term in which it was assigned. This limitation prevails whether or not the student maintains continuous enrollment. Failure to complete the assigned work within one calendar year will result in an Incomplete being counted as equivalent to an "F" (or an "NC") for grade point average and progress point computation.

A candidate for graduation with the baccalaureate degree whose record carries a grade of Incomplete or whose record carries a grade of Incomplete and an incomplete will be graduated provided he is otherwise eligible for graduation. However, the Incomplete cannot be made up after the degree has been granted. If the student does not wish to be graduated with the grade of Incomplete on his record, he must cancel officially his application for graduation.
Satisfactory Progress Grade

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. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. Work is to be completed within a stipulated time period. This may not exceed one year except for graduate degree theses for which the time may be up to two years, but may not exceed the overall time limit for completion of all master's degree requirements. Any extension of time limit must receive prior authorization by the Dean of the University College (for undergraduate courses) or the Dean of the Graduate Division and Research (for graduate courses).

Courses

Except as permitted in general education requirements, 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 and intended primarily for undergraduates, those numbered 500 through 599 are in the upper division and are also acceptable for advanced degrees in the major area (junior and senior years); and those numbered 600 through 799 are strictly graduate courses. Courses numbered X-900 through X-999 are those offered only through Continuing Education to meet specific academic needs of community groups. Courses numbered in the X-900 series may be acceptable only toward the bachelor's degree. Any limitation on the applicability of credit will be specified in the course description.

Auditing

A student who does not wish to take a course for credit may, with the consent of the instructor, enroll as an auditor during the regular change of program period. Students may not enroll in courses for audit at registration. An auditor must meet all admissions requirements and pay the same fees required of students taking the course for credit. No change from regular registration to audit, or from audit to regular registration, will be permitted during the semester. An auditor is not held for examinations and does not receive credit or a final grade in the course.

Repeated Course

An undergraduate student who has received a grade of D, F, or incomplete in a course may repeat that course. While the original grade will remain on the transcript, the results of the last attempt will be used in computation of grade point average. A student may not repeat a course in which a grade of C or better was received. In addition, courses in which a student has received a D or F may not be repeated using the credit/no credit option.

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 overall grade point average 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 Catalog 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 fourth week of classes for the first week of summer term II 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. No more than three units in 600- and 700-numbered courses will be accepted toward the minimum unit requirements for the master's degree.

Concurrent Postbaccalaureate Credit

Applicable to the "Fifth Year" Credential Requirement Only

Qualifications

Concurrent postbaccalaureate credit may be earned during the final semester or summer session by seniors admitted to the School of Education who:
1. Have a minimum grade point average of 2.5 in all courses attempted prior to the final semester;
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, School of Education, during the final undergraduate semester (or summer session) the petition is made.
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 requirement. A maximum of six units in extension courses at San Diego State University may be accepted as part of the requirements for the master's degree, subject to limitations described in the Graduate Catalog.

Continuing education courses offered by departments are of two kinds. The first includes regular courses listed in the General Catalog which are available for use by students in meeting college and university credit requirements of various kinds, and are usually at the upper division level. A second kind is offered by some departments at the X-900 level and serves to meet the needs of specific community groups. Courses at the X-900 level are designed to meet special or professional needs, and any credit toward degrees or credentials or other objectives is determined by the colleges and universities concerned. These courses will not be applicable toward graduation requirements at San Diego State University unless otherwise specified in the course description. Courses at the X-900 level are not acceptable for advanced degree programs. Courses at the X-900 level may be applicable only toward bachelor's degree requirements, and any limitation on the applicability of X-900 credit will be specified in the course description.

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 at least
one. regular course (not Extension) at the time credit-by-examination is authorized, and pay for additional units if cost exceeds fees already paid. 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. In summer sessions the total units earned for courses and examinations cannot exceed the limit authorized by the Education Code.

3. 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.

4. Credit-by-examination is not treated as part of the student’s study load and, therefore, is not considered for Selective Service purposes or by the Veterans Administration in the application of their respective regulations; and is not always accepted as transfer credit between collegiate institutions.

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 Entrance Examination Board. Students who present scores of three or better will be granted 5-10 semester units of college credit for each examination satisfactorily passed while in high school.

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 Office of the Dean of The University College.

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>
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<tbody>
<tr>
<td>American History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>History 105A-105B</td>
<td>satisfies American history institutions and ideas requirement</td>
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<tr>
<td>European History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>History 105A-105B</td>
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<td>English</td>
<td>3, 4, 5</td>
<td>6</td>
<td>English 100 and 101</td>
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</tr>
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<td>French</td>
<td>3, 4, 5</td>
<td>6</td>
<td>French 201 and 211</td>
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<td>Classics, Vergil</td>
<td>3, 4, 5</td>
<td>5</td>
<td>Latin 202</td>
<td>if more than one examination is selected, credit will be provided</td>
</tr>
<tr>
<td>Latin Prose</td>
<td>3, 4, 5</td>
<td>5</td>
<td>Latin 202</td>
<td></td>
</tr>
<tr>
<td>Latin Lyr.</td>
<td>3, 4, 5</td>
<td>5</td>
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<td>Biology 100 and 100L</td>
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<td>Music 102, 151</td>
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* Credit may not be earned at SDSU for courses which duplicate credit already allowed for examinations as listed under SDSU course equivalents.

Credit for College Level Examination Program (CLEP)

San Diego State University will consider the granting of credit to those students who have attained a score at or above the 50th percentile on each test of the General Examinations of the College Level Examination Program exclusive of English. Credit may also be allowed for the Special Examinations in 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 for admission to 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 courses shall be classified 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 Catalog.

Student Program and Records

Transcripts of Record

A student may obtain an official transcript of his record by filing an application at the Registrar’s Office. A fee of $1 is charged for all transcripts and must be paid in advance. One week should be allowed for the processing and mailing of the transcript. Transcripts from other schools or colleges become the property of this university and will not be released or copied.

Change of Program

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

The student is responsible for every course on his official study list filed at registration. If a student does not attend the first class meeting of the semester and is not present at the start of the second meeting, the professor may give his place to another student; however, if this occurs, the student must still take the necessary formal drop action himself. Changes of program cannot be effected by nonattendance in class; nonattendance without consequent formal drop action will result in a failing grade.
Withdrawal, Leave of Absence, Readmission, and Evaluation

Withdrawal. Students who wish to withdraw from the university must initiate action formally through the Registrar’s Office. Failure to file will result in a failing grade in all courses. Under certain circumstances, complete withdrawal is possible up to three weeks preceding the last day of instruction; however, 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. For complete information about withdrawals after the first three weeks of the term, refer to change of program.

Unofficial Withdrawal. A student withdrawing unofficially from class or from the university will receive failing grades in all courses which he stops attending. An unofficial withdrawal is one in which a student stops attending classes without filing official withdrawal forms within the established deadlines. An unofficial withdrawal will have the same student’s allowances immediately suspended and will be subject to full repayment of allowances received after date of unofficial withdrawal.

Withdrawal to Enter Military Service. Under certain conditions, a student withdrawing from the university to enter military service is entitled to apply for refund of materials and services fees or for partial credit (but not both). To qualify under this regulation, the student must (a) be a civilian who, because of his own initiative, receives orders to immediate extended active duty, or (b) be a civilian who receives orders to immediate extended active duty by government action, or (c) be a reservist called to immediate extended active duty. (Not applicable to other military personnel enrolled in the university.)

Enrollment in extended active duty must be for a reason not unreasonable and unnecessary delay (normally within 30 days) after the date of withdrawal from the university to qualify the student for refund or partial credit. Verification of entry into extended active duty is required and must be by written statement of the commanding officer or by official copy of orders. Application for withdrawal from the university may be made by the student in person, or by telephone or mail. Forms for withdrawal will also be sent to the student if requested by a person designated by the student as his representative in making the request.

If the student is passing in courses at the time of withdrawal from the university, partial credit may be granted in undergraduate courses at the rate of one-third credit for completion of the first six weeks of the semester, or two-thirds for the first 12 weeks. The university does not wish to influence the student in choosing between partial credit and refund of fees; however, it should be pointed out that partial credit in a course may not satisfy some specific requirement for which that course may be needed, and if the course is later repeated by the student the partial credit will be lost as “repeated” work.

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 clearly 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 wishes a leave, a student must file application for the leave at the Registrar’s Office. Deadline 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 but will not have completed at least one semester before the last day of absence period, or to students who are disqualified. To be eligible for leave an undergraduate must be eligible to return as an undergraduate, students qualifying for change in status from undergraduate to graduate are not eligible.

Applications for leave must be 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. Ordinarily, withdrawals in this category will involve total withdrawal from the campus, except the university may, in its discretion, be made 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 of The University College or his designee.

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.

Veterans using veteran benefits must obtain appropriate approval from the Veterans Administration for necessary changes in letters of eligibility.

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 18 weeks. Two hours of activity (as in physical education) or three hours of laboratory (as in the sciences) are considered equivalent to one hour of lecture.

At registration time, no student will be permitted to enroll for more than 18 units. After registration he may add additional units, if desired, by means of the add-drop process, though if he is employed outside of college he is 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.

Scholastic Probation and Disqualification

Undergraduate Students

Progress toward the bachelor’s degree is monitored in terms of progress points per unit attempted. Progress points are as follows: A, four progress points; B, three; C and C+, two; D, one; F and NC, zero progress points. An undergraduate student will be placed on academic probation if at any time his cumulative grade point average in all college work attempted or his cumulative grade point average at cumulative grade point average at cumulative by four is 2.0 or higher in all college work attempted or in all college work attempted at this university and when he earns at least twice as many progress points as all units attempted in a term and when he earns at least twice as many progress points as all units attempted in a term and on academic probation. An undergraduate student on academic probation is subject to academic disqualification.

A. As a lower-division student less than 60 semester units of college work completed if he falls 15 or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.

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A graduate student disqualified from the University under the foregoing regulations, may be readmitted to the University by the Board of Admissions. Application for readmission must be made on forms available at the Office of Admissions.

Student Discipline and Grievances

Sections 41301 and 41302 of the California Administrative Code, Title 5, read as follows:

41301. Expulsion, Suspension and Probation of Students. Following procedures consonant with due process established for the campus of which he is a student, 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 obtain or keep a position or benefit.
(c) Misrepresentation of oneself or of an organization to be an agent of a campus.
(d) Obstruction or disruption, on or off campus property, of the campus educational process, administrative process or other campus function.
(e) Physical abuse on or off campus property of the person or property of any member of the campus community or of members of his family or the threat of such physical abuse.
(f) Theft of, or nonaccidental damage to, campus property or property in the possession of, or owned by, a member of the campus community.
(g) Unauthorized entry into, unauthorized use of, or misuse of campus property.
(h) On campus property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.
(i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on campus property, or at a campus function without prior authorization of the campus president.
(j) Engaging in lewd, indecent or obscene behavior on campus property or at a campus function.
(k) Abusive behavior directed toward, or hazing of, a member of the campus community.
(l) Violation of any order of the campus president, notice of which has been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the 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 State University and Colleges Trustees, academic, nonacademic and 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
(B) all campus feeding, retail or residence facilities whether operated by a campus or by a campus auxiliary organization.
(3) The term "deadly weapons" includes any instrument or weapon of the kind commonly known as a blackjack, slingshot, billy, sandclub, sandbag, metal knuckles; any dirk, dagger, switchblade knife, pistol, revolver, or any other firearm; any knife having a blade longer than five inches; any razor with an unguarded blade, and any metal pipe or bar used or intended to be used as a club.
(4) The term "behavior" includes conduct and expression.
(5) The term "hazing" means any method or act of initiation into a student organization or any pastime or amusement engaged in with regard to such an organization which causes, or is likely to cause, bodily danger, physical or emotional harm to any member of the campus community, but the term "hazing" does not include customary athletic events or other similar contests or 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 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 is suspended, no additional tuition or fees shall be required of the student on account of his suspension. In the event that a student who has not reached his eighteenth birthday is suspended or expelled, the President shall notify his parent or guardian of the action by registered mail to the last known address, return receipt requested.

Standards and procedures of discipline at San Diego State University are determined by these regulations.

If a student believes that a professor's treatment of him is grossly unfair or that a professor's behavior is clearly unprofessional, he 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 Dean of Student Affairs (AD-231).

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 1976-77 academic year must meet all graduation requirements appearing in this catalog. They 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.

2. At the student's option, he may change to the catalog in effect in the year in which he graduates. Thus, students graduating in December 1976, May 1977, or in the 1977 summer sessions may adopt this catalog.

The choice of catalog must be indicated on the student's Application for Graduation. Applications are available in the Evaluations Office (Administration Bldg., Room 124) 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.

I. General Education Requirements

As an important part of his education, every undergraduate student spends approximately one-third of his college years studying in the general education program. Course work in the program is intended to enrich a student's overall academic program and to complement his 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 modes 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.

1. Course work in a major.

2. Special basic courses in mathematics, composition and other subjects which are identified in the catalog as ineligible for General Education.

3. Course work in excess of 12 units in one department.

4. No more than three units from courses numbered 299 (Experimental Topics) and not more than three units from courses numbered 496 (Experimental Topics) can be applied to general education requirements.

Transfer Students. Transfer students who are certified by their previous (regionally accredited) institutions to have completed the state-mandated general education requirements will not be required to take additional general education courses at San Diego State University. Partial certification, involving 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 The Human Experience—are intended to be taken sequentially so that the study of each rests on the foundation created in the one preceding it.
The inclusion of "Basic Subjects" in a general education program serves to establish the principle that there are common modes of expression and analysis which underlie the whole enterprise of learning. The most fundamental of these are written and oral communication in English, mathematical and (increasingly) statistical computation, and logical analysis. All of these modes of expression are capabilities which should be achieved by students during the first semester or year of college, if not before.

**Course Work in Basic Subjects.** A minimum of nine units, distributed in either of the following two ways:

- 3 units in English composition
- 3 units in oral communication
- 3 units in mathematics, statistics or logic; OR
- 6 units in English composition
- 3 units in mathematics, statistics or logic.

**FOUNDATIONS OF LEARNING**

The basic subjects develop intellectual capabilities in students. Those capabilities must be focused and applied in systematic ways and this is a principal function of academic disciplines. The "Foundations of Learning" element in the general education program aims at providing students with opportunities to learn a variety of conceptual frameworks and methods of thought by which scholars in different fields approach their subject matter.

The purpose is not solely to introduce students to a discipline in preparation for advanced work in the area, but also, and especially, to initiate students into modes of thought characteristic of a discipline in order that they may apply those modes of thought to the variety of human concerns which constitute the main subject matter of general education. The "Foundations of Learning" element in the program includes course work in the natural sciences, the social and behavioral sciences, and the humanities.

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

1. **Natural Sciences.** A minimum of seven units to include:
   - a. At least three units in the following departments: Biology (except 215), Botany, Microbiology, Zoology.
   - b. At least three units in one of the following departments: Astronomy, Chemistry, Geology, Physical Science, Physics.
   - c. One unit of laboratory, if not already included in one of the above courses.

2. **Social and Behavioral Sciences.** A minimum of six units to include a 3-unit course in two of the following areas:
   - a. Anthropology
   - b. Economics (except 142)
   - c. Geography (except 101 and 103)
   - d. Afro-American Studies (limited to 220 or 230)
   - e. Mexican-American Studies (limited to 115 or 200)
   - f. Political Science (except 140)
   - g. Psychology (except 270)
   - h. Sociology (except 160)

3. **Humanities.** A minimum of nine units to include a 3-unit course in three of the following four areas:
   - a. Literature (in the English language or a foreign language)
   - b. Music, Art, Drama (excluding predominantly performance or activity courses in each subject); Humanities, American Studies, Asian Studies, European Studies, Latin-American Studies.

**THE HUMAN EXPERIENCE**

Course Work in the Human Experience: Courses for this section of the general education program have not yet been developed. For 1976-77, students may satisfy this section by the following:

- Nine units of elective courses, including:
  - At least one course from among the general education subjects listed in the Basic Subjects and Foundations of Learning sections above.
- Additional courses chosen from among all courses listed in the catalog (except courses indicated earlier as "Course Work Excluded from General Education").

Specific topics and courses for "The Human Experience" will be developed during the next year and will appear in a subsequent catalog. Studies in "The Human Experience" will build upon the students' course work in "Basic Subjects" and in the "Foundations of Learning." The purpose is 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. The faculty has created "The Human Experience" in order to encourage such collaboration and to provide students with the opportunity of achieving both depth and breadth in the study of a significant area of human concern.

**Alternate General Education Program**

Any student with a minimum grade point average of 3.25 at this institution, with a declared major, and with 15 or more but not over 45 units of college work may submit to the Dean of the University College an alternate program, with supporting reasons, for fulfilling general education-requirement problems, or more courses in the area of the student's major or minor. Within the proposal, no courses in the student's major or minor may apply to the requirements, and not more than six units shall be applicable to preparation for the major.

**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.

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

C. **Major.** Completion of a departmental or an interdisciplinary major is required. A major is an area of specialized study into which the student probes more deeply than is normally true of other subjects. It consists of 24 or more upper division units for the Bachelor of Arts, Bachelor of Music, and Bachelor of Vocal Education degrees, and of 36 or more units for the Bachelor of Science degree. At least half of the units must be completed at SDSU, units received at other institutions to be included in the major may not exceed 15 units.

D. **Electives.** The student may select electives in another major or a minor.

E. **Advanced Courses.** Any student with a minimum grade point average of 3.25 at this institution, with a declared major, and with 15 or more but not over 45 units of college work may submit to the Dean of the University College an alternate program, with supporting reasons, for fulfilling general education-requirement problems, or more courses in the area of the student's major or minor. Within the proposal, no courses in the student's major or minor may apply to the requirements, and not more than six units shall be applicable to preparation for the major.

F. **Additional Courses.** Five additional units beyond the number specified in the requirements listed above, may be taken from among courses in the student's major or minor, or elective courses approved by the Dean of the University College.

G. **Alternate General Education Program.** Any student with a minimum grade point average of 3.25 at this institution, with a declared major, and with 15 or more but not over 45 units of college work may submit to the Dean of the University College an alternate program, with supporting reasons, for fulfilling general education-requirement problems, or more courses in the area of the student's major or minor. Within the proposal, no courses in the student's major or minor may apply to the requirements, and not more than six units shall be applicable to preparation for the major.

H. **Alternate General Education Program.** Any student with a minimum grade point average of 3.25 at this institution, with a declared major, and with 15 or more but not over 45 units of college work may submit to the Dean of the University College an alternate program, with supporting reasons, for fulfilling general education-requirement problems, or more courses in the area of the student's major or minor. Within the proposal, no courses in the student's major or minor may apply to the requirements, and not more than six units shall be applicable to preparation for the major.
Graduation Requirements

American Institutions Requirement

Courses taken to satisfy the American Institutions requirement can be fulfilled through the Index. Courses taken in satisfaction of the major cannot be used to meet requirements in general education or a minor.

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

B. Courses: By passing any course from the following list:
- Afro-American Studies 170A-170B
- History 110A-110B
- History 310A-310B
- History 520A-520B
- History 547A-547B
- Mexican-American Studies 120A and 120B
- Mexican-American Studies 141A and 141B
- Political Science 110 and 120
- Political Science 320 and 321
- Political Science 320 and 505
- Political Science 320 and 522
- Political Science 521 and 505
- Political Science 505 and 522

C. Examinations and courses: By passing any one or two of the aforementioned examinations AND a 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.

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. A minor is an area of specialized study usually requiring about half as many units as a major; it generally consists of 15-22 units, at least six of which must be in upper division courses. 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 taken in satisfaction of the minor may be used to meet requirements in general education. In addition, courses taken to satisfy the preparation for the major requirements may be used as part of a minor. No course may be used to satisfy the requirements for both a major and a minor.

Foreign Language Requirement

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 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 passing a challenge examination in one foreign language.

Any combination of the preceding is also acceptable.

Exemptions:

High school language courses can be used to satisfy this requirement, as follows: the first two years of high school language count as the equivalent of the first 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.

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.

English courses may count as electives in the general education program. (See The Human Experience, above.)

Physical Activities Requirement

A. Physical Activities. A minimum of two semesters of physical education activity courses, or equivalent monitored activities (including intercollegiate 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. Any 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.

Competency Requirements

A. Mathematics. The Mathematics Competency Requirement can be satisfied in any of four ways:

1. By a score at the 50th percentile or higher on the mathematics portion of the Scholastic Aptitude Test (SAT).
2. By a score at the 50th percentile or higher on the mathematics portion of the American College Test (ACT).
3. By a passing score on the Mathematics Competency Test administered by the SDSU Test Office.
4. By a passing grade in Mathematics 103, 118, or higher numbered course.

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 examinations and/or courses in English composition or remedial English is not a basis for exemption. The requirement can be satisfied at time of entrance by any of the following:

1. By a passing score on the Test of Standard Written English, offered as a part of the Scholastic Aptitude Test (SAT) before October 1974.
2. By a passing score on the verbal section of the American College Test (ACT).
3. By a passing score on the English Placement Test administered by the SDSU Department of English.
4. By a passing score on the English Equivalency Test administered by the California State University and Colleges each spring in most California high schools.

Students who have not satisfied this requirement at time of entrance must take the SDSU Writing Competency Test sometime prior to or during their first semester on campus. Students who fail the Writing Competency Test must register in University Studies 151 (Writing Development, 3 units) in either their first or second semesters at SDSU. Failure to do so will result in Administrative Disqualification at the end of the second semester, reinstatement thereafter will be conditional upon satisfaction of this requirement.
VII. 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 total which applies to a particular student is determined by the student’s choice of major and from courses used to satisfy the major’s requirements. Each student should therefore consult the catalog of their chosen institution.

   The maximum number of units from community college courses, extension and correspondence courses, and credit/no credit courses applicable to this requirement is as follows: (a) from community college courses, 24 units; (b) from extension and correspondence courses, 24 units; and (c) from credit/no credit courses, 24 units. Units from courses in which grades of F, No Credit, and Incomplete were received cannot be used to satisfy this requirement.

   The maximum number of units in Study Skills courses that apply to the bachelor's degree is six.

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 the American institutions and the general education requirements.

C. Special unit totals. The maximum number of special units accepted for a bachelor's degree are 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 University Studies courses in area of Study Skills
   6. From Experimental Topics courses numbered 299
   7. From Experimental courses numbered 290
   8. From University Studies courses numbered 200 and 400

D. Units in one department.

   1. Bachelor of Arts degree in Liberal Arts and Sciences
   2. Bachelor of Music degree
   3. Bachelor of Science degree in Business Administration
   4. Other degrees

   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.

   The maximum number of units in any one 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 48 units in telecommunication and film may be counted toward the total units required for graduation.

VIII. Residence Requirement

A minimum of 24 units must be earned in courses taken at San Diego State University. Courses taken in extension and credit earned by credit-by-examination may not be used to fulfill this requirement. Twelve of the 24 units must be among the last 20 units needed for satisfying the degree requirements. 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.

IX. Grade Point Average Requirements

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

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

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

Application for Graduation

Graduation is not automatic on the completion of requirements. The student who intends to graduate must take the initiative. When he believes that he is eligible, he should file an application for graduation in the appropriate period of time. The student must be in residence at least one day prior to the published deadlines. Upon recommendation of his major department, a student doing superior work in his major field may be graduated with distinction in that field.

Commencement

Commencement exercises are held each year at the end of the spring semester for students who were graduated, mid-year graduates and 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. This makes a complete change in major, fulfills all requirements for the degree (including general education requirements) as required by this university, and has approval of the Dean of the University College.
## Curricula

### Summary
### Summary of Curricula Offered

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<tr>
<td><strong>Aerospace engineering</strong></td>
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<tr>
<td><strong>Afro-American studies</strong></td>
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<td><strong>Anthropology</strong></td>
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<td><strong>Asian studies</strong></td>
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<td><strong>Astronomy</strong></td>
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<td><strong>Biology</strong></td>
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<tr>
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<td><strong>Chemistry</strong></td>
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<td>BS</td>
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<td><strong>Comparative literature</strong></td>
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<td><strong>Computer science</strong></td>
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<td><strong>Counseling</strong></td>
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<tr>
<td><strong>Criminal justice administration</strong></td>
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<td><strong>Drama</strong></td>
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<td><strong>Economics</strong></td>
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<td><strong>Environmental health</strong></td>
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<td><strong>Finance</strong></td>
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<td><strong>French</strong></td>
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<tr>
<td><strong>German</strong></td>
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<tr>
<td><strong>Health science</strong></td>
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<td><strong>History</strong></td>
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<td><strong>Industrial arts</strong></td>
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<td><strong>Industrial technology</strong></td>
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<td><strong>Information systems</strong></td>
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<td><strong>Insurance</strong></td>
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<td><strong>Journalism</strong></td>
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<td><strong>Latin American studies</strong></td>
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<td><strong>Mathematics</strong></td>
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<tr>
<td><strong>Mechanical engineering</strong></td>
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<td><strong>Mexican-American studies</strong></td>
<td>BS</td>
<td>AB</td>
<td>MA, MS</td>
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</tbody>
</table>

#### Special Curricula

**Military Curricula**

- **Aerospace studies (A.F.R.O.T.C.)**

- **Certificate (nondegree) Programs**
  - Certificate in applied linguistics
  - Certificate in criminal justice administration
  - Certificate in public administration
### Teaching Credentials

- Multiple subjects teaching credential
- Single subject teaching credential
- Restricted credential
- Community college instructor credential (occupational)
- Community college instructor credential (academic)
- Standard designated subjects, adult
- Standard designated subjects, health
- Specialist credentials
- Administrative services
- Bilingual/cross cultural
- Early childhood
- Library services
- Special education:
  - Communication handicapped
  - Physically handicapped
  - Severely handicapped
  - Gifted

### Minors for the Bachelor's Degree

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<td>and librarianship</td>
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</table>
Interdisciplinary Programs

For information on interdisciplinary programs in the areas of Africa and the Middle East, American Studies, Asian Studies, Environment, European Studies, Humanities, Latin American Studies, and Social Science, consult the “Courses and Curricula” section of the catalog. Refer to the index for page number.

African Studies Minor

The minor in African Studies is offered by the College of Arts and Letters. Dr. Issa J. Khalil, Department of Religious Studies, is adviser for this minor.

The minor in African Studies consists of a minimum of 15 units, twelve of which must be upper division, to include Humanities 158, History 575A and 575B, and 6 units from the following courses in any two departments: Anthropology 549, 579; Economics 489; Geography 335, 589, Political Science 594, 566, and Religious Studies 340.

Child Development Major

With the B.S. Degree in Applied Arts and Sciences

Preparation for the major. Anthropology 101, Biology 100, Family Studies and Consumer Sciences 107 and 270, Family Studies and Consumer Sciences 135 or Social Welfare 130; Psychology 101, 260, Sociology 101; Sociology 180 or Psychology 270, (27 units.)

Major. A minimum of 36 upper division units to include Biology 350; Family Studies and Consumer Sciences 335 and 371; Psychology 350 and 351; Sociology 440 or Psychology 430, and 18 units selected from the following areas: (1) Afro-American Studies (humanities and fine arts only); (2) classical and oriental, French and Italian, German and Russian, Spanish and literature; and three additional units of course work selected from the areas listed under Group A above.

Jewish Studies Minor

The minor in Jewish Studies is offered by the College of Arts and Letters. Dr. Harry Ruja, Department of Religious Studies, is adviser for this minor. It provides a balanced interdisciplinary study of Jewish contributions to world culture and history. It serves the needs of students who plan to (1) specialize in disciplines in which an understanding of Jewish contributions is essential, or (2) follow careers in teaching, community service, foreign service, or the ministry. Students seeking a minor in Jewish Studies may want to consider combining it with a major in Social Science with an emphasis on Africa and the Middle East. Many courses relevant to this major are available in anthropology, Arabic language and literature, economics, geography, history, political science, and sociology.

The minor in Jewish Studies consists of 15 to 17 units to include Humanities 100 and 131, or Hebrew 101 and 102, and nine units selected from Comparative Literature 505 (English 505), 525, 526, 577 (Kafka); Philosophy 338, 535; Religious Studies 301 and 330.

Liberal Studies Major

With the A.B. Degree in Applied Arts and Sciences and in Liberal Arts and Sciences

The liberal studies major offers a general type of education leading to objectives not otherwise provided in the regular programs of the university. Students electing this major must declare it, as well as any option selected within it, prior to satisfactory completion of 90 semester units.

Option 1. Liberal Studies in Three Disciplines

The student selects three disciplines as associated with departments participating in the liberal studies program. The departments include those listed in the College of Arts and Letters, the College of Professional Studies, the College of Sciences, the School of Business Administration, the School of Education, the School of Engineering, and the Department of Social Welfare.

The student must secure approval of his program by the department chairman in each of the three disciplines involved and the Dean of The University College.

Preparation for the major. A minimum of two courses (normally defined as 6 units) in each of the three disciplines selected in the major must be completed in the lower division as foundation for upper division courses. In departmental areas where lower division offerings are insufficient to meet this requirement, the total minimum upper division requirement may be extended.

Majors. A minimum of 36 upper division units selected from three disciplines, with no fewer than nine units from any one discipline or whatever the participating departments require. The liberal studies major is considered to be governed by the regulations of the liberal arts and sciences if two of the three fields selected are offered only in the liberal arts and sciences curriculum. Conversely, if two of the three areas selected are in the applied arts and sciences curriculum of the University, then the liberal studies major is governed by the regulations of that curriculum.

Option 2. Liberal Studies in the Multiple Subjects Groups with the A.B. Degree in Applied Arts and Sciences

The student taking this option selects courses to extend his background in the four multiple subjects groups of knowledge identified as follows (not more than 30 units may be taken in any one department or area):

Group A: English (including courses in grammar, literature, composition) and speech. This group includes the following areas: (1) Afro-American Studies (English and speech only), (2) comparative literature, (3) English, i.e., American literature, British literature, and creative writing, (4) journalism, (5) literature, (6) Social Science (English and speech only), (7) speech communication, plus (8) speech pathology and audiology.

Group B: Mathematics and science (physical sciences or life sciences). This group includes the following areas: (1) geometry, (2) the life sciences, i.e., astronomy, chemistry, geology, microbiology, zoology, (3) mathematics, (4) the physical sciences, (5) geology, (6) health sciences and safety, (7) history, (8) Jewish-American Studies, (9) political science, (10) social welfare, (11) sociology, (12) women’s studies.

Group C: Humanities and fine arts (including foreign languages). This group includes the following areas: (1) Afro-American Studies, (2) anthropology, (3) economics, (4) family studies and consumer sciences, (5) American history, (6) comparative literature, (7) classical and oriental, (8) French and Italian, (9) German and Russian, (10) Spanish and literature, (11) the life sciences, i.e., classical and oriental, French and Italian, German and Russian, Spanish and literature, and three additional units of course work selected from the areas listed under Group A above.

Preparation for the major.

Group A: Fifteen units of approved course work to include: a three-unit course in composition; a three-unit course in foreign language; a three-unit course in music; and three additional units of course work selected from the areas listed under Group A above.

Group B: Fifteen units of approved course work to include: six units of mathematics***; three or more units of the life science***; three or more units of a physical science; and additional units from the areas listed under Group B for a minimum of fifteen units.

Group C: Fifteen units of approved course work to include: course work to satisfy “American Institutions” requirements and additional units of course work selected from the areas under Group C.*

Group D: Fifteen units of approved course work to include: three units of art; three units of music****; three units selected from drama, humanities, philosophy or religious studies; and additional units of course work selected from the areas under Group D.

Majors. A minimum of 30 upper division units to include: a 15-unit concentration in one of the four groups, the additional 15 units distributed among the three remaining groups with no less than three units in each of the groups.

The Liberal Studies Major Option 2 is recommended for students who plan to enter elementary education. It meets all requirements for the multiple subject/diversified major as specified in the Ryan education. It meets all requirements for the multiple subject/diversified major as specified in the Ryan education. It meets all requirements for the multiple subject/diversified major as specified in the Ryan education.

Students planning to enter elementary education must consult and secure program approval from the Department of Elementary Education. Other students who wish to take this major must consult the Dean of the University College to secure program approval.

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*Includes all graduation requirements except physical education. (Students who plan to enter elementary education must take Physical Education 153 in lieu of one of the physical education activity units for general education.)

**Mathematics 210A-210B is required for students who plan to enter elementary education.

***Mathematics 210A-210B is required for students who plan to enter elementary education.

****Physical Education 153 is required for students who plan to enter elementary education.

*****Health Science and Safety is required for students who plan to enter elementary education.

******Music 102 is required for students who plan to enter elementary education.
Middle East Studies Minor

The minor in Middle East studies is offered by the College of Arts and Letters. Dr. Issa J. Khalil, Department of Religious Studies, is adviser for this minor.

The minor in Middle East studies consists of a minimum of 15 units, twelve of which must be upper division, to include Humanities 157 or 357; Religious Studies 340; 6 units from History 573A, 573B and 574; and 3 units from Anthropology 574; Art 566; Comparative Literature 535; Economics 469; Geography 335 and Political Science 563.

Native American Studies

Within the College of Arts and Letters, Native American studies offers a program of courses relating to the American Indian. Mr. John C. Rouillard chairs this program. In cooperation with the departments of Anthropology, English, Sociology, History, and Linguistics, and the College of Professional Studies, the attitudes, value systems, history, and cultural divergencies of the original Americans are examined. This program is of particular value to the student who intends to specialize in disciplines pertaining to the nation’s ethnic minorities. Details of course offerings will be provided by Native American studies.

Russian and East European Studies Major

With the A.B. Degree in Liberal Arts and Sciences

The major in Russian and East European studies is offered by the College of Arts and Letters. Dr. Vyta Dukas, Department of Germanic and Slavic Languages and Literatures, is adviser for this major.

Preparation for the major. Russian 101, 102, 203, 204, or equivalent. (16 units.) Lower division prerequisites for the upper division courses to be taken in the major. (3-9 units.)

Major. A minimum of 30 upper division units to include nine units from at least two departments in the humanities selected from Comparative Literature 513, 514, European Studies 330, 331, History 518A-518B; nine units from at least two departments in the social sciences selected from Economics 330, 468, Geography 335, 337, Political Science 558, 559; six units in Russian selected from 301A-301B, 311A-311B, 555A-555B, 561A-561B, 563; and six units of electives selected with the approval of the adviser.
The University College

Objectives and Functions
The University College serves to provide coordination, evaluation, and stimulation to the undergraduate educational program at San Diego State University. It has general responsibility for the undergraduate curriculum, and for academic standards and regulations that affect undergraduate students.

The College has a special concern and responsibility for academic programs of a University-wide character. Foremost among these is the general education program. The College, through its Committee on General Education, oversees the continuing development of the general education program and approves courses to be included in the program.

The College also administers the University Honors Program, the College Level Examination Program, the Advanced Placement Program and the preparrofessional programs in medicine, dentistry and law. In addition, it offers special course work in the University Studies series and sponsors the liberal studies major for noncredential students.

The furtherance of innovative and nontraditional educations on the campus is a principal concern of The University College. Toward this end, it sponsors the Coordinated Freshman Studies Program, and supports and participates in the work of the Teaching and Learning Council and the Instructional Development Program. Special services are provided to students through the Test Office and the Study Skills Center, both of which are part of The University College.

The policy-making agency for the College is the University College Council, which is composed of faculty and student representatives and chaired by the Dean of the College. On significant matters of University-wide concern, the Council submits proposals to the Faculty Senate for consideration and action.

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

Coordinated Freshman Studies
Coordinated Freshman Studies, an innovative program under the aegis of The University College, is an attempt to establish a more effective approach to general education by providing an integrated experience for students in terms of both academic ideas and personal development.

The experimental community, first formed in fall 1970, was created to permit 70 incoming freshmen to share classes drawn from the basic general education requirements, and coordinated by means of common concepts, themes and materials. The range of cross-disciplinary concerns is illustrated by such topics as: the role of models and metaphors in man’s creative thought; the problems of ecological balance; Freud’s theories of personality and society; the nature of fact, data, fiction and faith.

The atmosphere provided by the small community encourages students to become more personally involved in their education through the exploration of values, perceptions and modes of thought, and permits a greater degree of self expression and of peer learning.

Students may apply to Coordinated Freshman Studies, The University College, by writing a letter (not more than 250 words) describing themselves and their interests, and explaining their reasons for application. The deadline for submitting an application for the 1976-77 fall semester is June 30, 1976.

Honors Program
Some departments offer Honors sections of selected courses. Normally, admission is by invitation, but any student interested should consult the Class Schedule for the name of the faculty member in charge and consult with him to establish eligibility.

New Hampshire Exchange Program
Students eager to attend a university on the East Coast for one or two semesters may take advantage of the exchange program established between San Diego State University and the University of New Hampshire. The program permits participants to pay normal fees at their home campus while involved in the exchange, thus relieving them of additional tuition costs. Students must provide their own travel and room and board expenses; however, those 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 completed at least 30 units by the exchange date, with 12 units completed at SDSU at the time of application. (Minimum GPA should be 2.5.) Students may apply to The University College office before October 22, 1976 for the spring semester exchange, and before March 4, 1977 for the following fall.

Study Skills Center
The 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 the Old Library, where it maintains a library of over 800 different tests.
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 Office admits all students 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 all graduate curricula.

The Graduate Council 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.

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, Riverside.

The Doctor of Philosophy degree in Genetics is offered jointly with the University of California, Berkeley.

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
- Physical sciences
- Physics
- Political science
- Psychology
- Radio and television
- Russian
- Social science
- Sociology
- Spanish
- Speech communication
- Speech pathology and audiology
- Statistics

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
- Criminal justice administration
- Electrical engineering
- Geology
- Home economics
- Mass communications
- Mathematics
- Mechanical engineering
- Microbiology
- Physics
- Psychology
- Radiological physics
- Rehabilitation counseling
- Social work
- Statistics

Master of Business Administration

Master of City Planning

Master of Public Administration

Master of Social Work

Admission to Postbaccalaureate Study

Application Procedures

All applicants for postbaccalaureate study (e.g., advanced degree applicants, those seeking credentials, and those interested in taking courses for professional growth, etc.) must file a complete application within the appropriate filing period. Second baccalaureate degree applicants 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 admission requirements. Postbaccalaureate applicants who completed undergraduate degree requirements and were graduated from this University the preceding term are also required to complete and submit an application and the $20.00 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of the 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 fees) to each. Applications may be obtained from the Admissions Office or the Graduate Studies 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 he is judged to possess sufficient academic, professional, and other potential pertinent to his educational objectives to merit such action.

Admission Categories

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

A student wishing to enroll in courses at the University 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 he meets the criteria specified under General Requirements. Students admitted in this category may enroll in 500- and 700-numbered courses. 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 Requirements. Such a student must also meet the professional, personal, scholastic and other standards prescribed by the appropriate department in the School of Education. 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 Requirements, and, in addition, must:

(a) Achieve a satisfactory score on the Graduate Record Examination (GRE). Students holding an advanced degree from an institution which is a member of the Council of Graduate Schools are exempt from this requirement.

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

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

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

Students admitted with graduate standing (classified) are admitted to authorized advanced degree curricula and may enroll in 600-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 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. 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 school have been met, the student will be accorded 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.

Withdrawal and Reinstatement

A graduate student who has begun work on a graduate degree and who was not in attendance or on official approved leave of absence during the semester preceding the semester in which he wishes to enroll must apply for readmission to the University. Any graduate student whose performance is judged to be unsatisfactory by the Graduate Council may be required to withdraw from all graduate degree curricula offered by San Diego State University.

Advanced Degree Curricula

Requirements for the Doctor of Philosophy

The requirements for the Doctor of Philosophy degree are stated fully in the Graduate Catalog.

Requirements for Master's Degree

The minimum requirements for the Master of Arts degree, the Master of Science degree, the Master of Business Administration degree, Master of City Planning degree, Master of Public Administration degree, and the Master of Social Work degree are established by the Board of Trustees of The California State University and Colleges. Students seeking to enter a curriculum in the Graduate Division leading to these degrees must comply with the admissions procedures described above, be advanced to candidacy, and meet the scholastic, professional and personal standards, including the passing of examinations, required in the Graduate Division. The Master of Arts, Master of Science, and the Master of Public Administration degrees require 30 semester units of graduate work, the Master of Business Administration degree requires between 30 and 60 units (depending upon the student's background); the Master of City Planning and Master of Social Work degrees are two-year degrees and each requires 56 units of graduate work. At least 30 units of work must be earned in residence at San Diego State University for the M.C.P. degree and at least 24 units for all other master's degrees. All acceptable credit must have been earned within seven years of the date when all requirements for the degree are completed. A grade point average of 3.0 (grade of B on a five-point scale) or better must be earned in (1) all programmed courses required for the removal of undergraduate deficiencies, (2) all programmed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer, and (3) all numbered courses taken at San Diego State University concurrently with or subsequently to the earliest course listed on the official master's degree program.

Graduate Catalog

Complete details on the operation and administration of these requirements, together with other administrative regulations on graduate study as determined by the Graduate Council, will be found in the Graduate Catalog, which is available at the Graduate Division Office.
Nondegree Curricula

Preprofessional Programs
Preprofessional Programs

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

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: Biology 100, 100L, 215, 540; Zoology 503 or Biology 541; Chemistry 200, 200L, 201, 201L, 231, 231L, 431, 433L, Mathematics 150, 151; Physics 194A and 194B, 125A and 125B or 195, 195L, 196, 196L, 197, 197L.

In addition to the courses listed, the student should fulfill all requirements for his major and, if possible, take at least one advanced course recommended by his department such as Biology 560; Microbiology 310, 330; Zoology 506, 508, 620. 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 sign up at Physics Room 234, 286-6638.

Prelegal Curriculum

The prelegal program described here may be pursued in conjunction with a degree program. The recommended courses listed do not by themselves constitute a bachelor's degree, but they may serve to fulfill some graduation requirements. Students interested in the legal profession should inform themselves regarding the entrance requirements of the specific law school they hope to attend and choose courses specified by that college.

The following curriculum is designed to meet the requirements of standard American schools of law for a broad and liberal education, while at the same time providing desirable flexibility in the individual programs. There are two patterns of concentration which will usually be indicated for the interests of the student. These are the major-minor pattern and the liberal studies major pattern, Subject to individual variation, the fields of economics, history, and political science should receive first consideration when choosing the pattern of concentration as being the most effective background for later professional study in law and for possible activities in the field of business.

The following courses of study are recommended. Lower division: Business Administration 210A-210B or 212, Economics 120 and 121, Political Science 110 and 120, and a year course in history. Upper division: In the junior and senior years students will plan their course with the counsel of their adviser in terms of the field of law in which they plan to work, but keeping in mind the entrance consideration by all prelegal students in the selection of courses, though it is to be thought of as History 521A-521B, 545A-545B; Political Science 501A-501B, 546, 547A. Additional Economics 380, History 538 and 547A-547B, Political Science 546 and 547A. In addition to the courses taken in the field of concentration, upper division electives in English, philosophy, psychology, sociology, and speech communication are recommended. A mastery of English is essential. The approval of a prelegal adviser is required for all master plans. If the liberal studies major pattern of concentration is chosen, a copy of the master plan is to be filed with the Evaluations Office.

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: Biology 100, 100L, 215, 540; Biology 541 or Zoology 503; Chemistry 200, 200L, 201, 201L, 231-431, 250 or 251, 301A-301B or 410A-410B. Mathematics 150, 151; Physics 194A and 194B and 125A-125B or 195, 195L, 196, 196L, 197, 197L. In addition to the courses listed, the student should fulfill all requirements for his major and, if possible, take at least one advanced course recommended by his department such as Biology 560; Microbiology 310, 330; Zoology 506, 508, 520; Chemistry 361A-361B or 550A-550B. 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 sign up at Physics Room 234, 286-6638.

Preparation for Other Professions

Full programs of professional study in other fields, such as agriculture, forestry, architecture, optometry, pharmacy, veterinary medicine 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. The student is advised to consult the catalog of the university to which he expects to transfer to determine requirements before arranging the program. Further information may be obtained from the Assistant Dean of Students in the appropriate college or school at San Diego State University.
Continuing Education

External Degree Programs
Continuing Education

Functions

The Office of Continuing Education 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 lifestyles and expectations of mature adults. In addition, it provides a range of academic and special programs for students and groups during the summer.

Summer Programs

The Office of Continuing Education administers a comprehensive summer program for San Diego State University. Approximately 400 regular courses, workshops, short courses, interdisciplinary and other institutions and special groups. Selected degrees and certificate programs are available for applicable to graduation and residence requirements.

Three sessions are scheduled each summer, two 3-week term during which four units of credit may be earned and one 6-week term in which students may earn seven units of credit. The summer programs, contact the Director of Summer Programs.

External Academic Programs

In order to meet the needs of the adult community, as well as matriculated students, the Division of External Academic Programs administers a variety of extension courses and workshops. Concurrent most courses are scheduled in the evenings or on weekends; on campus or at convenient learning 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 and programs are needs. The usual class carries three units of extension credit, and are offered throughout the year. These courses are listed in a special External Academic Program Bulletin published each semester.

There is no limit on the number of extension units for which a student may enroll, however, the maximum extension and/or correspondence credit which may be used toward bachelor's degree transfer credit and is therefore not included in the student's San Diego State University scholastic average.

Concurrent Enrollment

A limited number of regular, on-campus classes are open to qualified extension students by a special permission of the department and the instructor. Students who take advantage of Concurrent matriculated students have completed their registration.

Wintersession

The Office of Continuing Education administers a special academic program during the winter recess period titled "The Wintersession." This special session provides students an opportunity to earn additional academic credit through participation in concentrated and interesting course work.

International Programs

An overseas study tour is offered by The California State University and Colleges International Programs in which students enroll for a full academic year simultaneously at their home campuses, where they earn academic credit and maintain campus residency, and at a distinguished foreign university or a special program center.

Cooperating universities abroad include the University of Provence, France; the Universities of Heidelberg and Tubingen, Germany; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; the Universities of Granada and Madrid, Spain; the University of Upsala, Sweden; the Colledge of Massey University, New Zealand; and Waseda University, Japan. In the United Kingdom, cooperating universities, which may vary from year to year, include Aberdeens, London, Oxford, Liverpool, Lampeter, and Sheffield. In addition, California State University and Colleges students may attend a special program in Taiwan, Republic of China, or an architectural program in Copenhagen, Denmark.

Eligibility is limited to students who will have upper division or graduate standing during their year of participation, who have completed at least 2.5 years of study and 75% of total units with a grade point average of 3.0 for international programs, although ability to adapt to a new environment, and who, in the cases of France, Germany, Mexico, and Spain, have completed two years of college level study or the equivalent in the language of instruction at the foreign university. Selection is made by a faculty committee on the student's home campus and by a statewide faculty committee.

The International Programs is supported by state funds to the extent that such funds would have been expended had the student concerned continued to study in California. Students assume costs for transportation, housing and meals. Home campus registration fees, tuition on the home campus for out-of-state students (if the student is not a California resident), and personal incidental expenses or travel costs while abroad are also paid by the student.

The Office International Programs collects and administers funds for those items which the program must arrange or can negotiate more effectively, such as home campus fees, orientation costs, insurance, outboard transportation, and, in some centers, housing. Students accepted in the International Programs may apply for any financial aid available at their home campuses, except work-study and college opportunity grants.

Application for the 1977-78 academic year must be submitted before February 11, 1977 (except for New Zealand and United Kingdom applicants who must submit applications by May 14, 1976 and January 7, 1977, respectively). Applicants are notified of acceptance by April 1, 1977 (New Zealand) and June 3, 1976 (United Kingdom). Detailed information may be obtained from the Office of Continuing Education or by writing to The California State University and Colleges International Programs, 400 Golden Shore Drive, Long Beach, California 90802.

External Degree Programs

The California State University and Colleges System has established procedures for developing and offering specific programs leading to academic degrees through the Office of Continuing Education. These programs are typically made available to qualified adult students in the community without the requirement of matriculating in the University. At present seven such degree programs are offered: Bachelor of Science in Industrial Technology; Bachelor of Science in Criminal Justice; Bachelor of Science in Health Care Administration; Bachelor of Science in Industrial Technology; Master of Arts in Environmental Planning; Master of Arts in Vocational Education; and the Master of Arts in Public Administration. Refer to the section on External Degree Programs.

Conferences and Professional Programs

The Division of Conferences and Professional Programs administers a comprehensive, year-round, University conference center operation for offering on- and off-campus conferences, meetings, seminars, and workshops. Professional certificate programs are coordinated by this division and educational services are provided for a wide variety of groups and professional organizations. The Division also coordinates the activities of the Center for Continuing Education in Business in conjunction with the School of Business Administration. Additionally, the Division administers foreign study programs which are designed to provide American language and cultural training for students from foreign countries. For additional information contact the Director of Conferences and Professional Programs.
Noncredit and Special Programs

A wide range of interesting, low-cost, noncredit courses and programs is developed and administered by the Division of Noncredit and Special Programs. Programs are designed to meet the special educational needs of such diverse groups as retired adults, women, minorities, and other identifiable community groups. The Division also administers the traveling educational workshops series and foreign travel study programs. Additional information may be obtained by contacting the Director of Noncredit and Special Programs.

Military Education Programs

The Division of Military Education 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 University, which has been designated by the Department of Defense as a Servicemen's Opportunity College, offers a wide variety of external degree and certificate programs designed specifically for military personnel, including Bachelor of Science degree offerings in Industrial Technology and Health Care Administration, a Bachelor of Arts degree in Liberal Arts, and a Certificate Program in Hospital Administration. Most classes are held on base for the convenience of the students, while some are scheduled on the University campus to take advantage of laboratories and other resources. For additional information contact the Director of Military 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 have 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 36 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 $20.00.

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

Instruction and Scheduling

The quality of instruction in external degree programs is maintained at the same high level as that in campus programs. While the length of the instructional term for external degree programs may vary from five to sixteen weeks, depending on the time constraints of the student population being served, the contact time per unit of credit is the same as required in campus programs. All courses offered in external degree programs earn 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 elective requirements may do so at community colleges, through concurrent enrollment, 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 Defense Servicemen's Opportunity College Program as these apply to external degree programs. Through the Office of Continuing Education, academic programs are offered which afford service personnel special considerations by:

1. Increasing academic opportunities to pursue higher education through course offerings on military bases;
2. Providing opportunities for military students to complete academic work interrupted by military duties;
3. Providing a designated SOC Counselor who is familiar with the problems attendant to pursuing an education while in the Armed Forces;
4. Providing the maximum allowable recognition of credit from such nontraditional modes as USAF, CLEP, CEEB, and ACE Guide on Service Education Experience, and...
External Degree Programs

Degrees Offered

Graduate:
- Master of Arts degree in public administration.
- Master of Arts in vocational education.

(For graduate external degree program details, refer to the Graduate Catalog of the Graduate Division.)

Undergraduate:
- Major in criminal justice administration with the B.S. degree.
- Major in health care administration with the B.S. degree.
- Major in industrial technology with the B.S. degree.
- Major in liberal arts with the A.B. degree.

Criminal Justice Administration Major

With the B.S. Degree

The criminal justice administration external degree program has been developed to meet the academic and occupational needs of persons who are currently or plan to become employed in the fields of law enforcement corrections, probation, parole, or investigative agencies. This external degree program is similar to the criminal justice administration major offered for matriculated students at SDSU. 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 128 units for this degree.

General Requirements
- Preparation Courses:
  - Social Sciences — 9 units
  - Statistics — 3 units
- General Education — 40 units

American Institutions (3 of the 6 units required are included in general education)

Major
- Thirty-six upper division units selected from Criminal Justice Administration 301, 310, 320, 495, 530, 531; Public Administration 301, 310, 330, 340, 341, 497, 512, 550; Sociology 440, 510.

Approved Electives
- A minimum of 24 upper division units is required.
- The student may select courses from the above list which have not previously been taken to specifically relate to the student's academic and professional objectives including areas outside of criminal justice administration.

Health Care Administration Major

With the B.S. Degree

This external degree program was designed to assist administrators of health care facilities 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 Office of Continuing Education. 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 — 21 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, 360, 457, X-932; Nursing 321, 331, 499 (Management of Patient Care); Public Administration 462 (Health Care Administration), 499 (Providers of Health Care Services), X-901, X-902, X-903; Psychology 350, 460; Sociology 526.

For a description of the X-900 level courses, refer to the Continuing Education Bulletin.

Approved Electives
- A minimum of 15 upper division units is required.
- 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.

Industrial Technology Major

With the B.S. Degree

Emphasis in Electronics Technology

The requirements for this major are the same as those listed in the Courses and Curricula section of this catalog under Industrial Technology.

Only upper division courses which satisfy the requirements for the major will be offered by SDSU externally; 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 128 units for this degree.

General Requirements
- Preparation Courses — 19 units
- General Education — 40 units
- American Institutions (3 of the 6 units required are included in general education)

Major
- The student must complete a core requirement of 36 upper division units.

Approved Electives
- The student must complete a minimum of 30 upper division units of electives.

Liberal Arts Major

With the A.B. Degree

The courses which meet the requirements of this external degree major are offered through the joint sponsorship of the appropriate academic departments and the Office of Continuing Education. The degree is awarded by the Board of Trustees of the California State University and Colleges. The liberal arts external degree major was created to meet the needs of a wide range of students with diverse backgrounds and educational objectives. All courses offered by SDSU are upper division; 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
- General Education — 40 units
- American Institutions (3 of the 6 units required are included in general education)
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. The 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.

A. Literacy
The student must complete a minimum of 33 upper division units in the literacy category. This category includes those materials which comprise the content background of education. The literacy category contains courses which promote an appreciation of constructs, language, paradigms and vocabularies in academic areas or disciplines. No less than 15 units are required in the area of concentration and not less than nine units each in two other areas.

B. Methodological Processes (Heuristics)
A minimum of nine upper division units are required in methodological processes (heuristics). These processes allow the individual to build upon content information and thereby enlarge his or her background. The requirement refers to those techniques needed to use content materials; to perform the operations necessary to gather, arrange and manipulate information.

C. Synthesis
A minimum of six upper division units is required in the third category, synthesis. Synthesis refers to the ability to see basic relationships and processes that underly the various disciplines; to perceive that a discipline is not simply an isolated body of information.

D. Approved Electives
A minimum of 16 upper division units must be selected by the student, with the advice and approval of his adviser, which will enhance the student's perspective of his educational objective.

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. One of the functions of an educational program is to enable students to communicate clearly in their field of interest. For this reason the program has writing requirements beyond those of traditional programs. Written work will be evaluated by the instructor who will be provided with a form by the student to indicate whether written proficiency was demonstrated in the course. The student must have on file verification from instructors in five courses.
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 primarily for undergraduates; those numbered 500 to 599 are upper division courses also acceptable for advanced degrees in the major area; those numbered 600 to 799 are graduate 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 Extension Bulletin only. Courses numbered in the X-900 series may be acceptable only toward the bachelor's degree. Any limitation on the applicability of credit will be specified in the course description.

In 1975-76 a new course numbering system was instituted at San Diego State University. Immediately following the course number in the course and curricula section of the catalog is carried (in parentheses) the course number in effect prior to 1975-76. For example: History 425. (102.). Course numbers which have been changed since 1975-76 are noted in the course description.

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

Prerequisites for Undergraduate Courses
Prerequisites for each course are stated in the course description. The student should not register for any course for which he has not completed the indicated prerequisites. The one exception to this is that he may register for the course without having completed the stated prerequisites if he has secured the consent of the instructor.

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. Classes 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 Topic Courses (299 or 496)
Any department, school, or college may offer courses under the numbers 299 and 496. Experimental Topics (2-4) under the following conditions: Each course must be approved by the Dean of the School or College concerned. Such a course may be offered no more than three years with the same title and content. Limit of nine units of 299 (excluding University Studies 299) and nine units of 496 applicable on a bachelor's degree of which no more than three units of 299 (excluding University Studies 299) and nine units of 496 may be applicable to general education requirements. Such courses are applicable to the minor or to preparation for the major only by special action of the department.

Honors Courses (300)
These courses are intended for students with superior scholastic records and aptitude. An interested student should direct his inquiries to the chairman 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

Faculty
Professor: Lasiter (Chairman)
Assistant Professors: Kramer, Taylor

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 training base and the Flying Instruction Program conducted at a local civilian flying school. Summer training is required for all students, other than veterans, prior to enrolment 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 apply for 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 continue their education in graduate programs. Graduates may apply for Air Force sponsored graduate study after 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. Veterans 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 are trained in the use of weapons, drill and ceremonies, and observe selected Air Force units 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 the Air Force. Instruction is divided between class work taught on the campus and flying training conducted by a civilian contractor in the area. Cadet retainer pay of $100 per month is given for 20 months of the program. Cadets receive approximately $350 during the Field Training Unit and are reimbursed for the cost of travel to and from the unit.

Aerospace Studies Minor
The minor in aerospace studies consists of a minimum of 15 units in aerospace studies. Courses in the minor may not be counted toward the major.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

333-S. (133) 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 Chairman.

400A-400B. (141A-141B) 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.

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

In the College of Arts and Letters

Faculty

Chairperson: Foster
Professor: Chambers
Associate Professor: Meadows
Assistant Professors: Foster, Thomas, Weber
Lecturer: McKinney

Offered by Afro-American Studies

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

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 on page 63 of this catalog. A minor is not required with this major.

Preparation for the major, Afro-American Studies 220, 230, 233, and 250. (12 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 "Graduation Requirements" on page 67.

Major: A minimum of 24 upper division units to include Afro-American Studies 320 (six units) and 12 units selected from the following areas and six units from the remaining two areas.

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

Area II. Afro-American Studies 363, 460, 461, 471, and 470.

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 15 units in Afro-American studies. Nine units of which must be in upper division courses. Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

100. (M) Fundamentals of Computation (0)
Basic mathematical concepts: A review in arithmetic and its basic operations. Topics include set notation, first degree equations in one unknown, factoring, graphs and systems of linear equations.

110A. (1A) Written Communication for the Afro-American (3)

110B. (1B) Intensive Writing (3)
Practice of composition skills utilizing an analytical and critical approach to the ideals and philosophies of Black American writers.

120A. (2A) 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, may be used for general education requirements in basic subjects.

120B. (2B) Composition and Literature (3) I, II
Outstanding works of fictional writings by Black authors. Practice of composition skills.

140. (4) Communications (3) I, II
Practice in speaking, critical listening, reasoning, and organizing. Theory and techniques of general education requirements in basic subjects.

160. (5) Intermediate Computation (3) I, II

160A. (7A) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies Afro-American institution requirements.)

180. (8) Afro-American Music (3) I, II
Musical contributions of Black Americans from African music to today. Musical styles, events, significant contributors, and the role of sociocultural variables in the development of the music. In addition to African music, the blues, spirituals, gospel, jazz and art music will be studied. May be used for general education requirements in humanities.

220. (20) Economics and Management in Urban Development (3)
Principles of economics and management and their application to urban development. May be used for general education requirement in social sciences.

230. (30) Ethnicity and 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. May be used for general education requirement in social sciences.

231. (31) Cultural Patterns and Identity (3) I, II

232. (32) Afro-American Life Styles (3) I, II
An analysis of institutions in society and their socializing effect upon Afro-Americans, and the cultural parameters that guide behavior.

233. (33) Afro-American History (3-3) I, II

250. (50) Psychology of Blackness (3) I, II

260. (60) Afro-American Literature (3) I, II

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

170A-170B. (7A-7B) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies Afro-American institution requirements.)

180. (8) Afro-American Music (3) I, II
Musical contributions of Black Americans from African music to today. Musical styles, events, significant contributors, and the role of sociocultural variables in the development of the music. In addition to African music, the blues, spirituals, gospel, jazz and art music will be studied. May be used for general education requirements in humanities.

220. (20) Economics and Management in Urban Development (3)
Principles of economics and management and their application to urban development. May be used for general education requirement in social sciences.

230. (30) Ethnicity and 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. May be used for general education requirement in social sciences.

231. (31) Cultural Patterns and Identity (3) I, II

232. (32) Afro-American Life Styles (3) I, II
An analysis of institutions in society and their socializing effect upon Afro-Americans, and the cultural parameters that guide behavior.

233. (33) Afro-American History (3-3) I, II

250. (50) Psychology of Blackness (3) I, II

260. (60) Afro-American Literature (3) I, II

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES (Intended Primarily for Undergraduates)

320. (120) Integrative Schemes in Organizational Management (3)

330. (130) Black Child Development (3) I, II

340. (140) Communications and Community Action (3) I, II

350. (150) Black Music (3) I, II

360. (160) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies Afro-American institution requirements.)

370. (170) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies Afro-American institution requirements.)

380. (180) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies Afro-American institution requirements.)

390. (190) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies Afro-American institution requirements.)
American Studies

Faculty

American Studies is administered through the American Studies Committee, composed of faculty members from the departments of Afro-American Studies, Family Studies and Consumer Sciences, Geography, History, Linguistics, Literature, Political Science, and Sociology. Professor Porsching Vartanian is student adviser.

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.

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 on page 63 of this catalog.

Preparation for the major. American Studies 151, 152, and English 250A-250B or History 110A-110B (12 units) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites; 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 "Graduation Requirements" on page 67.

Major. A minimum of 38 upper division units to include American Studies 590. History 547A-547B or History 548A-548B may be used for Group B), and two groups of nine upper division units selected from Groups A, B, C, and D; to be approved by the adviser. American Studies 590 is recommended for all majors.

The remainder of the courses needed to fulfill the 30-unit requirement may be taken in courses listed in Groups A, B, C, and D, except that no more than 12 of the 30 units may be taken from any one group.

Group A. American Literature. American Studies 580 (when applicable); English 510, 511, 512, 513, 514, 516, 520.


Group D. Electives. American Studies 580 (when applicable); Anthropology 545; Art 560; Music 351D; Philosophy 564; Religious Studies 520, 522.

LOWER DIVISION COURSES

151. Study of American Culture (3) I, II

Focuses on a particular American issue, examining it in terms of the methodological concerns relating to American culture. Recommended, but not required, for American studies majors. American Studies 152 may be taken without 151.
UPPER DIVISION COURSE
(Intended Primarily for Undergraduates)

498. Senior Seminar in American Culture (3) I, II
Advanced reading and directed research on a problem in the study of American culture. Particular problems are presented with an emphasis on the integration of two or more disciplines or disciplinary techniques.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

501. Study of American Culture (3) I, II
Prerequisite: Major in American studies; open to other students with permission of instructor. American studies as a discipline, the critical methods of the field, the variety of materials for interdisciplinary study. (Formerly numbered Humanities 180.)

580. Topics in American Studies (3) I, II
Topics dealing with cultural images and myths, alienation and nationalism; problems around racism, minorities and counter-cultures. May be repeated once with new content; and with the approval of the adviser, more than once by American studies majors. Maximum credit six units applicable on a master's degree in American studies. (Formerly numbered English 138.)

Anthropology
In the College of Arts and Letters

Faculty
Emeritus: Anderson, Rogers
Chairman: Leach
Professors: Ezell, Goldkind, Leach, Lippold, Watson, Whitney
Associate Professors: Greenfeld, Himes, Pendleton, Stanford
Assistant Professors: Ball, Bartel, Dubbs, Moore, Pillasbury, Rohrl, Sonek
Lecturers: Amstredt, Henry, Kasper, Selvadurai, White

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.

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 on page 63 of this catalog.
A minor is not required with this major.
Preparation for the major. Anthropology 100, 101. (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 "Graduation Requirements" on page 67.
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 400A and 400B may not be counted in the upper division requirements for graduation.)

Anthropology Minor
The minor in anthropology consists of a minimum of 15 units in anthropology, nine units of which must be in upper division courses (except for Anthropology 400A-400B). Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

100. (1.) Physical and Cultural Origins of Man (3) I, II
Man's place in nature; fossil evidences of early man; theories of human development; racial variability; the growth and development of man's culture; the rise of civilization. Not open to students with credit in Anthropology 400A.

101. (2.) Introduction to Cultural Anthropology (3) I, II
May be taken prior to Anthropology 100.
Man's relationship to his environment, types of preliterate society, system of social organization, politics, economics, religion, and language. Not open to students with credit in Anthropology 400B.

150. World Cultures (3)
Prerequisite: Anthropology 101.
Comparative and systematic application of the culture concept to the major culture areas of the world.

200. (4.) Archaeological Field Methods (3)
May be taken prior to Anthropology 100.
One lecture and six hours of laboratory. Application of the methods and techniques of archaeology through excavation, laboratory analysis, and preparation of reports.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.
UPPER DIVISION COURSES  
(Intended Primarily for Undergraduates)

300. (166.) Honors Course (1-3)  
Refer to Honors Program.

301. (101.) Principles of Physical Anthropology (3) I, II  
Two lectures and three hours of laboratory.  
Prerequisite: Anthropology 100 or 400A. Recommended for majors only.  
Primate comparative anatomy and human paleontology. Analysis of the physical subject and skeletal specimens. The statistical treatment of data in physical anthropology. Applications of physical anthropology in industry and medicolegal problems.

302. (102.) Principles of Anthropology (3) I, II  
Two lectures and three hours of laboratory.  
Prerequisite: Anthropology 101 or 400B. Recommended for majors only.  
The structural nature of language. How languages differ, change and influence each other. The language families of the world. The significance of language for human social life in a variety of cultures.

303. (103.) Principles of Cultural Anthropology (3) I, II  
Prerequisite: Anthropology 101 or 400B. Recommended for majors only.  
Primary emphasis on the principles and fundamentals guiding the study of cultural anthropology and its various topics of interest. An overview of the more recent trends within the field will be presented.

304. (104.) Principles of Anthropological Linguistics (3) I, II  
Prerequisite: Anthropology 100 or 101 or 400A, 400B. Recommended for majors only.  
The structural nature of language. How languages differ, change and influence each other. The language families of the world. The significance of language for human social life in a variety of cultures.

305. (105.) History of Anthropological Theory (3) I, II  
Prerequisite: Anthropology 303 or 352.  
Development of theories which lie behind the science of anthropology. Applications of the theory of culture to field methods and interpretation of findings.

350. (152.) World Ethnography (3)  
Prerequisite: Anthropology 101 or 400B.  
The cultural patterns of representative aboriginal peoples. Industries, arts, social organization, and supernaturalism considered with a view to environmenal adjustment, historical development and functional interrelationship. Ethnological theories reviewed and applied in interpreting aboriginal societies.

351. (160.) Primitive Technology (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Nine units of anthropology.  
Techniques of tool manufacture, subsistence, shelter, clothing and arts and crafts of nonindustrial peoples.

352. (154.) Social Anthropology (3)  
Prerequisite: Anthropology 350.  
The 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.

360. (169-S) Backgrounds of Mexican Civilization (3)  
Prerequisite: Anthropology 100 or 101 or 400A or 400B.  
Mexico's archaeological past and its bearing on historic and recent peoples and cultures. Conflicts between Aztec and Mayan cultures and western civilization. The relationship of Mexican civilization to other Latin American cultures.

361. (157.) Mesoamerican Ethnohistory (3)  
Prerequisite: Anthropology 100 or 101 or 400A or 400B.  
Aboriginal pre- and post-Conquest civilization of Mexico with emphasis on the developments, changes, and characteristics of aboriginal, mestizo, and creole society in Colonial Mesoamerica, stress on appropriate texts and codices.

400A-400B. (100A-100B.) Principles of Anthropology (3-3) I, II  
Anthropology 400A: Human evolution as a biocultural process from the perspectives of human physical anthropology, paleoethnobiology, and prehistory. Anthropology 400B: Systems of cultural cognition, family organization, government, and religion in non-Western societies, comparison with analogous Western institutions. Anthropology 400A is not open to students with credit in Anthropology 100. Anthropology 400B is not open to students with credit in Anthropology 101. Anthropology 400A-400B may not be used to fulfill minimal upper division requirements in the anthropology major or minor.

496. (196.) Topics in Anthropology (3) I, II  
Prerequisite: Nine upper division units in anthropology.  
A senior level undergraduate seminar, topic to be announced in the class schedule. Maximum credit six units.

497. (197.) Investigation and Report (3)  
Prerequisites: Grade point average of 3.0 in the anthropology major and consent of instructor.  
Analysis of special topics in anthropology and preparation of reports on the results of the study. Course is intended for advanced majors only who plan to continue in advanced degree programs.  
Course is intended for advanced majors only who plan to continue in advanced degree programs.

498. (198.) Special Study (1-3) I, II  
Individual Study. Maximum credit six units.  
Prerequisite: Consent of instructor.
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560. (173.) Advanced Archaeological Field Methods  (3)
One lecture and six hours of laboratory.
Prerequisite: Anthropology 200.
Advanced projects in excavation and stabilization of ruins, archaeological surveys, laboratory
analysis and preparation of reports.

561A-561B. (186A-186B.) 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 paleontology, paleoanthropology and technologies. Semester II: Practical
applications of materials from 561A. Individual laboratory research project required.

570. (147.) Prehistory of South America  (3)
Prerequisite: Anthropology 302.
Development of native South American cultures from initial occupation to the 16th century.
Emphasis on major historical trends, particularly in the Andean area.

571. (170.) Archaeology of North America  (3)
Prerequisite: Anthropology 100 or 400A.
Origin of the American Indian and survey of the main prehistoric cultures of the North American
continent.

572. (172A.) Southwest Prehistory  (3)
Prerequisite: Anthropology 100 or 400A.
Prehistoric Indian cultures in the American Southwest: ecological adaptations and outside cultural
influences.

573. (174.) Prehistoric Archaeology of Europe  (3)
Prerequisites: Anthropology 100 and 101 or 400A and 400B.
The Stone Age, Bronze Age, and Iron Age cultures of Europe, North Africa, and the Middle East.
Industries, habitats, and art of peoples antecedent to recorded history. Methods of investigation
used in reconstructing prehistoric civilizations.

574. (176.) Early Near and Middle Eastern Civilizations  (3)
Prerequisite: Anthropology 100 or 400A.
Anthropological foundations of historic primary civilizations of the Near and Middle East in their
early phases of development as revealed by archaeological and other sources.

575. (180.) Protohistoric Cultures of Mesoamerica  (3)
Prerequisite: Anthropology 100 or 400A.
The development of civilization in pre-Columbian Mexico and Central America antecedent to the
Toltecs, Classic Maya, and related cultures.

576. (183.) Classic Pre-Columbian Civilizations of Middle America  (3)
Prerequisite: Anthropology 100 or 400A.
Aboriginal Mexican and Central American civilizations through the Age of Exploration and
Conquest. Aztecs, Mixtecs, Zapotecs, Mayas, and related cultures.

577. (182.) Post-Conquest Cultures of Middle America  (3)
Prerequisite: Anthropology 101 or 400B.
Aboriginal and mixed cultures of Mexico and Central America in Colonial and recent epochs.
Aftermath of Conquest and exploitation.

578. (183.) Archaic Hellenic, Aegean, and Italian Cultures  (3)
Prerequisite: Anthropology 100 or 400A.
Anthropological foundations of primary civilizations of Greece, the Aegean, and Italy, in their
prehistoric phases of development as revealed by archaeological and other sources.

579. (184.) Archaeology of Sub-Saharan Africa  (3)
Prerequisite: Anthropology 100 or 400A.
A chronological review of the major archaeological cultures in sub-Saharan Africa. The
archaeological evidence for the evolution of man and his culture in Africa will be presented in a
comparative approach.

580. (189.) Topics in Arctic Anthropology  (3)
Prerequisites: Anthropology 100 or 101 and consent of instructor.
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.
Arabic

In the College of Arts and Letters

Faculty
Lecturer: Busool

Offered by the Department of Classical and Oriental Languages and Literatures
Courses in Arabic.
Major or minor work in Arabic is not onerous.

LOWER DIVISION COURSES

101. (1.) Elementary (5)
Pronunciation, oral and written drills, essentials of grammar, and introduction to basic texts.

202. (2.) Elementary (5)
Prerequisite: Arabic 101.
Continuation of Arabic 101.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

( Intended Primarily for Undergraduates)

303. (103.) Readings in Literary Arabic (5)
Prerequisite: Arabic 202.
Application of principles of grammar and readings on advanced level in literary Arabic.

304. (104.) Readings in Literary Arabic (5)
Prerequisite: Arabic 303.
Continuation of Arabic 303.

496. Topics in Arabic Studies (1-4)
Topics in Arabic language, literature, culture, and linguistics. May be repeated with new content.
Maximum credit eight units.

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

Art

In the College of Professional Studies

The Department of Art is a Member of the National Association of Schools of Art.

For purposes of exhibition and reference, the department reserves the right to retain for a limited period some of each student's work produced in class.

Faculty
Emeritus: Andrews, Jackson, Ricco
Chairperson: Higgins
Professors: Baker, Berg, Bigelow, Covington, Dirks, Fisch, Higgins, Hopkins, Lingren, Longenecker, Miller, Rogers, Swiggett, Tanzer, Wallace
Associate Professors: Bowler, Frick, Groves, Hodge, Hunter, Orth, Papworth, Peterson
Assistant Professors: Austin, Durrant, Esser, Money, Perczel, Ray
Lecturers: Foster, Jameson, Stoddard, Tuttle, Veltzer, Wylie

Offered by the Department
Master of Arts degree in art.
Major in art with the A.B. degree in liberal arts and sciences.
Major in art with the A.B. degree in applied arts and sciences.
Minor in art.
Teaching major in art for the single subject teaching credential.

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 on page 63 of this catalog.

This major in art may be planned with an emphasis in studio arts or art history.
A minor is not required with this major in art.

Emphasis in Studio Arts

Preparation for the major. Art 100, 101, 157, 200, 216, 258, 259, Philosophy 101; and three units selected from Art 203, 204, 206. (30 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper-division units in art to include Art 403, 404, 500, 557, 590; Philosophy 541, and six units selected with the approval of the adviser from Art 405, 406, 416, 499, 502, 525, 506, 509, 516, 571, 572, 573 and 574.

Emphasis in Art History

Preparation for the major. Art 258, 259, 264, 265. (12 units.) Four semesters of French, German (or Italian for Renaissance majors only) with a grade of "B" or better, or a reading knowledge of the language selected. Refer to "Graduation Requirements" on page 63.

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 art to include Art 557, 568, 571, 573, 575; nine units selected from other art history offerings with the approval of the art history faculty; of which six units of electives may be selected from anthropology, history, or philosophy.
Art Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 63 of this catalog. 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 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 continuation of their educational experience in graduate schools with the goal of teaching at institutions of higher learning. The preprofessional program in art education prepares the student for teaching in either elementary or secondary schools. The crafts program can be developed to specialize in ceramics, enameling, furniture or industrial design, jewelry, metal smithing, textile design and weaving.

A minor is recommended with this major. However, in graphic communication an English minor is recommended.

Emphasis in Crafts

Preparation for the major. Art 100, 101, 200, 201, 220, 256, 259, and six units of art electives.

Major. A minimum of 24 upper division units in art to include nine units selected from the following areas: fiber, metal, clay, wood, three units of extended work in one of the selected areas; six units of art electives; and six units of art history. Twelve units of advanced work in one area are strongly recommended.

Emphasis in Graphic Communication

Preparation for the major. Art 100, 101, 141, 200, 201, 256, 259; and six units selected from Art 203, 204, 205, 240, 241. (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, 591 and 592.

Emphasis in Environmental Design

Preparation for the major. Art 100, 101, 200, 201, 247, 248, 249, 250, 251, 258, 259; and three units selected from Art 216, 220, 225. (36 units.) Recommended: Art 141, 205, 234. Industrial Arts 121, Family Studies and Consumer Sciences 119, 245.

Major. A minimum of 24 upper division units in art selected from Group I or Group II in consultation with an advisor.

Group I: Art 451, 553, 557; six units selected from 381, 481, 581; and six units selected from Art 323, 348, 450, 452, 454, 547, 577, 591.

Group II: Art 450, 454, 547, 550, 557, 577, and six units selected from Art 348, 381, 416, 451, 481, 552, 553, 581.

Emphasis in Painting and Printmaking

Preparation for the major. Art 100, 101, 200, 201, 203, 204, 205, 256, 259. (27 units.)

Major. A minimum of 24 upper division units in art to include Art 557; three additional units of art history; and 16 units selected in consultation with the adviser from Art 403, 404, 405, 406, 410, 411, 500, 502, 503, 504, 505, 509, 510, 511, 512.

Emphasis in Sculpture

Preparation for the major. Art 100, 101, 200, 201, 216, 256, 259; and three units selected from Art 223, 224, 225, 231, 234. (24 units.)

Major. A minimum of 24 upper division units to include Art 416 or 517, 418, 488, 516, 557; three additional units of art history; and six 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 Minor

The minor in art consists of a minimum of 15 units in art, six units of which must be in upper division courses. Courses in the minor may not be counted toward the major.

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 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.

Preparation for the major. Art 100, 101, 200, 201, 220, 256, 259, and six units of electives in art.

Teaching Major. A minimum of 26 upper division units in Art to include Art 557; three units of art history; and twenty 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 555 and 556, and three units of one other emphasis area. (20 units.)

Group II: Six units of drawing and painting, six units of crafts or sculpture, three units of graphic communication or environmental design, and Art 555 and 556. (20 units.)

LOWER DIVISION COURSES

100. (1A.) Drawing and Composition (3) I, II

Six hours.

Prerequisites: Preparation for the major.

Teaching: Six hours.

101. (2A.) Design and Aesthetics (3) I, II

Six hours.

Prerequisites: Preparation for the major.

141. (14A.) Beginning Graphic Communication (3) I, II

Six hours.

Prerequisites: Preparation for the major.

157. (5.) Art Orientation (3) I, II

Six hours.

Prerequisites: Preparation for the major.

200. (1B.) Drawing and Composition (3) I, II

Six hours.

Prerequisites: Preparation for the major.

216. (2B.) Design and Aesthetics (3) I, II

Six hours.

Prerequisites: Preparation for the major.

217. (15A-15B.) Life Drawing (3) I

Six hours.

Prerequisites: Preparation for the major.

257. (15A-15B.) Life Drawing (3) II

Six hours.

Prerequisites: Preparation for the major.

264. (16A-16B.) Painting (3) I, II

Six hours.

Prerequisites: Preparation for the major.

265. (18A-18B.) Aquatics Media (3) II

Six hours.

Prerequisites: Preparation for the major.
216. (17A-17B.) Sculpture (3) I, II
Six hours.
Prerequisite: Art 201.
Three dimensional design using variegated materials. Maximum credit six units.

217. (27.) Life Modeling—Sculpture (3) I, II
Six hours.
Prerequisite: Art 201.
Creative experimentation with sculptural forms from the human figure.

220. (61.) Design in Crafts (3) I, II
Six hours.
Prerequisite: Art 201.
Visual and structural form in crafts.

225. (17A-18B.) Ceramics (3) I, II
Six hours.
Prerequisite: Art 101.
Design and construction of hand-built ceramic forms. Introduction of glaze for surface enrichment. Maximum credit six units.

231. (70.) Beginning Jewelry Design (3) I, II
Six hours.
Prerequisite: Art 220.
Design and fashioning of jewelry.

234. (80A-80B.) Weaving (3) I, II
Six hours.
Prerequisite: Art 220.
Structure and design of woven fabrics. Maximum credit six units.

240. (7.) Graphic Imagery (3)
Six hours.
Prerequisite: Art 101.
The organization concepts of design applied to experimental photographic and technical reproductive media, and environmental graphics.

241. (14B.) Intermediate Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 141.
Typographic and design concepts applied to layout for contemporary media.

242. (94A-94B.) Fashion Imagery (3) I, II
Six hours.
Prerequisite: Art 101.
Design of original contemporary costumes and the dressing of the fashion image. Maximum credit six units.

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

248. (33A.) Visual Presentation (3) I, II
Six hours.
Methods, materials, and tools of the professional environmental designer stressing art principles.

249. (33B.) Visual Presentation (3) I, II
Six hours.
Prerequisite: Art 248.
Methods, materials, and tools of the professional environmental designer stressing art principles.

250. (95A.) The Contemporary House (3) I, II
Six hours.
Prerequisites: Art 100, 201, and 248.
Elementary problems in neighborhood planning, house design, and landscaping.

251. (95B.) Interior Design (3) I, II
Six hours.
Prerequisite: Art 250.
Elementary functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume.
403. (1115A-115B.) Life Drawing and Painting (3) I, II
Six hours.
Prerequisites: Art 203 and 204.
Introduction to life drawing and painting from nude and costumed models. Maximum credit six units.

404. (1116A-116B.) Advanced Painting (3) I, II
Six hours.
Prerequisite: Art 204.
Advanced composition and painting technique. Maximum credit six units.

405. (1116A.) Advanced Aquatint Media (3) I, II
Six hours.
Prerequisites: Art 201 and 204.
Composition in watercolor and related media.

406. (1112A.) Design and Composition (3) I, II
Six hours.
Prerequisites: Art 216.
Creative design in diverse materials. Maximum credit six units.

410. (1216A-1216B.) Intaglio Printmaking (3) I, II
Six hours.
Prerequisites: Art 101 and 203. Art 403 and 500 are recommended.
Creative intaglio—etching, drypoint, aquatint, engraving and variations. Emphasis on fine print quality and technical development. Maximum credit six units.

411. (1116A-1116B.) Lithography Printmaking (3) I, II
Six hours.
Prerequisites: Art 101 and 203. Art 403 and 500 are recommended.
Creative lithography—stone and plate planographic process. Emphasis on fine print quality and technical development. Maximum credit six unit.

416. (1117A-1117B.) Advanced Sculpture (3) I, II
Six hours.
Prerequisite: Art 216.
Creative design in diverse materials. Maximum credit six units.

421. (1111A.) Industrial Design (3) I, II
Six hours.
Prerequisites: Art 100 and 201.
Design of objects for manufacture with reference to their use, materials, and in accordance with factory practices and machine techniques. Practice in the techniques of presentation, working drawings, rendering and perspective and scale models.

423. (1113B.) 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. (1119B.) Ceramics (3) I, II
Six hours.
Prerequisite: Art 326.
Continuation of Art 325. Further development of knowledge. skills and philosophy of ceramics through individual creative projects.

429. (161A.) Design in Enamels (3) I, II
Six hours.
Prerequisite: Art 220.
Design and production of vitreous enamels. Maximum credit six units.

431. (170B.) Jewelry and Metalwork (3) I, II
Six hours.
Prerequisites: Art 231 or 331.
Development of jewelry and hollow ware.

435. (181.) Nonwoven Textile Construction (3) I, II
Six hours.
Prerequisite: Art 220.
Textile structures with an emphasis on nonloom techniques.
496. **Experimental Topics** (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

497. **(196B.) Senior Investigation and Report** (3) I, II
Nine hours for 497A; three hours for 497B.
Prerequisite: 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. **(196A.) 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. **(199.) Special Study** (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor.

**UPPER DIVISION COURSES**
(Also Acceptable for Advanced Degrees in the Major Area)

500. **(100A-100B.) Advanced Drawing** (3) I, II
Six hours.
Prerequisites: Art 203 and 204.
Drawing emphasizing the qualitative aspect of visual subject matter. Maximum credit six units.

501. **(102A-102B.) Intermediate** (3) I, II
Six hours.
Prerequisites: Art 200 and 201.
Process and materials in plane and space. Maximum credit six units.

502. **(115C-115D.) Life Drawing and Painting** (3) I, II
Six hours.
Prerequisite: Art 403.
Drawing and painting from nude and costumed models. Maximum credit six units.

503. **(116C-116D.) Advanced Painting** (3) I, II
Six hours.
Prerequisite: Art 404.
Pictorial composition and painting in color. Maximum credit six units.

504. **(118A.) Advanced Aquatint** (3) I, II
Six hours.
Prerequisite: Art 405.
Exploration of a variety of materials and techniques. Development of the aesthetic and technical abilities of the artist-craftsman. Maximum credit six units.

505. **(119A.) Advanced Aqueous Media** (3) I, II
Six hours.
Prerequisite: Art 406.
Composition in watercolor and related media.

506. **(120A-120B.) Design and Composition** (3) I, II
Six hours.
Prerequisite: Art 406.
Structure in picture making.

507. **(126A-126B.) Relief Printmaking** (3) I, II
Six hours.
Prerequisite: Art 203.
Woodcut, wood engraving, gessoott, linoleum, collotype, and relief printmaking processes.

508. **(126C-126D.) Intaglio Printmaking in Color** (3)
Six hours.
Prerequisite: Art 410.
Advanced creative intaglio printmaking in color, including zinc and copper plate; etching, drypoint, aquatint, engraving, embossing and color variations. Emphasis on fine print quality and technical development in the color process unique to this medium. Maximum credit six units.

509. **(128A-128B.) Experimental Papermaking** (3) I, II
Six hours.
Prerequisite: Art 420.
Experimentation and application of research concerning the use of paper materials and techniques as an integral part of the design process. Maximum credit six units.

510. **(130A-130B.) Advanced Individual Problems** (1-3) I, II
Six hours.
Prerequisites: Art 421.
Advanced individual problems in art. Maximum credit six units.
532. Metalworking (3) I, II
Six hours.
Prerequisite: Art 331.
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 photoetching, electroforming, small-scale forging in iron and cut steel. Maximum credit six units.

534. (1850-1600) 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. (114C, 114D) 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. (1938) 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. (1968) 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. (188) Environmental Theory (3)
Prerequisite: Art 247 or 347.
Survey of alternative solutions to the problem of design of the physical environment.

550. (187) Environmental Prototypes (3)
Two lectures and four hours of laboratory.
Prerequisite: Art 450.
Research and development of creative architectural concepts with emphasis in space enclosure systems and cybernetics.

552. (195C) Professional Methods of Interior Design (3) I, II
Six hours.
Prerequisite: Art 451.
Techniques and analyses of specification writing, estimating, contractual agreements, budget studies, and supervision of professional interior design projects.

553. (195D) Contract Interior Design (3) I, II
Six hours.
Prerequisite: Art 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) I, II
Prerequisites: Art 249, 251, and consent of instructor.
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.

557. (1564) History of Modern Art (3) I, II
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the French Revolution to the 20th century. Field trips included.

558. (1568) Contemporary Art (3) I, II
Prerequisite: Art 557.
Current movements in sculpture, painting, graphics and architecture.

560. (157) The History of American Art (3) II
Prerequisites: Art 258 and 259.
South and Middle American art and architecture from earliest time to the arrival of Spaniards.

562. (1518) Colonial Art of Latin America (3) II
Prerequisites: Art 258 and 259.
The art and architecture of Latin America from the colonial period to the present. Field trips included.

565. (152A) The Art of India and Southeast Asia (3) II
Prerequisites: Art 258 and 259.
History of the art, architecture, and sculpture of India and Southeast Asia.

566. (152B) The Art of Persia and the Islamic World (3) I
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from prehistoric times to the fourth century B.C.

568. (153) Art of Crete, Mycenae, Greece, and Rome (3) II
Prerequisite: Art 259.
Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.

569. Art of Sub-Saharan Africa (3) I
Prerequisites: Art 258 and 259.
Study of the art of Africa south of the Sahara viewed within a cultural context.

570. Art of Oceania (3) I
Prerequisites: Art 258 and 259.
Clay and ceramic arts of Australia, Melanesia, Polynesia, and Micronesia viewed within a cultural context.

571. (154A) Medieval Art (3) II
Prerequisites: Art 258 and 259.
Development of painting, sculpture and architecture from the time of Constantine through the Byzantine period.

572. (154B) 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. (155A) Renaissance Art in Italy (3) III
Prerequisites: Art 258 and 259.
Architecture, painting and sculpture of the Renaissance period in Italy.

574. (155B) Northern Renaissance Art (3) I
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting north of the Alps during the Renaissance period.

575. (155C) Baroque and Rococo Art (3) II
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting of the Baroque and Rococo periods.

577. (160) History of Architecture (3) Irregular
Prerequisites: Art 157, or 258 and 259.
Architecture from primitive times to the present.
578. (126C) History of Printmaking (3) Irregular
Prerequisites: Art 258 and 259.
History of printmaking from its inception to the present.

579. (129B) History of Ceramics (3) I, II
Prerequisites: Art 479.
Philosophical approaches to design of pottery and techniques as related to contemporary ceramics. Field trips.

580. (164) History of Costume (3) Irregular
Prerequisites: Art 258 and 259.
Historic origins of costume traced through aesthetic, social and political influences dominant during each period.

581. (135C) History and Theory of Environmental Design (3) I, II
Prerequisites: Art 258 and 259.
Environmental arts in the 19th and 20th centuries.

584. (105) Aesthetics of Visual Environment for Young People (3) I, II
Six hours.
Prerequisite: Art 101.
Means of developing an expanded awareness of the environment in the young. Not open to students with credit in Art 247 or 347.

585. (175) 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.

586. (176) Seminar in Practicum in Art (3) I, II
Prerequisites: Twenty upper division units in art and concurrent assignment to student teaching. Discussion, readings, and research study related to art presentation strategies.

587. (110) 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.

590. (190) Principles and Elements of Visual Aesthetic Organization (3) II
Three hours.
Prerequisites: Senior standing and Art 157.
Visual aesthetic materials and the psychological principles involved in aesthetic organization.

591. (191A) 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. (191B) Gallery Exhibition Design (3) I, II
Six hours.
Prerequisite: Art 591.
Advanced problems in the theories and techniques of gallery exhibition design.

GRADUATE COURSES
Refer to Graduate Catalog.

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, Geography, History, Linguistics, Literature, Philosophy, Political Science, Religious Studies, and Sociology, the schools of Business Administration and Education, and the Library. Professor Alvin D. Costa 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.

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 on page 63 of this catalog.

Preparation for the major. Six units in History 105A, 105B, 120A, 120B, or Philosophy 101 and 102; six units in Anthropology 100 and 101, Economics 120 and 121, Geography 101 and 102, or Political Science 110 and 130, and Asian Studies 159A-159B. (18 units.) 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 one foreign language as part of the preparation for the major. Asian language recommended. Refer to "Graduation Requirements" on page 67.

Major. A minimum of 30 upper division units to include: from Asian studies not less than three units from Asian Studies 499 or 596; from the humanities not less than 12 units from at least two departments chosen from Art 565, Comparative Literature 490, 495, 530, 570*, 571, 577, 580, 581; History 49*, 495, 514, 515, 553, 554, 564, 565, 566, 567, 567A, 567B, 569, 570, 571, 573, 574, 575*, History 49*, 514, 515, 553, 554, 564, 565, 566, 567, 567A, 567B, 569, 570, 571, 573, 574; Philosophy 301 (unless waived by the instructor) and 575*, 579; Religious Studies 501, 503, 506, 508; (b) from the social sciences not less than six units from at least two departments chosen from Anthropology 547, 550, 551, 560, 580; Business Administration 576; Economics 330, 465; Geography 331, 333, 334, 335, 489, 496, 561, 562.

* When relevant.

Asian Studies Minor
The minor in Asian Studies consists of a minimum of 21 units to include History 120A-120B or Asian Studies 159A-159B. 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: (a) from the humanities not less than six units chosen from History 561A-561B, 562, 563, 564-564B, 566; (b) from the social sciences not less than six units chosen from Anthropology 547, 550, 551, 560; Business Administration 576; Economics 330, 465; Geography 331, 333, 334; Political Science 499, 562.

Courses selected from (a) and (b) must be outside the major. No more than six units may be chosen from among History 566, 567A-567B, and Anthropology 551. No more than six units may be chosen from among History 569, 570, and Anthropology 552. Three units from Asian Studies 499 or 596 may be substituted for three units in either (a) or (b) above.

Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSE
159A-159B. The Asian Heritage (3-3)
An interdisciplinary year course on the cultures of Southern, Southeastern, and Eastern Asia, with emphasis on the interaction of ideas, peoples and their environment. (Formerly numbered Humanities 59A-59B)
UPPER DIVISION COURSES
(Intended Primarily 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 159A-159B.

499. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisites: At least six units of upper division work completed toward the major or minor in Asian studies and the consent of the instructor.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees in the Major Area)

596. Selected Studies in Asian Cultures (3)
Topics in various aspects of Asian studies, topics to be announced in the class schedule. May be repeated with new content. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Catalog.

Astronomy
In the College of Sciences

Faculty
Emeritus: Huffer, Smith
Chairman: Nelson
Professors: Daub, Nelson, Schopp, Young
Associate Professor: Angione
Assistant Professor: Tabert

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 on page 63 of this catalog.

Preparation for the major.
Astronomy 101, 109, Physics 195, 195L, 196, 196L, 197, 197L (16 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required for one foreign language as part of the preparation for the major. Refer to "Graduation Requirements" on page 67.


Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics to include Mathematics 150, 151, 152 and either Mathematics 340A-340B, or 530 and three additional units of upper division mathematics. 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 on page 63 of this catalog.

Preparation for the major.
Astronomy 101, 109, Physics 195, 195L, 196, 196L, 197, 197L (16 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required for one foreign language as part of the preparation for the major. Refer to "Graduation Requirements" on page 67.


Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics, to include Mathematics 150, 151, 152, and either Mathematics 340A-340B, or 530 and three additional units of upper division mathematics. Recommended: Mathematics 107, 541A, 541B, 550.

Astronomy Minor
The minor in astronomy consists of a minimum of 15 units in astronomy, nine units of which must be in upper division courses.
Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

101. (1) Descriptive Astronomy (3, I, II)
Methods of astronomy and of the physical nature of members of the solar system, our galaxy and other galaxies. Telescopes will be used for occasional observations.
### Astronomy

**103. (3) Practice in Observing** (1) I, II

Three hours of laboratory.
Prerequisite: Consent of instructor.
A course designed to supplement Astronomy 101. The course will include observations of celestial objects with a telescope. (Also Acceptable for Advanced Degrees in the Major Area)

**105. (51) Advanced Astronomy** (3-3)

Prerequisite: Astronomy 103 and a passing score on the entrance examination.
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.

**107. (57) Intercollegiate Astronomy** (3-3)

Prerequisite: Consent of instructor.
A study of the more important problems and astronomical concepts in the light of their historical development. Particular attention is given to the biography and contributions of the more important astronomers, such as Galileo, Kepler, Newton, Herschel, Bessel, and others. (Also Acceptable for Advanced Degrees in the Major Area)

**110. (95) Graduate Study** (1-3) I, II

Individual study. Maximum credit ten units.
Prerequisite: Consent of instructor.
Selected topics in theoretical astronomy or astrophysics. May be repeated with new content upon approval of instructor. Maximum credit ten units.

### Athletics

**300. (166) Honors Course** (1-3) I, II

Refer to Honors Program.

**304A-304B. (104A-104B) Advanced Astronomy** (3-3)

Prerequisites: Astronomy 103 and a passing score on the entrance examination. (Also Acceptable for Advanced Degrees in the Major Area)

### Athletics

**305. (105) Historic Development of Astronomy** (3-3)

A study of the more important problems and astronomical concepts in the light of their historical development. Particular attention is given to the biography and contributions of the more important astronomers, such as Galileo, Kepler, Newton, Herschel, Bessel, and others. (Also Acceptable for Advanced Degrees in the Major Area)

**312A-312B. (112A-112B) Astrophysics** (3-3)

Prerequisites: Astronomy 103 and a passing score on the entrance examination. (Also Acceptable for Advanced Degrees in the Major Area)

**380. (180) Intercollegiate Sport Practicum** (2-3)

Major sports meet more than nine 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.

**381. (181) Competitive Sport Practicum** (2-3)

Major sports meet more than nine 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.
496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor’s degree in courses under this number of which no more than three units may be applicable to general education requirements.

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

Biology
In the College of Sciences

Faculty
Chairman: Baer
Professors: Baer, Brandt, Clark, Collier, Cooper, Cox, Ebert, Faris, Flittner, Ford, Hazelt, Johnson, McBlair, Miller, Neel, Parsons, Ratty, Rinehart, Schapiro, Shepard, Sloan, Taylor
Associate Professors: Aubrey, Daugherty, Dini, Fitch, Hurlbert, Kneims, Paolini, Sanders, Thwaites, Zeder, P.
Assistant Professors: Barnett, Davis, Dukepp, Hayr, R.L., Maurello, Zeder, J.
Lecturers: Hays, R.L., Marshak, Mathewson, Millman, Stutz

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 A.B. degree in applied arts and sciences.
Major in biology with the B.S. degree in applied arts and sciences.
Minor in biology.
Curricula which prepare for the fields of dentistry, conservation, fisheries, marine biology, medicine, veterinary medicine, and wildlife management.
Single subject teaching credential in life sciences in the area of biology.

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 on page 63 of this catalog. 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. Students must choose French, German, or Russian to meet this requirement. Refer to "Graduation Requirements" on page 67.

Biology 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 on page 63 of this catalog. A total of 40 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. In addition students must complete twelve units of a single foreign language (chosen from French, German or Russian) or equivalent knowledge demonstrated by a test of reading knowledge administered by the foreign language department concerned in consultation with the Department of Biology. A minor is not required with this major.

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 on page 63 of this catalog. A total of 36 upper division units must be taken, of which 36 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. All candidates for a major in biology must complete the following:
Biology 100, 100L and 215, Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Mathematics 121, 122 or 140 and 150, Physics 115A-115B or 124A-124B and 125A-125B or 195, 195L, 196, 196L, 197, 197L, (33 to 39 units)
Major. A minimum of 24 upper division units for the A.B. degree or 36 upper division units for the B.S. degree in Biology 520, 540, 560, 497E or 497P; and one advanced course in the biological sciences for which Biology 520 or 540 or 560 is a prerequisite. Additional units should be selected from the following elective courses: All 400 and 500 series biology courses, Biology 300: all Chemistry 307, 360A-360B, all upper division microbiology courses except Microbiology 370; Oceanography 320 is not acceptable toward the degree; all upper division zoology courses except Department Chairmen.

Biology Minor

The minor in biology consists of a minimum of 16 units in biological sciences to include Biology 100 and 100L. and nine upper division units in biological sciences selected with approval of the biology adviser. Courses in the minor may not be counted toward the major.

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 School of Education. The program described below is subject to the approval of the Commission on Teacher Preparation and Licensing. For the present time, the program is required for departmental recommendation to the student teaching program of the School of Education. Candidates for the Single Subject Teaching Credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee. This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Preparation for the Major. Biology 100, 100L and 215; Chemistry 200, 200L, 201, 201L, and and 125A-125B, or 166, 185L, 196, 197L, Zoology 150 and 160 are strongly recommended. (35-41 units.)

Major. A minimum of 36 upper division units to include Biology 410, 497E or 497P, 520, 540 or 560 and one advanced course in the biological sciences for which Biology 520, 540 or 560 is a prerequisite; Botany 500, Microbiology 310, Zoology 500 or 510 or 521 or 535 or 570. Seven units of electives must be selected with permission of the Teaching Credential Adviser for the life sciences.

LOWER DIVISION COURSES

100. (1.) General Biology (3) I, II
Prerequisites: None; concurrent registration in Biology 100L recommended. A beginning course in biology stressing processes common to living organisms.

100L. (2.) General Biology Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Biology 100. A laboratory course in biology stressing processes common to living organisms.

130. Ecosystems and Man (3) I, II
Prerequisite: A high school or college general biology course. Man's ecosystem interrelationships past, present and future. Examination of how human activities disturb stable ecosystem relationships and how they may be modified to reestablish steady-state functions of ecosystems.

145. (25.) Introduction to Heredity (3) I, II
Prerequisites: Biology 100. An introduction to plants and animals in relation to their environments and to one another, with emphasis on local forms and their habitats.

200. (4.) Natural History of Plants and Animals (3) I, II
Two lectures and three hours of laboratory. Prerequisite: Biology 100.

LOWER DIVISION COURSES

100. (1.) General Biology (3) I, II
Prerequisites: None; concurrent registration in Biology 100L recommended. A beginning course in biology stressing processes common to living organisms.

100L. (2.) General Biology Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Biology 100. A laboratory course in biology stressing processes common to living organisms.

130. Ecosystems and Man (3) I, II
Prerequisite: A high school or college general biology course. Man's ecosystem interrelationships past, present and future. Examination of how human activities disturb stable ecosystem relationships and how they may be modified to reestablish steady-state functions of ecosystems.

145. (25.) Introduction to Heredity (3) I, II
Prerequisites: Biology 100. An introduction to plants and animals in relation to their environments and to one another, with emphasis on local forms and their habitats.

200. (4.) Natural History of Plants and Animals (3) I, II
Two lectures and three hours of laboratory. Prerequisite: Biology 100.

215. (15.) Introduction to Quantitative Biology (3) I, II
Two lectures and three hours of laboratory. Prerequisites: Biology 100, 100L, and Mathematics 121. Methods and experience in defining and solving quantitative problems in biology, including the design of experiments, and parametric and nonparametric statistical techniques.

261. (9.) Human Physiology (5) I, II
Three lectures and six hours of laboratory. Prerequisites: Chemistry 100, 100L, 130, 130L, Zoology 106 or 160. Functions of the human body, emphasis on the circulatory, muscular, and nervous systems. Not open to students with credit for Biology 362.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Interdisciplinary for Undergraduates)

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

303-S. (170-S) Contemporary Problems in Biology (1) 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.

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 interrelationships of organisms and their environment. Not acceptable for biological sciences major.

350. (159) 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 540 or 544 or to biology majors.

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

362. (140) Principles of Human Physiology (3) I, II
Prerequisite: Biology 100 or Zoology 106. Principles of human physiology, Body maintenance and nerve and muscle physiology. Not open to students with credit in Biology 261 or 572. Not acceptable for credit in Biological Sciences premedical program.

410. 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 bioscience and elementary curriculum committee.

420. (115) Conservation of Wildlife (3) I, II
Prerequisite: Biology 100. Plant and animal resources with emphasis on their conservation and intelligent use.

452L. (141) 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.

496. Experimental Topics (1-4)
Refer to catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.
### Biology

#### 550. (173.) Advanced Genetics (3) I, II
- Prerequisite: Biology 540.
- Current topics in molecular, organismal or population genetics. Maximum credit six units.

#### 560. (101.) Cellular Physiology (4) I, II
- Prerequisite: Biology 560.
- Two lectures and six hours of laboratory.
- Prerequisites: Biology 215, Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Physics 115A-115B, or 124A-124B and 125A-125B, or 195, 195L, 196, 196L, 197, 197L.
- Physiological processes at the cellular level.

#### 561. (181.) Advanced Cellular Physiology (3) I, II
- Prerequisite: Biology 560.
- Current topics in cellular physiology.

#### 562. (142A.) Comparative Animal Physiology I (3)
- Prerequisite: Biology 560.
- Feeding and digestion, blood and circulation, nutrition, respiration and metabolism, excretion and osmoregulation. Considerations of function from molecular to organismal levels. Major phyla are considered. (Formerly numbered Biology 562A.)

#### 563. (142B.) Comparative Animal Physiology II (3) I, III
- Prerequisite: Biology 560.
- Membrane excitability and transport processes; nerve conduction, muscle contraction, sensory reception and integration. Considerations of function from molecular to organismal levels. (Formerly numbered Biology 562B.)

#### 563L. (142LA.) Comparative Animal Physiology Laboratory I (2)
- Six hours of laboratory.
- Prerequisites: Biology 560: 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.)

#### 563L. (142LB.) Comparative Animal Physiology Laboratory II (2) I, II
- Prerequisites: Biology 560: credit or concurrent registration in Biology 563.
- Directed laboratory projects stressing topics presented in Biology 563. (Formerly numbered Biology 562B.)

#### 564. (144.) Comparative Endocrinology (3) I, II
- Prerequisite: Biology 560, Botany 530, Microbiology 520, or Zoology 540. Recommended: Biology 563, Chemistry 261A-261B or 560A-560B.
- Endocrine mechanisms at cellular, organismic, and population levels in plants and animals.

#### 564L. (144L.) Comparative Endocrinology Laboratory (2) I, II
- Six hours of laboratory.
- Prerequisite: Credit or concurrent registration in Biology 564.
- Standard and recent experiments with endocrine systems in vertebrate and invertebrate animals; analysis of mechanisms of hormone action; the role of hormones in behavioral responses; the effects of auxins on plant growth.

#### 566. (148.) Photophysiology (3) II
- Prerequisite: Biology 560.
- Bioluminescence and the physiological effects of visible and ultraviolet radiations on plants and animals.

#### 566L. (148L.) Photophysiology Laboratory (1) I, II
- Three hours of laboratory.
- Prerequisite: Credit or concurrent registration in Biology 566.
- The generation, measurement and control of visible and ultraviolet radiations, and the measurement and analysis of selected biological effects of these radiations.

#### 568. (182.) Immunology (3) I, II
- Prerequisite: Biology 560 or Microbiology 330.
- Structure and function of the immunoglobulins and the chemical and physical nature of the antigen-antibody reaction.
Botany

In the College of Sciences

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

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.
Minor in botany.
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 on page 63 of this catalog.
A minor is not required with this major.
Preparation for the major: Biology 100, 100L, and 215; Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Mathematics 121 or 140; and Physics 115A-115B, or 124A-124B and 125A-125B, (32 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 "Graduation Requirements" on page 67.
Major: A minimum of 24 upper division units to include Biology 540 and either Biology 520 or Botany 514, Botany 500 and 501 or 502 or 503, and 530 and 540; and electives in the natural sciences. Recommended: Botany 540 and Microbiology 310.

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 on page 63 of this catalog.
A minor is not required with this major.
Preparation for the major: Biology 100, 100L, and 215; Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Mathematics 121 or 140; and Physics 115A-115B, or 124A-124B and 125A-125B, (32 units.)
Preparation for the major: Biology 100, 100L, and 215; Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Mathematics 121 or 140; and Physics 115A-115B, or 124A-124B and 125A-125B. Zoology 500 and 501 are strongly recommended, (32 units.)
Major: A minimum of 36 upper division units in the biological sciences to include Biology 490A, 490B, 500, and 501 or 502 or 503; Botany 514 and 530; Biology 410, 520 and 540; Microbiology 310; and Zoology 503, or 510, or 521 or 570 or 535.

Botany Minor
The minor in botany consists of a minimum of 15 units in botany, six units of which must be in upper division courses.
Courses in the minor may not be counted toward the major.

Botany 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 School of Education.
The program described below is subject to the approval of the Commission on Teacher Preparation and Licensing. For the present time, this program is required for departmental recommendation to the student teaching program of the School of Education. Candidates for the Single Subject Teaching Credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.
This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.
Preparation for the major: Biology 100, 100L and 215; Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Mathematics 121 or 140; Physics 115A-115B, or 124A-124B and 125A-125B. Zoology 150 and 150 are strongly recommended, (32 units.)
Major: A minimum of 36 upper division units in the biological sciences to include Biology 490A, 490B, 500, and 501 or 502 or 503; Botany 514 and 530; Biology 410, 520 and 540; Microbiology 310; and Zoology 503, or 510, or 521 or 570 or 535.

LOWER DIVISION COURSES
100. (1.) Plants and Man (3) I, II, S
Basic structure and function of plants with emphasis on the interrelationships of plants and man.
299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Extended Primarily for Undergraduates)
300. (156.) Honors Course (1-3) I, II
Refer to Honors Program.
312. (112.) 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. (119.) Field Botany (4)
Two lectures and six hours of laboratory.
Prerequisites: Botany 501 or 502 or 503, and senior standing.
490A. (190A.) 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.
490B. (190B.) Senior Investigation and Report (2) I, II
One discussion period and five additional hours to be arranged.
Prerequisite: Botany 490A.
496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.
499. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Fifteen units in botany with grades of A or B or consent of instructor.
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

500. (100.) General Botany (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Biology 100 and 100L.
Primarily for majors in the biological sciences. Structure, physiology, reproduction and evolution of the major plant groups.

501. (101.) Phycology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
Morphology and phylogenetic relationships of the algae.

502. (102.) Mycology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
The structure, food relations, and classification of fungi.

503. (103.) Vascular Plants (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
Structure, development and phylogenetic relationships of the bryophytes and vascular plants.

511. (111.) Advanced Phycology (3)
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. (114.) Plant Taxonomy (4) II
Two lectures and six hours of laboratory, field trips.
Prerequisite: Biology 540.
The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.

526. (126.) Plant Pathology (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L. 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. (130.) Plant Physiology (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 100, 100L, Chemistry 200, 200L, 201, 201L, 230, 230L, or 231, 231L.
The activities of plants, including food manufacture, absorption, conduction, transportation, respiration, growth and movement.

532. (132.) Plant Metabolism (3)
Prerequisite: Botany 530 or Biology 560.
An examination of metabolic pathways in plants and their regulation and control.

533. (133.) Experimental Plant Metabolism (2)
Six hours of laboratory.
Prerequisites: Credit or concurrent registration in Botany 532 and consent of instructor.
Experimental approaches to the study of plant metabolism and development.

540. (140.) Plant Anatomy (4) II
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L. Recommended: Botany 500.
The arrangement of structural elements within plant organs, with emphasis on cell and tissue types.

562. (162.) Agricultural Botany (2)
Field trips to be arranged.
Prerequisites: Biology 100 and 100L. Recommended: Botany 500 or Zoology 521.
California crop plants, their general identification, cultural methods, and regional distribution.

GRADUATE COURSES
Refer to the Graduate Catalog.
School of Business Administration
A member of the American Assembly of Collegiate Schools of Business

Faculty

Dean: Hungate

Accounting Department
Emeritus: Brown, Dodds, Wright
Chairman: Bailey
Professors: Bailey, Brooks, Ferrel, Haned, Lightner, Meier, Lidmark, Snudden, Williamson
Associate Professor: Megs
Assistant Professors: Milano, Samuelson, Toole, Whittenburg
Lecturers: Allen, Kemper, Zelechowski

Finance Department
Emeritus: Chapman, Schmier
Chairman: Vandenberg
Professors: Hippaka, Hungate, Hutchins, Neuberger, Nye, Reints, Reznikoff, Vandenberg,
Winholds
Associate Professors: Block, Fisher, H. Short, Smith
Assistant Professors: Cowan, Crabb, Fisher, R., Wilbur

Information Systems Department
Emeritus: Gibson, LeBarron
Chairman: Spaulding
Professors: Archer, Crawford (Associate Dean), Langenbach, Straub
Associate Professor: Spaulding
Assistant Professors: Christy, Feeney, Hatch, Stimson, Tiaro
Lecturers: Crowner, Padelford, Richardson, Vik, Wight

Management Department
Emeritus: Torbert
Chairman: Sherrard
Professors: Atkinson, Belasco, Belcher, Galbraith, Ghorpade, Hampton, Mitton, Peters, Pierson,
Sherrard, Srbich
Assistant Professors: Beatty, Boschken, Hesse, Mitry, N.
Lecturers: Barton, Hooi, Mitry, D.

Marketing Department
Chairman: Darley
Professors: Barber, Darley, Haas, Hale, Lindgren, McFall, Sharkey, Wotruba
Associate Professor: Varier
Assistant Professors: Gazda, Settle, Vidali

Offered by the School of Business Administration
Master of Science degree in business administration.
Master 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. At least 24 units earned in residence, half of which must be completed among the last 20 units counted toward the degree.
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. Some majors require additional courses in a prescribed pattern in areas other than the major.

Business administration majors are not required to complete a minor for the degree.

For information on general education and other degree requirements, refer to the section of this catalog on Graduation Requirements.

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

Preparation for the major: Business Administration 140, 180, 210A-210B or 212, 290; Economics 120 and 121; Economics 142 or Mathematics 119 and Mathematics 120 or 150. (25-26 units.) Students who expect to use any course in Business Administration or Economics to meet general education requirements must complete compensating units in courses outside these areas.

Major, A minimum of 40 upper division units to include Business Administration 301 or 302, 310, 311, 312, 323, 350, 370, 410; Economics 320 or 321; and nine units selected from the following (must include one of more of listed accounting courses): Business Administration 314, 340, 411, 412, 414, 415, 417, and all upper division courses except those listed above in the Departments of Finance, Information Systems, Marketing, and Management.

In addition to units in general education and to upper division units in the major, nine upper division elective units outside of Business Administration and Economics are required. All courses in a foreign language are acceptable, but at least eight units must be taken in one language.
Finance Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 141, 210A-210B or 212, 290; Economics 120 and 121; Mathematics 120 or 150; and Economics 142 or Mathematics 119. (25-27 units.) Students who expect to use any course in business administration or economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. Forty upper division units to include Business Administration 301 or 302, 310, 323, 325, 327, 350, 370, 423, Economics 320, 321 and 490; at least three units selected from Business Administration 329 and 425; and three units of electives selected from business administration and economics courses with consent of the adviser. Fifty-two units (12 of which must be upper division) 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, 141, 210A-210B or 212, 290; Economics 120 and 121; Economics 142 or Mathematics 119; Mathematics 120 or 150 (28-30 units.) Students who expect to use Economics 120 to meet general education requirements must complete compensating units in courses outside business administration and economics.

Major. A minimum of 34 upper division units to include Business Administration 301, 315, 323, 350, 360, 370, 380, 385, 480, 481 and 492; six units of electives selected from Business Administration 306, 327, 341, 352, 381, 390, 456 and 473.

General electives. In addition to the requirements for the major, the student must select 20 units to complete the required total; at least nine of the 20 units must be in upper division courses outside of business administration and economics.

Insurance Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 141, 210A-210B or 212, 290; Economics 120 and 121; Economics 142 or Mathematics 119 and Mathematics 120 or 150 (28-30 units.) Students who expect to use any course in business administration or economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. Thirty-nine upper division units to include Business Administration 301 or 302 and 323, 325 or 327, 341 or 456, 344, 352, 360, 370, 385, 425, 445, 473 or 479, and Economics 490. Fifty-two units (12 of which must be upper division) 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 concentrate in two areas of study in the major or to obtain a broad background in management with a concentration in Administration, Production and Operations Management, Organizational Behavior, Business Information Systems, or Statistics and Management Science.

(1) Professional Curriculum Within the Major Field

Preparation for the major. Business Administration 140, 141, 210A-210B or 212, 290; Economics 120 and 121; Mathematics 119 and Mathematics 120 or 150 (28-30 units.)

Major. Business Administration 301 or 302, 315, 323, 350, 351, 352, 356, 360, 370, 458 or 459. Economists 120 and 121; Mathematics 119; Mathematics 120 or 150 (28-30 units.)

(2) Areas of Concentration Within the Major Field

Select 12 units from Business Administration 386, 450, 451, 452, 453, 454, 455, 456, 461, 462, 463, 464. Six units must be within one of the areas below.

(a) Human Resources Administration: Business Administration 452 and 453.
(b) Production and Operations Management: Business Administration 461 and 462.
(c) Organizational Behavior: Business Administration 451 and 454.

(d) Statistics and Management Science: Business Administration 366, 463, 464.

(b) Business Environment and Policy: Business Administration 450, 455, 456.

(3) Pattern Requirements Outside the Department of Economics and the School of Business Administration

A minimum of 12 units must be taken in upper division courses outside of the Department of Economics and the School of Business Administration. Acceptable courses at the lower division level are Mathematics 115 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, 141, 210A-210B or 212, 290; Economics 120 and 121; Mathematics 120 or 150, and either Economics 142 or Mathematics 119; Mathematics 120 or 150 (28-30 units.) Students who expect to use any course in Business Administration or Economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. A minimum of 37 upper division units to include Business Administration 301, 323, 350, 370, 371, 470, 471, and 479; nine units selected from Business Administration 372, 373, 374, 375, 376, 472, 473, 474, 475, and 476; and six units of electives selected from remaining upper division business administration courses not listed above. In addition to the upper division units in the major and in general education, 12 upper division elective units outside business administration and economics are required.

Real Estate Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 141, 180, 210A-210B or 212, 223, 290; Economics 120 and 121; Economics 142 or Mathematics 119, and Mathematics 120 or 150 (31-33 units.)

Major. A minimum of 36 upper division units to include Business Administration 301 or 302, 323, 335, 350, 370, 430, 437, Public Administration and Urban Studies 320, and 12 to 13 units selected from Business Administration 315, 333, 342, 373, 410, 431, 433, 441, Economics 422, 490, 559; Geography 354, 559. Fifty-two units must be taken outside of business administration and economics.

(e) Real Estate: Business Administration 372, 373, 374, 375, 376, 472, 473, 474, 475, and 476; and six units of electives selected from remaining upper division business administration courses not listed above. In addition to the upper division units in the major and in general education, 12 upper division elective units outside business administration and economics are required.


Minors

Courses in the minor may not be counted toward the major.

Accounting: Twenty units required, including Business Administration 212, 310, 311, 312 and 410.

Business Management: Nineteen units required, including Economics 120 and 121, Business Administration 210A-210B or 212, 350, and six units from Business Administration 351 or 352, 360, 456.

Employee Relations: Nineteen units required, including Economics 120 and 121, Business Administration 210A-210B or 212, 350, 352, and three units from Business Administration 351, 452, or 453.

Finance: Sixteen units required, including Business Administration 210A-210B or 212, 323, 327, and 329, Mathematics 119.

Information Systems: Twenty-two units required, including Business Administration 180, 210A-210B or 212, 280, 300, 480, 481, and Mathematics 120 or 150.

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 adviser.

Marketing: Twenty-one units required, including Business Administration 370, 371, and 9 units selected from Business Administration 301, 372, 373, 374, 375, 376, 470, 471, 472, 474, 475, 476, and 478; Economics 120 and 121.

Production and Operations Management: Nineteen units required, including Business Administration 210A-210B or 212, 350, 360, and Economics 120 and 121, and three units from Business Administration 461 or 462.
Business Major

For the Single Subject Teaching Credential

All candidates for the single subject teaching credential in business must complete all requirements for the applicable specialization as outlined in the section of the catalog under the School of Education. Students must complete the requirements of a major in one of the five departments within the School of Business Administration. In consultation with the Coordinator of Teacher Education in the School of Business Administration, undergraduate students shall develop programs which fulfill the State credential requirements.

LOWER DIVISION COURSES

140. (30A) 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. (30B) 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, and labor law. Students preparing for public accounting should take Business Administration 340 instead of 141.

150. (40) The Business Enterprise (3) I, II
Not open to students who are majors or minors in any department of the School of Business Administration.
The business enterprise and its function in society; interrelations of ownership, entrepreneurship, and administration; interactions within the firm and within and among industries.

180. (93) Information Processing and Computing (3) I, II
Introduction to concepts of information processing and computer programming.

190. (71) Beginning Typewriting (2)
Four hours.
Fundamentals of typewriting. Development of personal-use skills. Not open to students with credit for high school typewriting.

191. (72) Advanced Typewriting (2)
Four hours.
Application of typewriting skills in solution of typical business problems.

192. (73) Computational Machines Laboratory (1) I, II
Two hours of laboratory.
Laboratory course in figuring and calculating machine principles and operation.

193. (74) Communicative Machines Laboratory (2) I, II
Four hours of laboratory.
Prerequisite: Business Administration 190.
Laboratory course in conversational and duplicating machine principles and operation.

194A-194B. (75A-75B) Shorthand (3-3)
Five hours of lecture and activity.
Prerequisite: Business Administration 191; 194A is prerequisite to 194B.
Gregg shorthand theory, dictation and transcription.

210A-210B. (1A-1B) or 212. (1A-1B) Accounting Fundamentals I, II
Prerequisite: Business Administration 210A is prerequisite to 210B.
Organizing, recording, and communicating economic information relating to the business entity.

231. (170) Real Estate Principles and Practices (3) I, II
Prerequisite: Business Administration 210A.
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. (84) Systems Programming (3) I, II
Prerequisite: Business Administration 180.
The theory and techniques of data manipulation, utilizing a problem-oriented language.

290. (80) Written Communications in Business (3) I, II
Prerequisite: English 100 or 101.
Principles of effective writing applied to business and industrial situations and to the organization and presentation of reports.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(41A-51B) or 51A-51B. (3-3) or 51A-51B. (3-3)
Prerequisites: Mathematics 120; Economics 142 or Mathematics 119.
Quantitative methods applied to business decision making.

302. (191) Quantitative Methods (3)
Prerequisites: Mathematics 120; Economics 142 or Mathematics 119.
A study of various management science techniques such as simulation, transportation and simple linear programming and queuing theory.

306. (194A) Scope and Function of Business Education (3) I
Philosophy, scope, and functions of business education; analysis and development of curricula; instructional foundations of basic business subjects.

310. (100) Intermediate Accounting (4) I, II
Prerequisite: Minimum grade of C in Business Administration 510A or 210B.
Theories and principles underlying financial statements and determination of income of profit-seeking enterprises. Emphasizes asset and liability accounting.

311. (115) Financial Accounting Theory (4) I, II
Prerequisite: Business Administration 323 and credit or concurrent registration in 301 or 302.
Equity accounting issues; theory construction; various income concepts; contemporary financial accounting issues; statement analyses.

312. (102) 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. (101) Specialized Accounting Problems (4) I, II
Prerequisite: Credit or concurrent registration in Business Administration 311.
Problems involved in partnerships, consolvations, consolidations, receiverships, foreign exchange, fund accounting, and other specialized areas.

315. (103) Accounting for Managers (4) I, II
Prerequisite: Credit or concurrent registration in Business Administration 350.
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
Prerequisites: Completion of lower division course requirements in major or minor.
Role of economic analysis in management decisions. Study of demand, cost, supply theories from a business viewpoint. Emphasis on managerial decision making.

323. (126) Fundamentals of Finance (3) I, II
Prerequisite: Completion of lower division course requirements in major or minor.
Objectives of financial management. Financing the business enterprise. Internal financial management. Introduction to the cost of capital, valuation, dividend policy, leverage and the techniques of present value and its applications. Sources of capital.

325. (127) Planning of Capital Expenditures (3) I, II
Prerequisites: Business Administration 323 and credit or concurrent registration in 301 or 302.

327. (128) Investments (3) I, II
Prerequisite: Business Administration 323.
Investment principles and practices with emphasis on problems of the small investor such as tests of a good investment, sources of information, types of stocks and bonds, mechanics of purchase and sale, investment trusts, real estate mortgages, and the like.
329. (129.) International Business Finance (3) I, II
Prerequisite: Business Administration 323.
The financing of international business transactions; international payments and their environment; international financial institutions.

331. Real Estate Development (3) I, II
Prerequisites: Economics 120 and 121, or 303 and 304.
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. (171.) Law of Real Property (3) I, II
Prerequisites: Business Administration 141 and 231 or 331.
Legal theory and practice of estates in land; landlord and tenant relationships; land transactions; mortgages and trust deeds; easements; land use; ownership rights in land; environmental law.

335. (172.) Real Estate Institutions and Urban Development (3) I, II
Prerequisite: Business Administration 251 or 331.
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 rehabilitation.

340. (116.) Advanced Business Law (3) I, II
Prerequisite: Business Administration 140 and a major in accounting with at least nine upper division units in accounting.
Legal concepts and cases involving business organization, negotiable instruments, property, security devices, creditors' rights, bankruptcy, insurance, wills, trusts, estates, and suretyship. Special emphasis on problem-solving techniques. Not open to students with credit in Business Administration 141.

341. (131.) Law in a Business Society (3) I, II
Prerequisite: Business Administration 140.
The nature of law as a process of resolving economic disputes and social conflicts. Analysis of the rationale in statutes, judicial decisions, and doctrine. The role of law in the development of business concepts.

342. (120.) General Insurance (3) I, II
History of insurance; economic and social implications; principles of insurance contracts; theory of risk; law of large numbers. Survey of all major insurance fields and policies including life, fire, marine, inland marine, casualty and surety bonding.

344. (122.) Social Insurance (3) II
Prerequisite: Economics 121.
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.

346. (123.) Employee Benefit Plans (3) II

348. (124.) Life Insurance Principles and Practices (3) II
Prerequisite: Business Administration 342.
Economic and social aspects of life insurance; nature of life insurance and annuity contracts; basic legal principles; theory of probabilities, premiums, reserves, and nonforfeiture values; company operational activities; agency development and management.

350. (132.) Management and Organization (3) I, II
Prerequisite: Completion of lower division courses required in the major or minor.
Concepts of organizational activities to achieve goals. Effects of environment, technology and human behavior on organization design. Managerial processes including planning, decision making, influence and control required to operate and change organizations.

351. (145.) Organizational Behavior (3) I, II
Prerequisite: Business Administration 350 or Public Administration 330.
Human behavior in organizations at the individual, interpersonal and group level including the effect of organization structure on behavior. Emphasis on managerial behavior as it relates to human motivation, influence, leadership, communication, group dynamics and conflict resolution.

352. (140.) Human Resources Management (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 effect of economic, sociological and psychological factors on concepts and practices.

356. The Corporation in Modern Society (3)
Prerequisite: Upper division standing.
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. (135.) Fundamentals of Production and Operations Management (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Business Administration 230.
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.

364. Statistical Methodology for Business Research (3)
Prerequisite: Business Administration 301.
Design and application of quantitative methods related to business research, with an applied emphasis on factorial analysis of variance, covariance, experimental design, multiple regression, research reporting, and analysis of methodology appearing in business literature.

370. (150.) Marketing Principles (3) I, II
Prerequisite: Completion of all lower division course requirements for the major or minor.
Marketing functions, activities of producers, wholesalers, retailers and other middlemen; channels of distribution, integrations of marketing activities; price policies; government regulations.

371. (156.) Consumer Behavior (3) I, II
Prerequisite: Business Administration 301.
Examination of the nature of markets and of the factors influencing market development and change. Study of the individual consumer's behavior in relation to the selling-buying process.

372. (152.) 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 under changing conditions.

373. (153.) Advertising Principles (3) I, II
Prerequisite: Business Administration 370.
Advertising as a sales promotional tool in marketing activities; consumer, market and product analysis; advertising media; preparation of advertisements; measurement of advertising effectiveness; economic and legal aspects of advertising; public relations, advertising campaigns.

374. (161.) Physical Distribution Management (3)
Prerequisite: Business Administration 370.
Physical distribution organization and functions. Economic and operational characteristics of logistics of transportation, documentation, terminal operations, materials handling, claims management, and government regulations.

375. (164.) Purchasing and Buying (3) I, II
Prerequisites: Business Administration 350 and 370.
Policies for purchasing raw materials, parts, supplies and finished goods for manufacturing operations, for commercial uses, and for wholesales and resale. Buying procedures, inventory control, vendor relations, legal problems, quality control, financing.

376. (166.) International Marketing (3) 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. (165.) Automated Management Information Systems (3) I, II
Prerequisites: Business Administration 280; Economics 142 or Mathematics 119.
Concepts and techniques for the design, development, and implementation of EDP-based management information systems to improve decision making.
Prerequisite: 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, and management. Not open to students with credit in Business Administration 380.

Prerequisites: Business Administration 180; Economics 142 or Mathematics 119.

Administrative theories as they apply to typical information systems; interaction of personnel, equipment, and services; emphasis on quantitative and qualitative aspects of information systems.

Prerequisites: Business Administration 193 and 194.

Executive secretarial responsibilities and functions, including a review for the Certified Professional Secretary Examination.

Prerequisite: Consent of Dean of School of Business Administration.

Situation to be assigned to business firms to work under the joint supervision of the business firm's supervisor and the course instructor.

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 decision making and establishment of top management policy through a combination of case study and a business simulation game.

Philosophy and psychology of teaching business skills; presentation and evaluation of objectives, techniques, and materials for skill development.

Prerequisite: Minimum grade of C in Business Administration 310 or 315.

Theory and procedures in the preparation of federal and California income tax returns for individuals, partnerships and corporations.

Prerequisite: Business Administration 410.

Theories of taxation as related to personal holding companies, corporate distributions, liquidation and capital changes; fiduciary return preparation; brief survey of gift, estate and social security taxes.

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.

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; audit reports.

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, appropriations, encumbrances, internal checks and auditing procedures.
### Business Administration

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>451.</td>
<td>Organization Theory and Analysis (3)</td>
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<td>Prerequisites: Business Administration 351.</td>
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<tr>
<td>452.</td>
<td>Wage and Salary Administration (3) I, II</td>
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<td>Prerequisite: Business Administration 352.</td>
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<tr>
<td>454.</td>
<td>Interpersonal Processes (3)</td>
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<td>Prerequisite: Business Administration 351.</td>
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<td>455.</td>
<td>American Business History (3)</td>
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<td>Prerequisite: Senior standing.</td>
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<td>456.</td>
<td>Conceptual Foundations of Business (3) I, II</td>
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<td>Prerequisite: Senior standing.</td>
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<tr>
<td>458.</td>
<td>Management Decision Games (1-3) I, II</td>
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<td>Prerequisite: Consent of instructor.</td>
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<td>459.</td>
<td>Business Policy (3) I, II</td>
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<td>Prerequisites: Senior standing and consent of instructor.</td>
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<tr>
<td>461.</td>
<td>Systems and Methods Analysis (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 360.</td>
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<tr>
<td>464.</td>
<td>Management Science (3)</td>
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<td>Prerequisite: Business Administration 302.</td>
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<tr>
<td>470.</td>
<td>Marketing Research (3) I, II</td>
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<td>Prerequisites: Business Administration 301 and 370.</td>
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<tr>
<td>471.</td>
<td>Marketing Research Laboratory (1)</td>
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<td>Three hours of laboratory.</td>
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<tr>
<td>472.</td>
<td>Advertising Management (3)</td>
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<td>Prerequisites: Business Administration 371 and 373.</td>
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<tr>
<td>473.</td>
<td>Sales Management (3) I, II</td>
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<td>Prerequisites: Business Administration 370.</td>
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<tr>
<td>479.</td>
<td>Analysis of Marketing Information (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 371 and 370.</td>
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<td>480.</td>
<td>Information Storage and Retrieval Systems (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 380.</td>
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<tr>
<td>481.</td>
<td>Advanced Programming Techniques (3) I, II</td>
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<td>Prerequisites: Business Administration 380.</td>
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<tr>
<td>482.</td>
<td>Data Processing Practicum (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 301, 480, 481.</td>
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<tr>
<td>496.</td>
<td>Selected Topics in Business Administration (1-4) I, II</td>
<td></td>
<td>Prerequisite: Consent of Dean of School of Business Administration.</td>
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<tr>
<td>498.</td>
<td>Investigation and Report (1-3) I, II</td>
<td></td>
<td>Prerequisites: Senior standing and consent of instructor.</td>
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<tr>
<td>499.</td>
<td>Special Study (1-3) I, II</td>
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<td>Individual study. Maximum credit six units.</td>
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</table>

**GRADUATE COURSES**

Refer to the Graduate Catalog.
Chemistry

In the College of Sciences

The department is on the approved list of the American Chemical Society.

Faculty
Emeritus: Joseph, Robinson, Rowe, Wick
Chairman: Wadsworth
Professors: Abbott, Bennett, Cople, Golding, Grubbs, Harrington, Heiberg, Iasenee, Jensen, Jones, Landis, Malik, Malley, Mathewson, O'Neal, Richardson, Ring, Roeder, Sharts, Spangler, Stewart, Wadsworth, Wabba, Woodson
Associate Professors: Coffey, Dahms, Leberher

Offered by the Department
Doctor of Philosophy degree in chemistry.
Master of Arts degree in chemistry.
Master of Science degree in chemistry.
Major in chemical physics, the B.S. degree in applied arts and sciences.
Major in chemistry, the B.S. degree in applied arts and sciences, with the Certificate of the American Chemical Society.
Related Professions major is not offered with the Certificate of the American Chemical Society.
Minor in chemistry.
American Chemical Society.

Chemistry Majors

Three majors in chemistry are offered in applied arts and sciences. A chemistry major is also offered in liberal arts and sciences.

Chemistry Major

With the B.S. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

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. A minor is not required with this major.

Preparation for the major. Chemistry 200, 200L, 201, 201L, 231, 231L, 237, and 251; Mathematics 150, 151, and 152; and Physics 195, 196, 196L, 197, 197L. (44 units.)

Major. A minimum of 36 upper division units to include Chemistry 410A-410B, 431, 431L, 437, 457A-457B, 520A, 550, 560A, one unit of 498, and 12 units of upper division electives in chemistry or in related subjects with approval of the department.

Cerificate of the American Chemical Society

The curriculum outlined below for the Certificate of the American Chemical Society is for students who are taking a premedical or predental curriculum. A chemistry major is also offered with the Certificate of the American Chemical Society. The program leading to the Related Professions major is not offered with the Certificate.

Chemical Physics Major

With the B.S. Degree in Applied Arts and Sciences

Preparation for the major. Chemistry 200, 200L, 201, 201L, or 204A-204B, 231, 231L and 251; Mathematics 150, 151 and 152; Physics 195, 196, 196L, 197, 197L. (43 units.)


Chemistry Majors

In Applied Arts and Sciences

Three majors in chemistry are offered in applied arts and sciences. A chemistry major is also offered in liberal arts and sciences.

The chemistry majors available in applied arts and sciences are 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 predental 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.

Outline for the B.S. Degree and Certificate

<table>
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<th>Units</th>
<th>First year</th>
<th>Second year</th>
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<td>1st Sem.</td>
<td>2nd Sem.</td>
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<td>Chemistry 200, 200L</td>
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<td>Chemistry 201, 201L</td>
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<td>Mathematics 104, 140, 150</td>
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<td>Third year</td>
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<td>Chemistry 410A-410B</td>
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<td>Chemistry 560A</td>
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<td># American Institutions</td>
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<td>* General Education</td>
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<td>Chemistry Electives</td>
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Chemistry Major

With the A.B. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

A minor is not required with this major.

Preparation for the major. Chemistry 200, 200L, 201, 201L, 231, 231L, 237, and 251; Mathematics 150, 151, and 152; and Physics 195, 196, 196L, 197, 197L. (44 units.)

Major. A minimum of 24 upper division units in chemistry to include Chemistry 410A-410B, 431, 431L, 437, 457A-457B, 520A, 550, one unit of 498, and three units of upper division electives in chemistry or in related subjects with approval of the department.

Certificate of the American Chemical Society

* Refer to catalog section on General Education requirements.

* Students eligible to take Mathematics 150 in their first semester should do so and substitute for Mathematics 104 and/or 140 two to five units of general electives.

* If this requirement is met by examination the appropriate number of units should be added to general education courses.

8-9176
**Chemistry Placement Examination**

All students who plan to enroll in Chemistry 200, 200L, or 204A and who have not completed Chemistry 100, 100L at San Diego State University with a grade of C or better must take the chemistry placement examination. This test may be used to satisfy the prerequisite requirements for Chemistry 200, 200L, and may also serve as a basis for the selection of students for the honors chemistry program. The schedule for this examination will be posted on the chemistry bulletin board. Permission is also made for this examination to be taken by the entering freshman or the transfer student prior to registration. Refer to the calendar.

**Graduation with Distinction**

A student desiring to graduate with Distinction in Chemistry must meet the university requirements as shown on page 63 and in addition have completed four units of Chemistry 498 by the time of graduation and be recommended by the faculty member directing his Chemistry 498 project.

### LOWER DIVISION COURSES

100. (2A.) Introductory General Chemistry (2) I, II

- Prerequisite: Concurrent registration in Chemistry 100L
- Elementary principles of chemistry. Not open to students with credit in Chemistry 200, 200L.

100L. Introductory General Chemistry Laboratory (1) I, II

- Three hours of laboratory.
- Prerequisite: Concurrent registration in Chemistry 100. Chemistry 100 and 100L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

101A-101B. (2A-7B.) Chemical Principles for the Environment (3-3) I, II

- Two lectures and two hours of discussion.
- Prerequisites: Chemistry 101A and 130, 130L, or 230, 230L, or 231, 231L, are prerequisite to 101B.

102. (2.) Glass Blowing (2) I, II

- Three hours of laboratory.
- Prerequisite: Chemistry 201 and 201L.
- Elementary training in the manipulation of glass.

130. (28.) Elementary Organic Chemistry (2) I, II

- Prerequisites: Concurrent registration in Chemistry 130L, Chemistry 100, 100L, or 200, 200L.
- Introduction to the compounds of carbon including both aliphatic and aromatic substances. Not open to students with credit in Chemistry 201, 201L or 202. (Formerly numbered Chemistry 100BL.)

130L. Elementary Organic Chemistry Laboratory (1) I, II

- Three hours of laboratory.
- Prerequisite: Concurrent registration in Chemistry 130. Chemistry 130 and 130L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

160. (3.) Introductory Biochemistry (3) I, II

- Prerequisite: Chemistry 130 and 130L.
- Fundamental principles of the chemistry of living processes. This course intended primarily for majors in home economics, nursing, and related fields.

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### OUTLINE FOR THE A.B. DEGREE AND CERTIFICATE

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<th>Units</th>
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15 | 14 | 13 | 14 |
200. (1A.) General Chemistry (3) I, II
Prerequisites: Concurrent registration in Chemistry 200L, High school chemistry, qualification on Chemistry Placement Examination, and two years of college preparatory mathematics, or a grade of C or better in Chemistry 100. 100L at this university.

General principles of chemistry with emphasis on inorganic materials. Duplicate credit will not be allowed for the corresponding course in Chemistry 204A. Students with credit for both Chemistry 100, 100L, and 200, 200L, will receive a total of 5 units of credit toward graduation. (Formerly numbered Chemistry 200A.)

200L. General Chemistry Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 200. Chemistry 200 and 200L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

201. (1B.) General Chemistry (3) I, II
Prerequisites: Chemistry 200, 200L, or 204A. Concurrent registration in Chemistry 204L.

Continuation of Chemistry 200. General principles of chemistry with emphasis on inorganic materials and qualitative analysis. Duplicate credit will not be allowed for the corresponding course in Chemistry 202 or 204B. (Formerly numbered Chemistry 200B.)

201L. General Chemistry Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 201. Chemistry 201 and 201L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

202. (1E.) General Chemistry for Engineers (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Chemistry 200 and 200L.

A continuation of the study of the principles of chemistry with emphasis on the relationships to the field of engineering. Open only to engineering majors. Not open to students with credit in Chemistry 201 and 201L. (Formerly numbered Chemistry 201.)

204A-204B. (10A-10B.) Chemical Principles and Techniques (Honors) (5-5)
Three lectures and six hours of laboratory.
Prerequisites: High school chemistry, physics, and mathematics, superior qualification on both the Chemistry and the Mathematics Placement Examinations and high ranking on the ACT or SAT tests.

Permission card from the department is required for registration in this course. The application of modern electronic theory to the study of general chemistry with emphasis in the laboratory on analytical methods. Qualitative and quantitative analysis is included. Chemistry 204A-204B takes the place of Chemistry 200, 200L, 201, 201L, and 251 for these students as prerequisites for further courses in chemistry.

207. (55.) Problem Solving in Chemistry (1) I, II
Three hours of laboratory.
Prerequisites: Chemistry 231, 231L, and 251.

Experimental design, gathering of data, and processing of data in chemistry.

230. (11.) Introductory Organic Chemistry (3) I, II
Prerequisite: Concurrent registration in 230L. Chemistry 201 and 201L.

Aliphatic and aromatic compounds including reaction mechanisms. For students needing only one semester of organic chemistry. Not open to students with credit in Chemistry 231 and 231L.

230L. Introductory Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 230. Chemistry 230 and 230L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

231. (12.) Organic Chemistry (3) I, II
Prerequisite: Concurrent registration in 231L. Chemistry 201 and 201L.

Properties and synthesis of organic compounds including reaction mechanisms. First half of a year course. Not open to students with credit in Chemistry 230 and 230L.
410A-410B. (110A-110B) Physical Chemistry (3-3) I, II
Prerequisites: Chemistry 251, 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. (112.) Organic Chemistry (3) I, II
Prerequisites: Concurrent registration in 431L. Chemistry 231 and 231L.
A continuation of Chemistry 231.

431L. Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 431. Chemistry 431 and 431L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

437. (113.) Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Open only to students enrolled concurrently in Chemistry 431 and 431L.

457A-457B. (155A-155B) Advanced Laboratory Techniques (2-2) I, II
Six hours of laboratory.
Prerequisite: For 457A: Credit or concurrent registration in Chemistry 550. Credit or concurrent registration in Chemistry 207 is recommended. 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. (117.) Biochemistry Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Chemistry 361A or 560A. Theory and practice of laboratory procedures used in the study of intermediary metabolism. Includes the purification of enzymes, radioactivity, tracer techniques, and the isolation of cell components.

496. (196.) Selected Topics in Chemistry (1-4)
Prerequisite: Consent of instructor.
Selected topics in modern chemistry. May be repeated with new content. Maximum credit six units.

498. (198.) Senior Project (1-3) I, II Cr/NC
Prerequisites: Three one-year courses in chemistry and senior standing. An individual investigation and report on a problem. Maximum credit six units.

499. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor. Open only to students who have shown ability to do A or B work in Chemistry.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

500A-500B. (160A-160B) 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. (180.) Chemical Oceanography (3) II
Three lectures and occasional field trips.
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
The application of the fundamentals of chemistry to the study of oceans.

502. (191.) Chemical Literature (1)
Prerequisite: Upper division standing in chemistry.
An introduction to the availability, scope and use of the chemical literature.
Chinese
In the College of Arts and Letters

Faculty
Assistant Professor: Woo

Offered by the Department of Classical and Oriental Languages and Literatures
Courses in Chinese.
Major or minor work in Chinese is not offered.

LOWER DIVISION COURSES
Native speakers of Mandarin Chinese will not receive credit for taking lower division courses except with advance approval from the department.
101. (1.) Elementary (4)
Four lectures and one hour of laboratory.
Prerequisite: Chinese 101.

202. (2.) Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Chinese 101.
Continuation of Chinese 101.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under the number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Designed Primarily for Undergraduates)
303. (103.) Readings in Contemporary Chinese (4)
Prerequisite: Chinese 202.
Readings in contemporary authors: poetry, short stories, essays.

304. (104.) Readings in Classical Chinese (4) II
Prerequisite: Chinese 303.
Readings from Homer, Confucius, and other classical sources.

450. (155.) Advanced Reading in Chinese (3-4)
Prerequisite: Chinese 304.
Extended, intensive reading in Chinese with emphasis on style, content, interpretation. May be repeated with new content. Maximum credit: nine units.

496. (185.) Topics in Chinese Studies (1-4)
Topics in Chinese language, literature, and linguistics. May be repeated with new content. Maximum credit: eight units.

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

Classical and Oriental Languages and Literatures
In the College of Arts and Letters

Faculty
Emeritus: Burnett
Chairman: Schaber
Professors: Schaber, Sutherland, Warren
Associate Professors: Eisner, Genovese
Assistant Professors: Getter, Woo
Lecturers: Busoot, Naveh, Ogawa

Offered by the Department
Major in classics with the A.B. degree in liberal arts and sciences. (Refer to this section of the catalog under Classics.)
Teaching major in classics (concentration in Latin) for the single subject teaching credential in foreign languages. (Refer to this section of the catalog under Classics.)
Minor in classical humanities. (Refer to this section of the catalog under Classics.)
Minor in classics. (Refer to this section of the catalog under Classics.)
Courses in Arabic. (Refer to this section of the catalog under Arabic.)
Courses in Chinese. (Refer to this section of the catalog under Chinese.)
Courses in classics. (Refer to this section of the catalog under Classics.)
Courses in Greek. (Refer to this section of the catalog under Greek.)
Courses in Hebrew. (Refer to this section of the catalog under Hebrew.)
Courses in Japanese. (Refer to this section of the catalog under Japanese.)
Courses in Latin. (Refer to this section of the catalog under Latin.)
(For other courses in translation see comparative literature, history, humanities and philosophy.)
Classics

In the College of Arts and Letters

Faculty

Professors: Schaber, Sutherland, Warren
Associate Professors: Eisner, Gencovea

Offered by the Department of Classical and Oriental Languages and Literatures

Major in classics with the A.B. degree in liberal arts and sciences.
Minor in classical humanities.
Minor in classics.
Teaching major in classics (concentration in Latin) for the single subject teaching credential in foreign languages.

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 on page 63 of this catalog.

A minor is not required with this major.

Concentration in Classical Humanities

Preparation for the major. Choice of Greek 101 and 202, Greek 250. Latin 101 and 202, or Latin 250. (6-10 units.) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements per se for the completion of the major.

Foreign Language Requirement. 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 "Graduation Requirements" on page 67.

Major. A minimum of 30 upper division units to include Classics 320, 330, History 500A-500B, and Philosophy 301 (prerequisites are waived for students in this major), six units from classics, Anthropology 578, Art 568, Religious Studies 310, or Speech Communication 350; six units of Greek or Latin; and three units of Classics 499 as a directed senior project.

Concentration in One Language

Preparation for the major. Choice of Greek 101 and 202, Greek 250, Latin 101 and 202, or Latin 250. (8-10 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 "Graduation Requirements" on page 67.

Major. A minimum of 30 upper division units to include 15 units from classics, History 500A, 500B, or Philosophy 301; 12 units of Greek, or 12 units of Latin, and three units of Classics 499 as a directed senior project.

Concentration in Two Languages

Preparation for the major. Greek 101 and 202, or Greek 250; Latin 101 and 202, or Latin 250. (16-20 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 "Graduation Requirements" on page 67.

Major. A minimum of 30 upper division units to include 12 units from classics, History 500A, 500B, or Philosophy 301; nine units of Greek; and nine units of Latin.

Classical Humanities Minor

The minor in classical humanities consists of a minimum of 15 units, nine units of which must be in upper division courses; in addition to courses in classics, up to six units may be selected from Anthropology 578, Art 568, Comparative Literature 270A, History 105A, 500A, 500B, Philosophy 301, upper division required and recommended courses listed have lower division prerequisites, but these prerequisites do not constitute requirements per se for the completion of the minor.

Courses in the minor may not be counted toward the major.

Classics Minor

The minor in classics consists of a minimum of 15 units, six units of which must be selected from upper division classics, Greek, or Latin courses, History 500A, 500B, or Philosophy 301. Nine units must be selected from Latin or from Greek.

Courses in the minor may not be counted toward the major.

Classics Major (Concentration in Latin)

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School 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. Latin 101 and 202. (10 units.)

Major. A minimum of 30 upper division units to include Classics 320 and History 500B, nine additional units selected from classics, History 500A, or Philosophy 301; and 15 units in Latin to include three units of Latin 499 as a course in teaching techniques.

LOWER DIVISION COURSES

(See also courses in Greek and Latin.)

220. (20.) Latin and Greek Word Derivation (3)
A general and elementary course in etymology. A study of Latin and Greek stems of most frequent occurrence in English; and of the English words derived from them.

250. (50.) Scientific Terminology (3)

270. (70.) The Heritage of Greece and Rome (3)
Greek and Roman art, literature, and institutions as reflected in the Western tradition.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Extended Primarily for Undergraduates)

310. (110.) Greek and Roman Mythology (3)
Mythological elements in Greek and Roman art, literature, and religion.

320. (102A.) Classical Literature (3)
Reading in translation of Greek and Latin masterpieces. Emphasis on epic and prose genres. Authors such as Homer, Herodotus, Plato, Vergil, Apuleius. Literary and historical criticism.

330. (102B.) Classical Drama (3)
Reading in translation of Greek and Roman tragedies and comedies. Playwrights such as Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Seneca. Literary, dramatic, historical criticism.

340. (140.) Classical Civilization (3)
Greek and Roman civilization from Bronze Age to Late Empire. Integration of history, philosophy, literature, the arts, and society.

499. (185.) Topics in Classical Studies (1-4)
Topics in classical languages, literatures, cultures, and linguistics. May be repeated with new content. Maximum credit eight units.

499. (199) Special Study (1-3)
Individual study. Maximum credit six units. Prerequisite: Consent of instructor.
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 Comparative Literature
Major in comparative literature with the A.B. degree in liberal arts and sciences.
Minor in comparative literature.

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 on page 63 of this catalog. No more than 40 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 “Graduation Requirements” on page 67.

Major. A minimum of 24 upper division units to include 18 units in comparative literature.

With the approval of the adviser, six units in one of the following interest areas: (1) Foreign Language Literature. Recommended for students who expect to do graduate work in comparative literature. Courses may be taken in literature of any foreign language. (2) English Language Literature. Courses may be taken in American and British literature. (3) Comparative Studies. Courses may be taken in areas with a “studies” orientation such as Afro-American Studies, Mexican-American Studies, Urban Studies, Women’s Studies, Jewish Studies, and the like.

Comparative Literature Minor

The comparative literature minor consists of a minimum of 15 units in comparative literature, nine units of which must be in upper division courses. The comparative literature minor is not available to students majoring in English.

Courses in the minor may not be counted toward the major.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

505. (105.) The Bible as Literature (3) I, II
Same course as English 505.
Prose and poetry of the King James version.

510. (120.) Medieval Literature (3)
Representative selections from authors of the Middle Ages.

511. (122.) Continental Renaissance (3)
Representative selections from authors of the Renaissance period in continental Europe.

512. (124.) Seventeenth and Eighteenth Century Continental Fiction (3)
Selected works by novelists and short story writers of continental Europe prior to 1800.

513. (125.) Nineteenth Century Continental Fiction (3)
Selected works by novelists and short story writers of continental Europe between 1800 and 1900.

514. (126.) Modern Continental Fiction (3)
Selected works by novelists and short story writers of continental Europe since 1900.

525. (185) Yiddish Literature (3) I, II
Selected works from the Jewish communities of Central Europe.

526. (186) 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. (170.) 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. (175) 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. (180) Afro-American Literature (3)
Selected works by black authors in Africa, North and South America, and the Caribbean. Intercultural influences and the theme of black identity.

545. (145) Modern Latin American Literature (3) I, II
Reading selections from major Latin American authors.

550. (160) Seminar (3)
An intensive study of a topic to be selected by the instructor. May be repeated once with new content.

560. (150) The Epic (3)
Selected epic poems from world literature; emphasizes the Western epic tradition from Homer to the present.

561. (151) 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. Maximum credit six units.

562. (152) Drama (3)
Forms and themes in drama. Focus of course to be set by instructor. May be repeated once with new content.

563. (153) Poetry (3)
A comparative approach to themes and forms in poetry. Focus of course to be set by instructor. May be repeated once with new content.
570. (196) Folk Literature (3)
Studies in the ballad, bardic poetry, oral and popular literature and folklore. May be repeated with new content. Maximum credit six units.

571. (191) 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. (192) Major Individual Authors (3)
In-depth study of the works of a major author, such as Sophocles, Dante, Cervantes, Goethe, Dostoyevsky or Proust. Maximum credit six units.

580. (194) 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. Maximum credit six units.

581. (195) 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. Maximum credit six units.

Criminal Justice Administration

In Public Administration and Urban Studies

Faculty
Faculty assigned to teach courses in criminal justice administration are drawn from public administration and urban studies.

Offered by Public Administration and Urban Studies
- Master of Science degree in criminal justice administration.
- Major in criminal justice administration with the B.S. degree in applied arts and sciences.
- Certificate in criminal justice administration.

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 on page 63 of this catalog. A minor is not required with this major.

Preparation for the major.
Nine units of social science and a three-unit course in statistics. (12 units.)

Major.
A minimum of 36 upper division units to include Public Administration 301; Criminal Justice Administration 301, 497 or 498; and additional upper division courses selected with approval of the departmental adviser, including a three-unit course in statistics if not taken in the lower division.

Certificate in Criminal Justice Administration

This certificate is designed primarily for persons who hold administrative or managerial positions in the field of criminal justice or for those who seek to prepare for such responsibilities. A certificate in criminal justice administration may be sought by those who: (a) do not meet the prerequisite requirements established for the B.S. degree with a major in criminal justice administration; (b) are not interested in or able to complete nonprofessional offerings which are part of the regular degree program; (c) have already earned a bachelor's or master's degree and are not interested in a second degree.

Candidacy for the certificate program will be established by the Coordinator of the Criminal Justice Administration Program. Awarding of the certificate requires completion of an approved pattern of eight courses (24 units) with a minimum grade point average of 2.5 (C+). Course offerings under this program may be taken in the on-campus program, extension division, external degree program, or any combination of these.

For further information, consult the Coordinator, Criminal Justice Administration.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

301. (146) Administration of Justice (3) I, II
Prerequisite: Public Administration 301 or Political Science 548 or 547A.
Fundamental problems in judicial administration in law enforcement, organization and management, and issues in judicial reform and in public safety.

310. (110) 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. (112) The Administration of Criminal Law (3)
Prerequisite: Criminal Justice Administration 301 or 310 or Political Science 348 or 547A.
Basic concepts of the criminal law, elements of crime and the administrative processes of law enforcement.

321. (111) Administration of Juvenile Justice (3)
Prerequisite: Sociology 514 or Criminal Justice Administration 301 or 310.
Administration of programs for treatment of juvenile offenders by police, probation and courts.
Criminal Justice Administration

333. Judicial Administration (3)
   Prerequisites: Credit or concurrent registration in 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.

495. Selected Topics in Criminal Justice Administration (3)
   Selected current topics in criminal justice administration. Maximum credit six units.

497. Investigation and Report (3) 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
   Individual study. Maximum credit six units.
   Prerequisites: Twelve units of Criminal Justice Administration and consent of instructor.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

502. Juvenile Deviance and the Administrative Process (3)
   Prerequisite: Sociology 314, or Criminal Justice Administration 301 or 310.
   An examination of those in the administrative system who process juvenile deviance.

503. Contemporary Correctional Administration (3) II
   Prerequisite: Sociology 313 or 514.
   The problems encountered in administering modern correctional institutions; forestry and road camps; detention homes; and jails.

531. Probation and Parole (3) I
   Prerequisite: Criminal Justice Administration 301 or 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.

GRADUATE COURSES
Refer to the Graduate Catalog.

Drama

In the College of Professional Studies

The Department of Drama is a Member of the National Association of Schools of Theatre.

Faculty

Emeritus: Povenmire, Selman
Chairman: Stephenson
Professors: Amble, Howard, Powell, Stephenson
Associate Professors: Anness, Harvey, Leslie, Owen
Assistant Professors: Bellingham, McKee

Offered by the Department

Master of Arts degree in Drama.

Major in Drama with the A.B. degree in applied arts and sciences.
Minor in Drama.

Single subject teaching credential in English in area of Drama.

Drama Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on pages 63 of this catalog.

A minor is not required with this major.

Preparation for the major. Drama 105, 130, 231, 240, and 250. (15 units.)

Note: Drama 110 and 120 should be taken as part of the General Education requirements.

Major. A minimum of 24 upper division units in Drama to include Drama 520, 532, 540A, 557, 558 or 559, 560A-560B, and four units of electives in Drama (except Drama 442 and 499) selected with the approval of the adviser.

In addition to course requirements the student must participate in a total of five Major Theatre performances and three Studio or Experimental Theatre activities.

Emphasis in Design for Drama

Preparation for the major. Drama 105, 130, 231, 240, and 250. (15 units.)

Note: Drama 110 and 120 should be taken as part of the General Education requirements.

Major. A minimum of 24 upper division units in Drama to include Drama 540A, 540B, 545A, 548, 552A, 557, 560A-560B. In addition to course requirements the student must participate in a minimum of five Major Theatre performances and three Studio or Experimental Theatre activities.

Emphasis in Design for Television

Preparation for the major. Drama 105, 240, 250, Telecommunications and Film 110, 120A-120B, and 280. (23 units.)

Major. A minimum of 24 upper division units in Drama to include Drama 540A, 540B, 545A, 548, 552A, 557, 560A-560B. Telecommunications and Film 450, 520, 550, and 460 or 551.

Drama Minor

The minor in Drama consists of a minimum of 21 units in Drama to include Drama 105, 130, 231, 240, 250 and six units of upper division electives in Drama.

Courses in the minor may not be counted toward the major.

Drama

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 School of Education.

The requirements for the single subject teaching credential in English which includes the area of Drama are being revised. For further information consult the department.
LOWER DIVISION COURSES

105. (5.) Introduction to the Theatre (3) I, II  
Three lectures per week and 15 hours of laboratory per semester.  
A survey of theory and practice in the contemporary theatre, including its literary, critical, and  
technical aspects viewed against historical backgrounds.

110. (10.) Voice and Diction for the Theatre (3) I, II  
Prerequisite: Drama 105.  
Exercises and drills to improve the quality, flexibility and effectiveness of the speaking voice  
leading to good usage in standard American speech. Preparatory to further courses in drama.

120. (20.) 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. (30.) Elementary Acting (3) I, II  
Three lectures per week and 30 hours of laboratory per semester.  
Prerequisite: Drama 105.  
Developing the individual's ability to express thought and emotion through the effective use of  
the voice and body. These fundamental skills may be applied to stage, radio, and television acting.

147. (47.) Sound in the Theatre (2) I  
One lecture and three hours of laboratory.  
Techniques, theory, and procedures necessary to develop sound, music, and effects integrated into  
teatre production.

231. (31.) Intermediate Acting (3) I, II  
Three lecture-demonstrations per week and 30 hours of laboratory per semester.  
Prerequisite: Drama 130.  
Continuation of Drama 130, emphasizing the application of fundamental skills to the problems of  
emotion, timing, characterization, and ensemble acting.

232. (32.) Movement and Mime for the Theatre (3) I  
Two lectures and three hours of laboratory.  
Prerequisite: Drama 105.  
Basic disciplines and locomotor and axial body movement for the stage director and actor.  
Introduction to mime. The relationship between body expression and character portrayal.

240. (40.) 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. (50.) 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 running crew required.

255. (55.) Children's Theatre (3) I  
Examination of existing philosophies and practices dealing with children's theatre presentations.  
Theory and technique of selecting and producing plays for children. Introduction to directing for  
children's theatre. Practical experience through participation in university-sponsored productions.

298. (98.) Experimental Topics (1-4)  
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to  
a bachelor's degree in courses under this number of which no more than three units may be  
applicable to general education requirements.

UPPER DIVISION COURSES

(Also Accepted for Advanced Degrees in the Major Area)

301. (101.) Management of Drama Activities (1) I, II  
Planning, preparation, management and supervision of drama tournaments, festivals and other  
inter- and intrascholastic and intrascholastic activities under the supervision of the drama staff. Maximum credit  
two units.

310. (110.) Creative Dramatics (3) I, II  
Instruction and training in the principles and techniques of creative dramatization for work with  
children in the classroom and recreation. Emphasis on the development of the child emotionally and  
socially through dramatic improvisation.

315. (115.) Directing for Children's Theatre (3) II  
Prerequisite: Drama 255.  
Staging and technical problems relative to the production of plays for children; casting procedures,  
blocking and characterization principles, rehearsal and scenic techniques. Practical experience  
through university-sponsored productions.

325. (125.) Original Dramatic Works: Production Laboratory (3) II  
Nine hours of laboratory.  
Prerequisites: Drama 231 and consent of instructor.  
Staging and production of original one-act and full-length plays, in traditional and experimental productions;  
working in conjunction with the students in the playwriting and directing classes.

329A-329B. (129A-129B.) Children's Theatre Workshop (3-3)  
Prerequisite: Drama 315.  
Production of plays for children audiences, with emphasis on elementary and junior high levels.  
Practical experience through participation in university-sponsored productions.

330. (130.) Accents and Dialects for the Stage (3) II  
Prerequisites: Drama 110 and 130.  
Various accents and dialects most frequently occurring in stage productions.

342. (142.) Theatre Workshop (1-3) I, II; (3-6) S Cr/NC  
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.

475. (175.) 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  
practices.

480. (180.) Methods and Materials of Instruction (2) I  
Prerequisites: Drama 310.  
Professional preparation emphasizing organization and practices in the teaching of Dramatic Arts.

496. Experimental Topics (1-4)  
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to  
a bachelor's degree in courses under this number of which no more than three units may be  
applicable to general education requirements.

499. (199.) Individual Study (1-3) I, II  
Prerequisite: Consent of instructor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>521</td>
<td>(121) Theatre Criticism</td>
<td>(3) I</td>
<td>A consideration of the problems and practices of dramatic criticism as applied to theatrical production in the past and present.</td>
</tr>
<tr>
<td>522</td>
<td>(122) Playwriting, the One-Act Play</td>
<td>(3) I, II</td>
<td>Lectures, discussion and reading of one-act plays written by the students.</td>
</tr>
<tr>
<td>523</td>
<td>(123) Playwriting, the Long Play</td>
<td>(3) II</td>
<td>Prerequisite: Drama 522. Lectures and analytical discussions of full-length plays written by students.</td>
</tr>
<tr>
<td>526</td>
<td>(126) Theory of Production for the Musical Stage</td>
<td>(3) I</td>
<td>Theory and principles of production of modern musicals.</td>
</tr>
<tr>
<td>531</td>
<td>(131) Advanced Acting Theory</td>
<td>(3) I</td>
<td>Prerequisite: Drama 130 or 231. The theories and principles of acting.</td>
</tr>
<tr>
<td>532</td>
<td>(132) Advanced Acting</td>
<td>(3) I, II</td>
<td>Prerequisite: Drama 231. Problems in characterization: acting styles of the great periods in theatre history.</td>
</tr>
<tr>
<td>537</td>
<td>(137) High School Play Directing</td>
<td>(2)</td>
<td>Two hours of laboratory. Prerequisites: Drama 240 and 557. Theory and practice of selecting, directing, and producing dramatic presentations in high school, with emphasis on low-budget and creative methods and techniques most practicable and effective in the high school drama program.</td>
</tr>
<tr>
<td>538</td>
<td>(138) Stage Lighting</td>
<td>(3-3) I, II</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Drama 545A is prerequisite to 545B. Light, color, lighting instruments, and control equipment, including the design and planning of lighting for plays.</td>
</tr>
<tr>
<td>540A</td>
<td>(140A) Scenic Design</td>
<td>(3) I</td>
<td>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.</td>
</tr>
<tr>
<td>540B</td>
<td>(140B) Styles in Scenic Design</td>
<td>(3) II</td>
<td>Prerequisite: Drama 540A. History of scenic design and the application of contemporary styles to various types of dramatic production for stage, television and cinema.</td>
</tr>
<tr>
<td>545A-545B</td>
<td>(145A-145B) Stage Lighting</td>
<td>(3-3) I, II</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Drama 545A is prerequisite to 545B. Light, color, lighting instruments, and control equipment, including the design and planning of lighting for plays.</td>
</tr>
<tr>
<td>548</td>
<td>(149) Advanced Dramatic Production</td>
<td>(3)</td>
<td>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.</td>
</tr>
<tr>
<td>551</td>
<td>(151) Costume, Movement, and Manners</td>
<td>(3) I</td>
<td>Prerequisite: Drama 250. The interrelationship of period costumes on the movement and manners of the time and their application on the stage.</td>
</tr>
<tr>
<td>552A-552B</td>
<td>(152A-152B) Costume History and Design for the Theatre</td>
<td>(3-3) I, II</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Drama 250. Drama 552A is prerequisite to 552B. 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.</td>
</tr>
<tr>
<td>554</td>
<td>(154) Costume Construction Techniques</td>
<td>(3) I</td>
<td>Two lecture-demonstrations and three hours of laboratory. Prerequisites: Drama 540A and 552B. Period pattern drafting, draping, cutting, construction, Wig, millinery, armour, mask, accessory construction, Costume paint and dye techniques.</td>
</tr>
</tbody>
</table>
Economics

In the College of Arts and Letters

Faculty
Emeritus: Chadwick, McClinic, Ryan
Chairman: Sebold
Professors: Anderson, Babiak, Barckley, Bradford, Clement, Flagg, Gifford, Jencks, Leasure, Madhavan, Nam, Neumer, Poroy, Sebold, Turner, Venieris
Associate Professors: Hamilton, Hardesty, Kartman, Popp, Assistant Professors: Holt, Stawart
Lecturers: Bolton, Parti, Rotella, Schwartz, Vogt

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.

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 on page 63 of this catalog.

Two plans are provided for the major in economics: Plan A for those students expecting to pursue the study of economics beyond the A.B. degree; and Plan B for those students with a liberal arts interest, or for those who are interested in prelegal education or a combined economics-business program.

Plan A

Preparation for the major.
Economics 120 and 121 (303 and 304), 142, and Mathematics 107 (103)
(14 units.) With approval of the department, Economics 103 may substitute for either Economics 120 (303) or Economics 121 (304). Mathematics 107 is recommended.

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 "Graduation Requirements" on page 67.

Major.
A minimum of 24 upper division units in economics to include Economics 303 and 304. May not be used to fulfill minimal upper division requirements in other majors.

Minor.
A minor is not required with this major; however, the student is strongly advised to take a minor in mathematics.

Plan B

Plan B is a flexible program to meet the needs of several groups of students. Advisory programs of study are available in the Economics Department office for the following groups: (a) prelaw majors; (b) a broad-ranging liberal arts interest; and (c) a combined economics and business interest.

Preparation for the major.
Economics 120 and 121 (303 and 304) and 142. (9 units.) With approval of the department, Economics 103 may substitute for either Economics 120 (303) or Economics 121 (304). Students planning careers in law or business are advised to take at least one semester of accounting.

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 "Graduation Requirements" on page 67.

Major.
A minimum of 24 upper division units in economics to include Economics 303 and 304. May not be used to fulfill minimal upper division requirements in other majors.

Minor.
A minor is not required with this major.

Economics Minor

The minor in economics consists of a minimum of 15 units in economics, nine units of which must be in upper division courses; Economics 303 and 304 are not acceptable.

Courses in the minor may not be counted toward the major.

Economics

For the Single Subject Teaching Credential in Social Science

Economics is an area of concentration for the Social Science Major; a program leading to a secondary education credential in Social Science. The requirements are those established for the Social Science Credential. See page 381.

LOWER DIVISION COURSES

103 (3). Contemporary Economic Problems (3) I, II
Investigates economic bases for such current problems as inflation, unemployment, economic power, consumer protection, poverty, discrimination, urban and environmental deterioration, and international domination. Examines such policies as fiscal-mone.tary policy, tax reform and government controls and provision of services.

120 (4A). 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 macroanalysis including national income analysis, money and banking, business cycles, and economic stabilization. Not open to students with credit in Economics 303.

121 (18). 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 the direction of production, the allocation of resources, and the distribution of income, through the price system (microanalysis), and international economics. Not open to students with credit in Economics 304.

142 (2). Statistical Methods (3) I, II
Prerequisite: Mathematics 103 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 in statistics.

299 (39). Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number. No more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(186.) Honors Course (1-3)
Refer to Honors Program

303 (103A). 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 120. May not be used to fulfill minimal upper division requirements in the economics major or minor or liberal studies major.

304 (103B). 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 121. May not be used to fulfill minimal upper division requirements in the economics major or minor or special major.

311 (101). History of Economic Thought (3)
Prerequisites: Economics 120 (303) and 121 (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. **Marxian 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 pertain to the periods in which they were conceived and to modern times.

320. **(100B.) Intermediate Economic Theory (3)**  
I, II  
Prerequisite: Economics 120 (303), or Economics 103 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. **(100A.) Intermediate Economic Theory (3)**  
I, II  
Prerequisite: Economics 121 (304), or Economics 103 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. **(104B.) Macroeconomic Analysis (3)**  
Prerequisites: Economics 120 (303), or Economics 103 with approval of department, and Mathematics 150.  
Mathematical interpretation of macroeconomic theory. Credit will not be given for both 320 and 324.

325. **(104A.) Microeconomic Analysis (3)**  
Prerequisites: Economics 121 (304), or Economics 103 with approval of department, and Mathematics 150.  
Mathematical interpretation of microeconomic theory. Credit will not be given for both 321 and 325.

330. **(102.) Comparative Economic Systems (3)**  
Prerequisite: Economics 120 (303) or 121 (304) or 103.  
The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism, communism, fascism, revolution. Criteria for evaluating economic systems. The individual and government in each system. Planning in a liberal capitalist society.

332. **(112.) Capitalist Economy (3)**  
Prerequisite: Economics 120 (303) or 121 (304) or 103.  
The relationship between the dominant economic and political institutions of capitalist organization and the major social problems of modern capitalism.

335. **(110.) Economic History of Europe (3)**  
Prerequisite: Economics 120 (303) or 103.  
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)**  
Prerequisite: Economics 120 (303) or 103.  
Evolution of economic organization, institutions, and policies of Africa, Asia, and Latin America. Regional emphasis will vary. Maximum credit six units.

Prerequisite: Economics 120 (303) or 103.  
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. **(197.) Research Design and Method (3)**  
Prerequisite: Economics 142.  
Instruction in the practical application of the various techniques of economic research to a range of problems typically encountered in the economics profession. Sources and limitations of basic data, survey research, industry studies, economic forecasting, national impact studies, area and regional studies.

360. **(190.) International Economic Problems (3)**  
Prerequisites: Economics 120 (303) and 121 (304). Not open to students with credit in Economics 561 or 582.  
International problems, economic communities, organizations, and other selected topics.

365. **(195.) Economics of Underdeveloped Areas (3)**  
Prerequisite: Economics 121 or 304.  
The nature and causes of economic underdevelopment. Problems of and policies for the economic development of underdeveloped areas of the world.
466. (118.) The Economics of the Soviet Union and Eastern Europe (3)
Prerequisite: Economics 120 (303) or 121 (304) or 103.
The development, institutions, and problems of the Soviet and East European economies.

469. (119.) Economic Problems of Africa and the Middle East (3)
Prerequisite: Economics 120 (303) or 121 (304) or 103.
Economic development, institutions, and problems of Africa and the Middle East.

474. (174.) Economic Concentration and Monopoly Power (3)
Prerequisites: Economics 120 (303) and 121 (304).
The implications of economic concentration and monopoly. The evaluation of mergers, consolidations and other forms of monopoly power in terms of social and economic goals. Attempts to control monopoly power by antitrust laws, by policies regarding competitive practices and by other means.

475. (175.) Industry Studies (3)
Prerequisites: Economics 120 (303) and 121 (304).
Evaluation of the structure, conduct and performance of selected industries in terms of social and economic goals.

478. (171.) Transportation Economics (3)
Prerequisites: Economics 120 (303) and 121 (304).
Economic impact of the availability and cost of transportation service. Organization, rate-making practices, financing and regulation of transportation agencies: air, surface, and water. Current issues of national transportation policy.

477. (172.) Public Utilities (3)
Prerequisites: Economics 120 (303) and 121 (304).
Economics and regulation of utility enterprises: growth, pricing, demand and cost behavior, financing, regulatory principles and techniques. Public power and other current policy issues.

482. (152.) Collective Bargaining (3)
Prerequisites: Economics 120 (303) and 121 (304).
Structures of labor relations: management and union problems; public policy and collective bargaining; simulation of collective bargaining experiences.

483. (153.) Comparative Labor Problems (3)
Prerequisites: Economics 120 (303) and 121 (304).
Comparative study of labor relations systems and labor movements in both advanced and developing nations. Individual study of a particular country of the student's choice.

484. (154.) Economic Aspects of Human Resources (3)
Prerequisite: Economics 120 (303) or 121 (304) or 103.
Analysis of health, education, and manpower within the context of government expenditure, economic growth, and the theory of human capital.

489. (189.) Population and Economic Growth (3)
Prerequisite: Economics 120 (303) or 121 (304) or 103.
Interrelationship between the components of population change (fertility, mortality, and migration) and economic growth in developed and underdeveloped areas.

490. (135.) Money and Banking (3) I, II
Prerequisites: Economics 120 (303) and 121 (304).
The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.

496. (167.) Contemporary Issues (3)
Prerequisite: Consent of instructor.
Current policy issues and problems from an economic point of view. Maximum credit six units.

497. (198.) Investigation and Report (3) I, II
Open to economics majors only. Independent study and investigation. Guidance in the collection, organization, and presentation of factual material. May be repeated for a maximum of six units; maximum credit in 497 and 499 limited to six units.

498. (199.) Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. May be repeated for a maximum of six units; maximum credit in 497 and 499 limited to six units.
School of Education

Faculty
Dean: Arciniega

Counselor Education Department
Chairman: Chamley
Professors: Bruce, Carnevale, Chamley, Cummins, Hawley, Malcolm, Miller
Associate Professors: Howard, Leppalauto, McFarlane, Thompson
Assistant Professors: Jones, Trujillo
Lecturer: Johnson

Educational Administration Department
Chairman: Holt
Professors: Holt, Lienert, Wetherill
Associate Professors: Merino, Wurburton

Educational Technology and Librarianship Department
Chairman: Harrison
President: Harrison
Associate Professors: Kalmar, McAllister, Wep
Lecturers: Sharpe, Trier

Elementary Education Department
Emeritus: Bacon, Campbell, Corbett, Hammae, I., LuPone, Madden
Chairman: Kratz
Professors: Anderson, Baker, Blank, Bridgland, Burns, Charles, Fisher, Gast, Gates, Gega, Goodson, Goff, Hill, W., Huis, Insko, Kendall, LaPray, Melton, Nagel, Nearb (Associate Dean)
Pettyeys, Retson, Romm, Roos, Rowland, Serey, Stough, Strom, Tassas, Wilding
Associate Professors: Becker, Berg, Botkin, Clark, Cleveland, Elliott, Ford, Kaatz, Mazon, Mooers, Moreno, Morris, Murphy, Reel, Treadway, Walsh
Assistant Professors: Birch, Hill, P., Kiann

Secondary Education Department
Emeritus: Acom, Apple, Bradley, Hunter, Kinder, Linley, White, Yarborough
Chairman: Meeke
Professors: Anthony, Becklund, Briggs, Crum, Erickson, Fishburn, Friedman, Gray, Halvaker, McCabe, McCoy, Meek, Parn, Paiz, Protz, Samuels, Shaw, Smith, H., Smith, R., Stauftand, Steckbauer
Associate Professors: Bee, Curry, Duckworth, Holman, McLeivie, Morris, Pehlson, Richman, Yeeulman
Assistant Professors: Altamura, Bahn
Lecturers: Holden, Waymon

Special Education Department
Chairman: Ballantine
Professors: Ballantine, Fearn, McClard, Mitchell, Singer, Trimmer
Associate Professors: Doorlag, Forling

Institute for Cultural Pluralism
Director: Mazon
Associate Professor: Mazon
Assistant Professors: Getler, Ochoa, Rodriguez
Lecturers: Adorno, France, Kalekta, Toward

Offered by the School of Education
Master of Arts degree in education with concentrations in eleven areas.
Master of Science degree in counseling.
B.V.E. degree.
Teaching credentials in all areas.
Minor in Educational Technology and Librarianship.

Educational Technology and Librarianship Minor
The minor in educational technology and librarianship consists of a minimum of 15 units in education in the area of educational technology and librarianship, six units of which must be in upper division courses.

Teaching/Service Credentials
Assembly Bill 122 (Ryan Bill) has changed the credential structure in the State of California. Students who desire to seek a credential should consult with departmental advisers in order to determine their status and needed requirements. Information on these new credentials is available in the offices of the several departments of the School of Education and in the Admissions Office, School of Education.

Admission to Teacher Education

Education / 189
Standards for Admission

Multiple Subjects Credential (Elementary Education)

1. Formal application to the education program must be filed sometime after completing 45 units of college work.

2. Written recommendations. Applicants will be required to provide two written character references from persons not related to them. These recommendations will be included in the applicant's folder and will be examined by the Admissions Committee.

3. Prior experience with children and youth groups. Applicants will provide evidence of having had experience with children and youth groups. Such evidence will consist of a signed (by supervisor) statement, describing the experience and including the place and approximate dates of the experience. For applicants not having such experience working with children, a laboratory activity course providing such experiences will be required prior to admission into the professional preparation sequence.

4. Successful completion of the Reading Comprehension and Writing Competency tests. These tests are offered several times each year. Consult the Class Schedule or the bulletin board outside Education 100 for dates and time.

5. Health clearance. To meet the specific requirements for authorization for student teaching, a medical examination must be completed. This examination is in addition to the medical required for admission to the University.

6. Interview. Interviews with faculty members of the Department of Elementary Education should be scheduled during the weeks following the application period. (See application packet for specific dates.)

7. Student teaching application. Application for a student teaching 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 in the professional education courses and in overall college work to remain in the program. Transfer students must have copies of their transcripts forwarded to the Elementary Education Department.

9. Planned program appointment. After completion of 45 college units, each student should sign up for an appointment with a faculty adviser 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.

Health Science and Safety 320, "Child Health" 2 units
Mathematics 210A, "Structure and Concepts of Elementary Mathematics" 3 units
Music 102, "Basic Musicship for Non-Music Majors" 3 units
Physical Education 141, "Physical Education of Children" 3 units

11. Major. The major course is designed to provide experience for students desiring to teach elementary school. A student majoring in elementary education must earn at least 18 units in the discipline. Six units must be in upper division work. The following are recommended majors:

A. Mathematics: Mathematics 210A, 210B, 210C
B. Language Arts: Language Arts 100, 101, 102
C. Social Science: Social Science 100, 101, 102
D. Science: Science 100, 101, 102

New Students Who Seek to Complete a Credential

Teachers with a provisional credential or partial fulfillment of requirements credential or the equivalent of college credit completed to date, and arrangements for programming should be made through the Admissions Office of the School of Education.

Advanced Standing in Teacher Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional education work in residence at this university in order to obtain a recommendation for a credential, regardless of the extent of education work completed elsewhere.

Evaluation of Credits

After an interval of five years, courses in education are revaluated and subject to reduction in credit, in light of new requirements and changes in educational procedures. All courses taken 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. Admission to Stage I (Secondary Education 400: The Secondary School).

This is an introductory course which serves as orientation to secondary education. Typically, priority will be given to graduate and senior students. The department is also seeking students with a bilingual background. Formal application must be made early in the semester preceding anticipated enrollment in the course. The following material must be on file in ED-100 at least one month before the end of the semester preceding enrollment:

Note: Applicants with extensive experience in secondary schools and with demonstrated excellent performance in their credential discipline (2.5 minimum grade point average) may apply to the Admissions Committee. Secondary Education Department, to enroll in a one-unit competency based module on teaching rights and responsibilities, concurrently with Stage II. This special module will take the place of Secondary Education 400.

- Completed formal application to Secondary Education 400.
- Transcripts of all college work verifying an acceptable grade point average of 2.50 overall and 3.0 in the major. Unofficial student copies of transcripts are acceptable. Those whose GPA does not meet this standard should consult the Director of Admissions, Room ED-100, 286-6116.
- Evidence of satisfactory completion of the English Proficiency Test.

2. Admission to Stage II (Secondary Education 401, 402, 405).

Courses in Stage II comprise the first block of professional education courses and include an initial student teaching experience. Formal application for admission to these courses shall be made during the semester prior to anticipated enrollment. Normally this is done while the student is enrolled in Secondary Education 400; but in any case, the following must be on file in ED-100 at least one month before the end of the semester preceding enrollment:

- Completed formal application to Secondary Education program.
- Transcripts from the adviser in the major department and the Secondary Education 400 instructor.
- Evidence of satisfactory completion of medical examination.
- Evidence of satisfactory completion of the English Proficiency Test. If a satisfactory score is not achieved, the student must complete a remedial program before admission to Stage II. Check with the Office of Admissions and Advising in ED-100 to determine the appropriate remediation.

Pre-registration meetings for admission to Stage II are held about one month before the end of each semester. Priority for admission is based upon the date of clearance of the above requirements.

3. Admission to Stage III (Secondary Education 406-407).

These courses include a full-time student teaching experience. Application must be made in the semester prior to anticipated enrollment. Normally this is done while the student is enrolled in Secondary Education 405; but in any case, application must be made at least one month before the end of the semester preceding enrollment.

New Students Who Seek to Complete a Credential

Teachers with a provisional credential or partial fulfillment of requirements credential who are working toward a regular 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 Admissions Office of the School of Education.

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.
After an interval of five years, courses in education are reevaluated and subject to reduction in credit, in light of new requirements and changes in educational procedures. All courses taken either at this university or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

Multiple Subjects Teaching Credential

Multiple Subjects (Elementary) — Clear Credential

Persons interested in teaching in the elementary school will typically pursue the multiple subjects credential which authorizes the holder to teach in any self-contained classroom, classrooms in which one teacher is responsible for all the subjects commonly taught in the elementary schools. Attainment of this credential requires:

1. A bachelor's degree (or higher) with any major other than education.
2. Completion of a fifth year of study (30 units of upper division or graduate units).
3. Completion of an approved program of professional education including 15 units of course work and 16 units of student teaching (see Department of Elementary Education for further information about the approved programs).
4. Passage of subject matter examination(s) or waiver thereof through Liberal Studies major.
5. Knowledge of methods of teaching reading.
7. Health education methods and materials.

Multiple Subjects (Elementary) — Preliminary Credential

An applicant may be granted a preliminary teaching credential if the applicant has met all the requirements listed above except for completion of the fifth year of study. 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 30 units (the fifth year of study) in order to become eligible for the "clear" credential.

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

The liberal studies major offers a general type of education leading to objectives not otherwise provided in the regular programs of the university. Students electing this major must declare it prior to satisfactory completion of 90 semester units.

Option 1. This program is available to all students but is not acceptable for the Multiple Subjects credential. Information regarding this option is presented in the interdepartmental programs section of this catalog.

Option 2. Liberal Studies with the A.B. Degree in Applied Arts and Sciences

The student taking this option selects courses to extend his background in the four groups of knowledge identified as follows: more than 30 units may be taken for credit toward this major in any one department or area:

Group A: English (including courses in grammar, literature, composition) and speech. This group includes the following areas: (1) Afro-American Studies (English and speech only); (2) comparative literature; (3) English, i.e., American literature, British literature, and creative writing; (4) journalism; (5) linguistics; (6) Mexican-American Studies (English and speech only); (7) speech communication, plus (8) speech pathology and audiology.

Group B: Mathematics and science (physical sciences or life sciences). This group includes the following areas: (1) geography (101, 103, 104, 105 only); (2) the life sciences, i.e., biology, botany, microbiology, zoology; (3) mathematics; (4) the physical sciences, i.e., astronomy, chemistry, geology, oceanography, physical science, physics; (5) psychology.

Group C: Social sciences. This group includes social science courses only in the following areas: (1) Afro-American Studies; (2) anthropology; (3) economics; (4) family studies and consumer sciences; (5) geography; (6) health science and safety; (7) history; (8) Mexican-American Studies; (9) political science; (10) social welfare; (11) sociology; (12) women's studies.

Group D: Humanities and fine arts (including foreign languages). This group includes the following areas: (1) Afro-American Studies (humanities and fine arts only); (2) art; (3) drama; (4) foreign languages and literatures, i.e., classical and oriental, French and Italian, German and Russian, Spanish and Portuguese; (5) humanities; (6) Mexican-American Studies (humanities and fine arts only); (7) music; (8) philosophy; (9) religious studies; (10) women's studies (humanities and fine arts only).

Preparation for the major.

Group A: Fifteen units of approved course work to include: a three-unit course in composition; a three-unit course in literature; a three-unit course in speech communication; a three-unit course in linguistics; and three additional units of course work selected from the areas listed under Group A above.

Group B: Fifteen units of approved course work to include: six units of mathematics; three or more units of life science; three or more units of a physical science; and additional units of course work selected from areas listed under Group B for a minimum of fifteen units.

Group C: Fifteen units of approved course work to include: course work to satisfy "American institutions", requirements; and additional units of course work selected from the areas under Group C.

Group D: Fifteen units of approved course work to include: three units of art; three units from any of the areas specified in the Ryan Bill. Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education.

Single Subject Teaching Credential

Single Subject (Secondary) — Clear

Persons interested in teaching in the secondary school will typically pursue the single subject credential which authorizes the holder to teach K-12 in any of the subjects indicated below. Attainment of this credential requires:

1. A bachelor's degree (or higher) with any major other than education.
2. Completion of a fifth year of study (30 units of upper division or graduate units after completion of baccalaureate degree).
3. Completion of an approved program of professional education. The required courses are: Secondary Education 400, 401, 402, 405, 406, 407; and Educational Technology and Librarianship 404.
4. Passage of subject matter examination(s) or waiver thereof through completion of approved credential major in one of the areas listed below.
5. Knowledge of methods of teaching reading, Secondary Education 403. (Except for majors in music, art, and physical education.)

Includes all graduation requirements except physical education (Students who plan to enter elementary education must take Physical Education 141 in lieu of one of the physical education activity units for graduation.)

Mathematics 210A-210B is required for students who plan to enter secondary education.

One course in either physical or life science must include a laboratory.

Health science and safety is required for students who plan to enter elementary education.

Music: 102 is required for students who plan to enter elementary education.
Single Subject (Secondary) — Preliminary

An applicant may be granted a preliminary teaching credential if all the requirements listed above have been met except for completion of the fifth year of study. 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.

Acceptable Single Subject Areas

<table>
<thead>
<tr>
<th>Art</th>
<th>Life Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>Mathematics</td>
</tr>
<tr>
<td>English</td>
<td>Music</td>
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<tr>
<td>Foreign Languages</td>
<td>Physical Education</td>
</tr>
<tr>
<td>History</td>
<td>Physical Sciences</td>
</tr>
<tr>
<td>Home Economics</td>
<td>Social Sciences</td>
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<tr>
<td>Industrial Arts</td>
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</tbody>
</table>

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.

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 librarian/media specialist in grades kindergarten through 12. For information concerning the credential, the student is referred to the Department of Educational Technology and Librarianship.

Standards 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.
5. An undergraduate grade point average of 2.5 or a graduate grade point average of 3.0.

Special Education Specialist Credential

San Diego State University offers curricula for the Special Education Specialist Credential in the five areas: Communication Handicapped, Learning Handicapped, Severely Handicapped, Physically Handicapped, and Gifted. For information concerning the Communication Handicapped, the student is referred to the Department of Speech Pathology and Audiology. For information concerning the other specialties, the student is referred to the Department of Special Education.

The five areas authorize the holder to teach the types of exceptional children listed:

1. Communication Handicapped.
2. Learning Handicapped.
3. Severely Handicapped.
4. Physically Handicapped.
5. Gifted.

Standards 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).
3. A basic teaching credential.
4. Interview(s) with a faculty member in the Department of Special Education or Speech Pathology and Audiology.

The following program elements are required of all library credential candidates: (28 units)

<table>
<thead>
<tr>
<th>Program</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ETL 445 School Library Media Program</td>
<td>3</td>
</tr>
<tr>
<td>ETL 540 Education Technology</td>
<td>3</td>
</tr>
<tr>
<td>ETL 541 Production of Instructional Materials</td>
<td>3</td>
</tr>
<tr>
<td>ETL 546 Basic Reference Materials</td>
<td>3</td>
</tr>
<tr>
<td>ETL 547 Selection of Instructional Materials</td>
<td>3</td>
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<tr>
<td>ETL 549 Cataloging and Classification</td>
<td>3</td>
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<tr>
<td>ETL 675 Seminar in the Administration of Instructional Media Centers</td>
<td>3</td>
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<tr>
<td>ETL 678 Literature for Children</td>
<td>3</td>
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<tr>
<td>ETL 679 Literature for Adolescents</td>
<td>3</td>
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<tr>
<td>ETL 483 Directed Teaching-Library Practice</td>
<td>4</td>
</tr>
<tr>
<td>ETL 775 Directed Internship for the Instructional Media Specialist</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Units 31
Bachelor of Vocational Education Degree

Instructors of Occupational Education are encouraged to complete the B.V. Ed. 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, students 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 qualify for an official evaluation under provisions of the Swan Bill through the State Board of Vocational Examiners. To qualify for the evaluation, the requirements of the State Education Code, Section 23956, must be met. This regulation stipulates a minimum period of vocational teaching experience amounting to 1,820 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.) (70 units maximum) 60 units
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 must count as upper division units. (See Higher Education Programs Coordinator for assistance and application forms.) 40 units maximum 40 units
3. The individual must take the professional occupational teacher education courses required for the Community College Credential (Title 5). To receive credit toward the B.V.E. degree, these courses must be taken from an institution that will grant credit for the courses toward a bachelor's degree. 3. General Education: Courses in designated courses on the community college, with 12 units in designated courses on the community college. 6 units
4. The individual must complete the B.V.E. degree with 375-387 units required for the Community College Credential. (Title 5) 6-12 units
5. The individual must complete the B.V.E. degreePlus the requirements of the Swan Bill (23956) through the State Board of Vocational Teachers, Bureau of Industrial Education, State Education Bldg., 721 Capitol Avenue, Sacramento, California. These units must count as upper division units, 40 units

The individual must receive credit for the required number of upper division courses to complete the Bachelor of Vocational Education degree graduation requirements. This includes those given in item 2 above.

The individual must see an adviser in the area of his major to arrange his program for completion of coursework. A series of elective courses that will support the professional responsibilities of the candidate will be recommended. Furthermore, 24 units must be in residency at SDSU. 124 units total

Education - LOWER DIVISION COURSE

299. (99) Experimental Topics (1-4) Refer to catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended Primarily for Undergraduates)

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

375. (128A) Principles of Adult Education (2) History, philosophy, objectives and administration of adult education.

376. (128B) Methods and Materials in Adult Education (2) Identification, selection, and utilization of teaching methods, techniques, and materials appropriate for adults.


380. (156) Community College Occupational Education (3) Prerequisite: Two years of occupational experience in a community college subject matter area. Principles, practices, scope and functions of education.
381. (157.) Community College Occupational Curriculum (3)
Prerequisite: Education 380.
Materials and methods of instruction, curriculum development and evaluation.

382. (158.) Directed Teaching (2 or 4) Cr/NC
Prerequisite: Education 380, 381 or 365.
Systematic observation, participation, and teaching under supervision in an occupational area in a community college.

383. (101.) History and Philosophy of Education (2) I, II, S
The historical backgrounds and underlying philosophies upon which the public school system has been established. Meaning of education, educational aims and values, and democracy and education.

387. (197.) Problems in Education (Credit to be arranged)
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. (105.) 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)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

499. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

550. Philosophy of Cultural Pluralism in Education (3)
Study of culture from a multidisciplinary and holistic perspective provides a thorough understanding of the interrelationship 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.

553. Multicultural Oral Language Assessment Training (3)
Prerequisite: Education 550.
Orientation to study of selected culture's linguistic characteristics; comparison with Standard American English for distinguishing problems of linguistic interference on oral language performance of pupils as a basis for prescribing individualized instruction; emphasis on home/community context of child language.

555. (158.) Occupational Student (3)
Prerequisite: Education 380 or 381.
The learning process and individual differences, behavioral characteristics of youth, race and ethnic relations in the schools.

568. (128D.) Human Relations and Counseling in Adult Education (2)
Prerequisite: Possession of a valid teaching credential. Principles, procedures and issues appropriate to human relations and counseling in adult education.

593. (128E.) Workshop in Adult Education (1-3)
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.

Counselor Education
UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees in the Major Area)

506-S. (197-S.) Guidance Conference (1) S
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. Maximum credit three units.

Educational Technology and Librarianship
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

404. (100E.) Instructional Media, Equipment and Production (1) I, II Cr/NC
Basic audiovisual equipment operation, production of inexpensive instructional materials, and application of learning theory to the utilization of instructional materials. (Formerly numbered Secondary Education 404.)

445. (145.) 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. (183.) 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 in a school library and/or teaching materials center. A weekly seminar or conference is required.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

540. (140.) Educational Technology (3) I, II, S
Two lectures and three hours of laboratory. Applications of educational technology to instruction and learning. Individualization through the use of media. Includes film, TV, simulation, programmed instruction, computers and multi-media.

541. (141.) Production of Instructional Materials (3) I, II, S
Two lectures and three hours of laboratory.
Planning and preparing instructional materials for classroom use. Independent study centers, transparencies, film, charts, lettering aids, learning games.

544. (144.) Instructional Materials Design (3) I, II

546. (146.) 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. (147.) Selection of Instructional Materials (3) I, II
Prerequisite: Educational Technology and Librarianship 445.
Selection criteria and development of written policy statements. Annotations, reviewing media, standard catalogs and bibliographies.

548. (148.) Cataloging and Classification (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Educational Technology and Librarianship 445.
A practical approach to organizing instructional materials in school library media centers. Descriptive cataloging, classification, and choice of subject headings. Basic knowledge of typing helpful.
549. Ethnic Material 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, viewing, analysis and evaluation.
550. (150) Workshop in Educational Technology and Librarianship (1-3)
Selected problems in educational technology and librarianship. Maximum credit six units.
553-S. (143-S) Workshop in Educational Television (6) S
(Same course as Telecommunications and Film 320-S.)
Open to teachers and students interested in instruction by television. The procedures and theories of television production as it pertains to closed circuit and instructional use of television. The selection and utilization of program content and the method of presenting material through the television medium will be discussed and demonstrated.

Elementary Education

UPPER DIVISION COURSES

(Primary Intended Primarily for Undergraduates)

200. Careers in Elementary Education (3) I, II
Two lectures and four hours of activity.
Prerequisite: Satisfactory completion of 12 hours of university work.
Exploring elementary education as a profession, to include review of preparation requirements, patterns of classroom and school organization, and the role of the elementary educator in various instructional environments. Observation and participation in schools and school related settings.

301. Basic Student Teaching Seminar (2) I, II
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 (2) I, II
Prerequisites: Elementary Education 301, 401; and concurrent registration in Elementary Education 403.
Discussion of immediate problems in student teaching with emphasis on the influence of philosophical, social and cultural factors on learning.

307. Seminar in Student Teaching (3) I, II
Prerequisite: Concurrent registration in Elementary Education 407.
Diagnosing and remediating elementary school children's difficulties in speech, spelling and handwriting, the individualization of instruction, professional self-evaluation, assessing learners' achievements, and counseling with learners and parents.

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 using the principles of instruction related to readiness, motivation, efficiency of learning and transfer of learning to organize an effective learning environment for children.

316. Skills in Teaching Critical Thinking (2) I
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in developing instructional strategies to guide children in concept development, inquiry, exploration of creativity, and learning in the affective domain.

317. Skills in Curriculum Organization (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in planning, following and evaluating long-range instruction in the various school subjects.

361. Psychological Foundations of Education (3) I, II
Six hours of activity.
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.

Prerequisite: Elementary Education 372.
Psychological principles for effective classroom teaching; techniques of measurement and evaluation for the diagnosis and improvement of learning.

372. (111) The Learner in the Elementary School (3) I, II
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. Not open to students with credit in Family Studies and Consumer Sciences 270 and Psychology 330.

373. (139) Kindergarten-Primary Practicum (3) I, II
The theory of early childhood education and the materials and teaching techniques used in the kindergarten.

374. (115) Guidance in Elementary Education (3) Irregular
A study of the basic principles of guidance and their function in the educational process as applied in the elementary school.

375. (116A-116B-116C) Child Study Laboratory (1-3) Irregular
Offered only in Extension.
Development of background and procedures for child study and their application to field situations. Field work required. For teachers in service. Maximum credit six units.

401. Basic Student Teaching (1-8) I, II Cr/NC
Prerequisites: Admission to elementary education and concurrent registration in Elementary Education 401.
Day-to-day teaching experiences including selected instructional activities for which a teacher in a classroom is normally responsible.

403. Advanced Student Teaching (1-8) 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 (2) 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 (3) I, II
Six hours of activity.
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 (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, listening to assure children's growing language skills.

413. Teaching Mathematics 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.

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 science education.

415. Teaching Science in the Elementary School (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary science education.

416. Teaching Art in the Elementary School (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 art education.

417. Teaching Music 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 music education.

418. Teaching Science and Social Studies in the Elementary School (3) I, II
Six hours of activity.
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.
402. (100C) 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. (100D) 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. (100F) Student Teaching (3) I, II Cr/NC
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 401 and 402.
On-site, part-time experience to implement teaching competencies developed in Secondary Education 401 and 402.

406. (100G) Student Teaching II (9) I, II Cr/NC
Prerequisites: Secondary Education 400, 401, 402, 403, 405. To be taken concurrently with Secondary Education 407.
On-site, full-day experience to implement teaching competencies as developed from the total professional sequence.

407. (100H) Student Teaching Seminar (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.

412. (113) Growth and Development of the Adolescent (3) Irregular
Adolescent physiological, psychological, social and emotional development, including principles of mental hygiene and guidance. Field work with adolescent groups in the community is required.

413. (120) The Teaching Process (3) I, II
To develop teacher competency at the secondary level in professional and community relationships, general methods and materials, planning for teaching, and evaluating learning activities.

414. (121) Methods and Materials of Instruction: Major (2) except Secondary Education 414E (3) Irregular
Lecture courses, except that Secondary Education 414K meets for 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

- B: Methods in English
- C: Methods in Home Economics
- D: Methods in Industrial Arts
- E: Methods in Foreign Languages
- F: Methods in Mathematics
- G: Methods in Physical Science
- H: Methods in Speech Communication
- M: Methods in Social Science

Offered in the Spring Semester

- B: Methods in English
- C: Methods in Home Economics

Offered Irregularly

- P: Methods in Health Education
- H: Methods in Phys. Ed. (Men)

422A-422B. (180C-180D) Directed Teaching: Secondary (3-3) Irregular Cr/NC
Systematic observation, participation and teaching under supervision in a junior or senior high school. A weekly seminar or conference is required. Secondary Education 422B is also offered in the summer.

521. (130) Reading Difficulties (3) I, II, S
Two lectures and three hours of laboratory.
Prerequisite: Elementary Education 621.
Reading difficulties, their causes, prevention and correction, Remedial practices in reading useful to the classroom teacher and reading specialist.

563. (152) Measurement and Evaluation in Secondary Education (3) Irregular
Problems of evaluation in secondary education; construction of examinations, elements of statistics; selection and interpretation of standardized measures.

584. (153) Quantitative Methods in Educational Research (3) I, II
Basic tests of statistical significance with special reference to the interpretation of educational data.

596. (126) Workshop in Secondary Education (1-3 or 6) I, II
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. Maximum credit six units.

Special Education

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

420. Field Experiences in Special Education (1) I, II, S Cr/NC
Prerequisite: Concurrent registration in Special Education 510.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
- A: Learning Handicapped
- B: Severely Handicapped
- C: Physically Handicapped
- D: Gifted

421. Field Experiences in Special Education (1) I, II, S Cr/NC
Prerequisite: Concurrent registration in Special Education 511.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
- A: Learning Handicapped
- B: Severely Handicapped
- C: Physically Handicapped
- D: Gifted

422. Field Experiences in Special Education (1) I, II, S Cr/NC
Prerequisite: Concurrent registration in Special Education 512.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
- A: Learning Handicapped
- B: Severely Handicapped
- C: Physically Handicapped
- D: Gifted

423. Field Experiences in Special Education (1) I, II, S Cr/NC
Prerequisite: Concurrent registration in Special Education 513.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
- A: Learning Handicapped
- B: Severely Handicapped
- C: Physically Handicapped
- D: Gifted
471. Practicum in Special Education (2) I, II, S

One lecture and two hours of field work.

Prerequisites: Admission to Special Education; credit or concurrent registration in Special Education 500.

Supervised observation and participation in classroom related school activities for exceptional children. Course work includes discussion, analysis, and reports of observation.

475. (179) Curriculum and Instruction for Teaching the Deaf (3) II

Prerequisite: Concurrent registration in Special Education 480E.

General elementary curriculum principles, methods and materials of instruction in teaching elementary subjects, including reading, to deaf children. Twenty-six hour observation in programs for the deaf.

480. Directed Internship: Special Education (1-4) I, II CR/NC

Application to take course should be made during the preceding semester. Extensive daily teaching in public schools of exceptional individuals in one of five areas:

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted
E. Communication Handicapped

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

500. Exceptional Individuals (3) I, II, S

Two lectures and two hours of activity. Behavioral characteristics 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. (Formerly numbered Special Education 567.)

501. Instructional Programs for Exceptional Individuals (2) I, II, S

Prerequisite: Credit or concurrent registration in Special Education 500.

Assessment of instructional needs, planning an effective individualized school 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.

Theories and processes of communication technology as they pertain to the functioning, individually 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, S

Prerequisites: Special Education 501 and 502, and concurrent registration in Special Education 420.

Tests and procedures for assessing, evaluating and monitoring progress of exceptional individuals to meet their physical, intellectual, social, and emotional needs. Problems in the psychological diagnosis and appraisal. Utilization of assessment procedures for the educational and rehabilitation program. (Formerly numbered Special Education 561.)

May be taken in each of the four areas of specialization.

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

511. Curriculum and Instruction for Exceptional Individuals (3) I, II, S

Prerequisites: Special Education 501 and 502, concurrent registration in Special Education 421.

Utilization of data for determining general and specific objectives to meet the needs unique to exceptional individuals. Developing and selecting materials and procedures for the achievement of these objectives. Establishing procedures for monitoring and evaluating pupil progress. (Formerly numbered Special Education 563, 568 and 573.)

May be taken in each of the four areas of specialization:

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

512. Personal Adjustment of the Exceptional Individual (3) I, II, S

Prerequisites: Special Education 501 and 502, concurrent registration in Special Education 422.

Overlays of intellectual, emotional and physical problems which influence the success or failure patterns of individuals with exceptional needs. Strategies used to facilitate the adjustment of the exceptional individual to his environment including home, school and work. (Formerly numbered Special Education 572.)

May be taken in each of the four areas of specialization:

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

513. Dynamics of Behavior Change and the Exceptional Individual (3) I, II, S

Prerequisites: Special Education 501 and 502, concurrent registration in Special Education 423.

Management and treatment of individuals with exceptional needs. Current theories and programs in behavioral change studies analyzed with reference to their applications for the educational environment.

May be taken in each of the four areas of specialization:

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

550. (170) Workshop in Special Education (2-4) I, II, S

Curriculum and methods of teaching in an area of exceptionality, observation of demonstration class, development of materials of instruction. May be repeated once in a second area of exceptionality. Maximum credit six units applicable on any degree.

GRADUATE COURSES

For graduate courses in Education, Counselor Education, Educational Administration, Educational Technology and Librarianship, Elementary Education, Secondary Education, and Special Education, refer to the Graduate Catalog.
School of Engineering

The undergraduate degrees in aerospace, civil, electrical, and mechanical engineering, are accredited by the Engineers' Council for Professional Development.

Faculty
Dean: Martin

Aerospace Engineering Department
Chairman: McGhee
Professors: Corin, Dharmarajan, McGhee, Shotts
Associate Professor: Narang

Civil Engineering Department
Emeritus: Capp
Chairman: Chang
Professors: Chang, Chou, Johnson, Krishnamoorthy, Martin, Noorany, Quiet (Associate Dean), Stone, Stratton

Electrical Engineering Department
Emeritus: Walling
Chairman: Chan
Professors: Chan, Learned, Lin, Lodge, Skaar
Associate Professors: Brown, Harris, Mann, Panos
Assistant Professors: Baxhur, Drake, Marino, Stuart

Mechanical Engineering Department
Emeritus: Bauer, Stone
Chairman: Fitz
Professors: Bedore, Fitz, Golding, Hussain, Morgan, Murphy, Ohnysty, Rao
Associate Professors: Craig, Mansfield
Assistant Professor: Bhanap

Offered by the School of Engineering
Master of Science degree in aerospace, civil, electrical and mechanical engineering.

Major with the B.S. degree in aerospace engineering, civil engineering, electrical engineering, mechanical engineering.
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 capabilities toward a 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 Engineer-in-Training examination at the graduate level or, to continue his varied and not of a routine mental or physical character, this program places emphasis on the sciences of broad applicability. Woven throughout the pattern is a continuing study of the best expression as a leader of men, conscious of the social and economic implications of his decisions.

Although the profession of engineering presents in practice a variety of specialties, the undergraduate student initially focuses his attention on a pattern of courses work emphasizing the engineering fundamentals. The student then is able to utilize this knowledge of fundamentals in developing special knowledge in his area of specific interest.

The School of Engineering subscribes to the intent of the statements approved by the Engineering colleges will be given junior level standing if he has successfully completed lower division courses work, upon transfer, that he has completed at least 50 percent of the graduation unit requirements in his major.

Graduation Requirements

1. A minimum of 132 semester units.
2. At least 24 units earned in residence, half of which must be completed among the last 20 units counted toward the degree.
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 School of Engineering.
6. Satisfactory completion of competency tests in mathematics, speech, 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

Each student in Aerospace Engineering includes in his program a basic sequence of courses in fundamental engineering sciences and aerospace engineering. In his junior and senior years, he has the opportunity to select a pattern of courses designed to develop proficiency in an area of specialization. This pattern of courses may be selected from those available in aerospace vehicle design, performance, propulsion, structural analysis and aerodynamics, and is classified as "electives within major." The student's choice of elective courses must be approved by his adviser and his department chairman. The student must also file an approved master plan during the first semester of his junior year.

The requirements for the major in aerospace engineering are described as follows.

Freshman Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Units</th>
<th>Spring Semester</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Chem. 200, 200L, General</td>
<td>5</td>
<td>* Chem. 202, Chem. for Engrs.</td>
<td>3</td>
</tr>
<tr>
<td>Math. 150, Single Variable Calc</td>
<td>2</td>
<td>Math. 151, Calc and Linear Alg</td>
<td>4</td>
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<tr>
<td>Eng. 100, Intro. to Eng</td>
<td>2</td>
<td>Eng. 120, Engr. Prob. Anal</td>
<td>2</td>
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<td>Eng. 100, or Phil. 120</td>
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<td>Eng. 140, Engr. Meas. Anal.</td>
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<td>Biol. 100, Gen. Biology</td>
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<tr>
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Sophomore Year

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<th>Units</th>
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<th>Units</th>
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<tr>
<td>Math. 152, Multivariable Calc</td>
<td>4</td>
<td>Phys. 197, 197L, Principles</td>
<td>4</td>
</tr>
<tr>
<td>Phys. 195, 195L, Principles</td>
<td>4</td>
<td>EE 210, Electric Circuits</td>
<td>3</td>
</tr>
<tr>
<td>EM 260, Engr. Materials</td>
<td>3</td>
<td>Speech Communications 103</td>
<td>2</td>
</tr>
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<td>American Institutions</td>
<td>3</td>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective</td>
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<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.

† Physics 195, 195L, plus Physics 196, 196L, may be taken as equivalent to Physics 196, 196L. See course description before enrolling.
### 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, the student is provided with the opportunity to select a pattern of "professional electives" and may be selected from available courses in foundation, structural, environmental, transportation, or water resources engineering; computer programming; advanced surveying; civil engineering economics; and other areas. The student's choice of elective courses master plan during the first semester of his junior year.

The requirements for the major in civil engineering are described as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Freshman Year</td>
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<tr>
<td>Chem. 200, Gen. or Phil. 120</td>
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</tr>
<tr>
<td>Math. 150, Single Variable Calc.</td>
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</tr>
<tr>
<td>Engr. 100, Intro. to Engr.</td>
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<tbody>
<tr>
<td>Math. 152, Int., Multivariable Calc.</td>
<td>4</td>
</tr>
<tr>
<td>Phys. 196, 198, Principles</td>
<td>4</td>
</tr>
<tr>
<td>EM 260, Engr. Materials</td>
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<tr>
<td>American Institutions</td>
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<th>Junior Year</th>
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<td>Fall Semester</td>
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<tr>
<td>Engr. 310, Methods of Anal.</td>
<td>3</td>
</tr>
<tr>
<td>AE 301, Low Speed Aerodynamics</td>
<td>3</td>
</tr>
<tr>
<td>EM 301, Intro. to Solid Mech.</td>
<td>3</td>
</tr>
<tr>
<td>EM 341, Fluid Mechanics</td>
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<tr>
<td>#Elective Laboratory</td>
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<td>General Education</td>
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<table>
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<tr>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>Engr. 510, Methods of Anal.</td>
<td>3</td>
</tr>
<tr>
<td>AE 302, High Speed Aerodynamics</td>
<td>3</td>
</tr>
<tr>
<td>EM 303, Eng. Aerodynamics</td>
<td>2</td>
</tr>
<tr>
<td>EM 310A, Aero. Struct. An.</td>
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</tr>
<tr>
<td>#Elective Lab.</td>
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</tr>
<tr>
<td>General Education</td>
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<table>
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<th>Senior Year</th>
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<tr>
<td>Fall Semester</td>
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<tr>
<td>AE 310B, Aero. Struct. An.</td>
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<tr>
<td>AE 400A, Aero. Engr. Appl.</td>
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<td>#Electives within major</td>
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<td>General Education</td>
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<table>
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<tr>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>AE 440, Aircraft Stability and Control</td>
<td>3</td>
</tr>
<tr>
<td>AE 460B, Aero. Engr. Appl.</td>
<td>2</td>
</tr>
<tr>
<td>#Electives within major</td>
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<td>General Education</td>
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<td><strong>Total</strong></td>
<td>15</td>
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</table>

### Electrical Engineering Major

**With the B.S. Degree**

All students in Electrical Engineering include in their programs a sequence of courses designed to develop an understanding of the basic principles, laws and methodology of electrical engineering. The student, with the assistance of his adviser, will select electives for the last two years of study with which he will be able to develop proficiency in his area of specialization. This pattern of study is indicated below as "professional electives" and may be selected from available courses in communications, control systems, microwaves, digital systems, power systems, and solid state electronics. The student's choice of elective courses must be approved by his adviser and his department chairman. The student must also file an approved master plan during the first semester of his junior year.

The requirements for the major in electrical engineering are described as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>Freshman Year</td>
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<tr>
<td>Fall Semester</td>
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</tr>
<tr>
<td>Chem. 200, Gen. or Phil. 120</td>
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</tr>
<tr>
<td>Math. 150, Single Variable Calc.</td>
<td>5</td>
</tr>
<tr>
<td>Eng. 120, Intro. to Engr.</td>
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<tr>
<td>ME 190 or ME 191</td>
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</tr>
<tr>
<td>Biol. 100, Gen. Biol.</td>
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<td>P.E. Activity</td>
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<table>
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<th>Spring Semester</th>
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<tbody>
<tr>
<td>Chem. 202, Chem. for Eng.</td>
<td>3</td>
</tr>
<tr>
<td>Math. 151, Calc. and Linear Alg.</td>
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<tr>
<td>Eng. 190, Intro. to Engr.</td>
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<tr>
<td>Eng. 190, Phil. 120</td>
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<tr>
<td>P.E. Activity</td>
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<th>Sophomore Year</th>
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<tbody>
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<td>Fall Semester</td>
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<tr>
<td>Math. 152, Multivariable Calc.</td>
<td>4</td>
</tr>
<tr>
<td>Phys. 196, 196L, Principles</td>
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<tr>
<td>EE 210, Electric Circuits</td>
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<tr>
<td>Speech Communications 103</td>
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<td>American Institutions</td>
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<td>Free Elective</td>
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<table>
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<tr>
<th>Spring Semester</th>
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<tr>
<td>Phys. 197, 197L, Principles</td>
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</tr>
<tr>
<td>EE 210, Electric Circuits</td>
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<tr>
<td>Speech Communications 103</td>
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<tr>
<td>American Institutions</td>
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</tr>
<tr>
<td>Free Elective</td>
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<tr>
<td><strong>Total</strong></td>
<td>17</td>
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</tbody>
</table>

*Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.
†Physics 195, 195L, plus Physics 196, 196L, may be taken as equivalent to Physics 196, 198L. See course description before enrolling.
#Approved as part of the student's master plan.
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 the student is provided with the opportunity to select a pattern of study to satisfy his areas of interest. This pattern of study is indicated in the sequence below as "professional electives" and may be selected from available courses in controls, energy conversion, gas dynamics, heat transfer, machine design, materials, thermodynamics, vibrations, and other areas. The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan by the department chairman.

The requirements for the major in mechanical engineering are described as follows:

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>Engr. 310, Methods of Anal.</td>
<td>3</td>
</tr>
<tr>
<td>EE 310, Network Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EE 330, Fund. Engr. Electronics</td>
<td>3</td>
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<tr>
<td>EE 330L, Engr. Electronics Lab.</td>
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</tr>
<tr>
<td>EE 380, Elect. Energy Conv.</td>
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<tr>
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<tr>
<td>#EE 340, Elect. and Mag. Fields</td>
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<tr>
<td>#EE 370, Logic Des. &amp; Sw. Circ.</td>
<td>3</td>
</tr>
<tr>
<td>EE 420 and EE 420L, Control Systems Components and Lab.</td>
<td>3-4</td>
</tr>
<tr>
<td>EE 410, Adv. Network Analysis</td>
<td>3</td>
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<tr>
<td>EE 430, Anal. &amp; Des. of Elec. Circ.</td>
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<tr>
<td>EE 430L, Electronic Circ. Lab.</td>
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<td>Fall Semester</td>
<td>Spring Semester</td>
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<td>Senior Year</td>
<td>Units</td>
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<tr>
<td>#EE 370, Logic Des. &amp; Sw. Circ.</td>
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<td>General Education</td>
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</table>

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 the student is provided with the opportunity to select a pattern of study to satisfy his areas of interest. This pattern of study is indicated in the sequence below as "professional electives" and may be selected from available courses in controls, energy conversion, gas dynamics, heat transfer, machine design, materials, thermodynamics, vibrations, and other areas. The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan by the department chairman.

The requirements for the major in mechanical engineering are described as follows:

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>Engr. 310, Methods of Anal.</td>
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<tr>
<td>EE 310, Network Analysis</td>
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<tr>
<td>EE 330, Fund. Engr. Electronics</td>
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<tr>
<td>EE 330L, Engr. Electronics Lab.</td>
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<tr>
<td>EE 380, Elect. Energy Conv.</td>
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<td>#EE 340, Elect. and Mag. Fields</td>
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<tr>
<td>#EE 370, Logic Des. &amp; Sw. Circ.</td>
<td>3</td>
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<tr>
<td>EE 420 and EE 420L, Control Systems Components and Lab.</td>
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<tr>
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<td>3</td>
</tr>
<tr>
<td>EE 430, Anal. &amp; Des. of Elec. Circ.</td>
<td>3</td>
</tr>
<tr>
<td>EE 430L, Electronic Circ. Lab.</td>
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Fall Semester

<table>
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<td>15-16</td>
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Junior Year

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<th>Units</th>
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<tr>
<td>3</td>
<td>Chem. 200, 200L, General.</td>
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<tr>
<td>5</td>
<td>Math. 150, Single Variable Calc.</td>
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<td>Engr. 100, Intro. to Engr.</td>
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<tr>
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<td>P.E. Activity</td>
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<tr>
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<td>§Basic Engineering Elective</td>
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<tr>
<td>3</td>
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Sophomore Year

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<tr>
<td>3</td>
<td>Math. 152, Multivariable Calc.</td>
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<td>Phys. 196, 196L Principles</td>
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Junior Year

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<th>Spring Semester</th>
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<tbody>
<tr>
<td>3</td>
<td>Engr. 310, Methods of Anal.</td>
</tr>
<tr>
<td>3</td>
<td>ME 340, Materials and Processes</td>
</tr>
<tr>
<td>3</td>
<td>ME 350, Thermodynamics.</td>
</tr>
<tr>
<td>3</td>
<td>ME 350L, Thermal Sci Lab.</td>
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<tr>
<td>3</td>
<td>ME 496, AT Engr. Design Intro.</td>
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Senior Year

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<tr>
<th>Units</th>
<th>Spring Semester</th>
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<tr>
<td>3</td>
<td>EE 303, Electrons, Instum. and Elect. Energy Conv.</td>
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<tr>
<td>3</td>
<td>ME 312, Engr. Design: Mechanics</td>
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<tr>
<td>3</td>
<td>ME 314, Machine Design, or.</td>
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<tr>
<td>3</td>
<td>ME 470, Heat Transfer.</td>
</tr>
<tr>
<td>3</td>
<td>Professional Electives</td>
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<td>3</td>
<td>General Education</td>
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<td>17</td>
<td>15</td>
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</tbody>
</table>

General Engineering Major

With the B.S. Degree

The major in general 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 School 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, nine units of which must be in upper division courses. The courses must be approved by the Dean of the School of Engineering.

Courses in the minor may not be counted toward the major.

<table>
<thead>
<tr>
<th>Units</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>3</td>
<td>Phys. 196, 196L, plus Physics 196, 196L.</td>
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<tr>
<td>3</td>
<td>EM 220, Engr. Mech. II.</td>
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<tr>
<td>3</td>
<td>Speech Communications 100</td>
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<tr>
<td>3</td>
<td>American Institutions.</td>
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<tr>
<td>2</td>
<td>Free Elective</td>
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</tbody>
</table>

* Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.
† Physics 195, 195L, plus Physics 196, 196L, may be taken as equivalent to Physics 198, 198L. See course description before enrolling.
‡ EE 340 and EE 370 are required courses.
§ Basic engineering electives include: EM 340, ME 350, ME 351, ME 352, ME 390, EM 301 and E 510.
Basic engineering elective laboratories include: EM 302 or EM 341 or ME 350L.
† One unit of advanced laboratory in the option is required.
Engineering

LOWER DIVISION COURSES

100. (5) Introduction to the Engineering Profession (2) I, II Cr/NC
An overview of engineering education and professional practice. An introduction to basic skills useful in acquiring engineering problem-solving capabilities.

150. (10) Control of Man's Environment (3) I, II
Man's interaction with the land, water and air environment; environmental pollution, role of engineering in controlling man's environment. (Formerly numbered Engineering 110.)

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Also Acceptable for Undergraduate Degrees)

450. (192A) Advanced Aerodynamics (2) I, II
Effects of air pollution, sources of pollution, atmospheric chemistry, measurement and instrumentation, automobile development and emissions. (Formerly numbered Engineering 402.)

451. (192B) Land Environment (2) I, II
Man's interaction with the land environment; extraction of natural resources, disposal of wastes; land development, seismic problems related to land usage. (Formerly numbered Engineering 403.)

452. (192C) Water Environment (2) I, II
Man's interaction with the water environment; water quality criteria, water pollution and water reuse. Not open to students in civil engineering. (Formerly numbered Engineering 404.)

456. (196A) Advanced Engineering 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 School of Engineering. Modern developments in engineering. Maximum credit six units for any combination of Engineering 456, 459 and 560.

459. (196B) 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 School of Engineering. Individual study. Maximum credit six units for any combination of Engineering 456, 459 and 560.

540. (151A-151B) Introduction to Aerospace Engineering (3) I, II
Prerequisites: Engineering Mechanics 220 and 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. (Formerly numbered Engineering 390.)

Aerospace Engineering

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

510. (187B) Methods of Analysis (3) I, II
Prerequisites: Engineering 310. Selected topics from vector calculus, partial differential equations, and complex analysis, with engineering applications. (Formerly numbered Engineering 311.)

511. (188) 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. (Formerly numbered Engineering 312.)

310. (187A) Methods of Analysis (3) I, II
Prerequisites: Mathematics 152. Selected topics from ordinary differential equations, the Laplace transform, Fourier series, and linear algebra, with engineering applications. (Formerly numbered Engineering 310.)

420. (170) Intermediate Engineering Problem Analysis (3) I, II
Prerequisites: Engineering 120. Methods of analysis including both the static and dynamic aspects of problems encountered in the flight of aerospace vehicles. (Formerly numbered Engineering 330A-380B.)

310A-310B. (151A-151B) Aerospace Structural Analysis (3-3) I, II
Prerequisites: Engineering Mechanics 301 or credit or concurrent registration in Engineering Mechanics 340 or Mathematics 340B. 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. (Formerly numbered Engineering 306A-306B.)

320. (153A) Aerospace Flight Mechanics (3) I, II
Prerequisites: Engineering Mechanics 220, 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. (Formerly numbered Engineering 390.)
440. (152.) 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. (Formerly numbered Engineering 483.)

460A-460B. (190G-190H.) Aerospace Engineering Applications (2-2) I, II
Six hours of laboratory.
Prerequisites for 460A: Aerospace Engineering 302, 303 and 310A.
Prerequisites for 460B: Aerospace Engineering 480A.
Student projects in aerospace design. (Formerly numbered Engineering 491A-491B.)

496. (196A.) Advanced Aerospace Engineering 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 School of Engineering. Modern developments in engineering. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596.

499. (199.) 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 School of Engineering. Individual study. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

510. (155.) Matrix Methods in Aerospace Structures (3)
Prerequisite: Aerospace Engineering 305B. Static and dynamic analysis of aerospace structures utilizing matrix methods. (Formerly numbered Engineering 587.)

520. (152B.) Intermediate Aerospace Flight Mechanics (3)
Prerequisite: Aerospace Engineering 320. A continuation of Engineering 390 to include orbit determination techniques, general and special perturbations, artificial satellites, rocket dynamics and transfer orbits, earth-moon trajectories, and interplanetary trajectories. (Formerly numbered Engineering 590.)

530. (152.) Aircraft Propulsion Systems (3)
Prerequisite: Aerospace Engineering 301 or Mechanical Engineering 450. Principles of propulsion systems, including reciprocating engines, turbines, and rocket propulsion. (Formerly numbered Engineering 584.)

540. (158.) Aircraft Design and Performance (3)
Prerequisite: Aerospace Engineering 302. Aircraft design and evaluation including choice of airfoil and wing planform, aircraft fuselage design, control surfaces, power plants, and integration of the separate aircraft components. (Formerly numbered Engineering 591.)

596. (166B.) Advanced Aerospace Engineering 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 School of Engineering. Modern developments in engineering. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

Civil Engineering

LOWER DIVISION COURSE

218. (128A.) Surveying for Civil Engineers (3) II
Two lectures and three hours of laboratory.
Prerequisite: Engineering 140.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

321. (120A.) Structural Analysis I (4) I, II
Prerequisite: Mechanical Engineering 301. Introduction to structural analysis. Analysis of frames. Graphical methods, influence lines; deflections; introduction to statically indeterminate structures and moment distribution. (Formerly numbered Engineering 310.)

421. (121.) Reinforced Concrete (3) II
Prerequisite: Civil Engineering 321. Properties and characteristics of reinforced concrete; design of structural components. Introduction to plastic theory and limit design. (Formerly numbered Engineering 410.)

425. (190A.) Civil Engineering Structural Design (3) I
One lecture and six hours of laboratory.
Prerequisites: Civil Engineering 321 and 462. Structural design in steel, methods of reinforced concrete, design of structural components. (Formerly numbered Engineering 411.)

444. (123A.) Water Resources Engineering I (2) I
Prerequisite: Civil Engineering 444. Hydrographs and flood analysis as applied to flood flow determination; multiple regression in hydrologic applications; design of hydraulic systems. (Formerly numbered Engineering 415.)

455. Civil Engineering Environmental Studies (2) I
Prerequisites: Physics 198, 198L and Chemistry 201, 201L, or 202; and credit or concurrent registration in Engineering Mechanics 340.

481. (126.) Transportation Engineering (3) I
Prerequisite: Upper division standing in engineering or in any other area dealing with urban problems.
Function and design of different modes of transportation for moving people and goods, and corresponding terminal facilities. (Formerly numbered Engineering 420.)

482. (127.) Highway Engineering (3) I
Two lectures and three hours of laboratory.
Prerequisites: Civil Engineering 218 and credit or concurrent registration in Civil Engineering 444. Highway planning, economics, and administration; geometric design; traffic engineering; subgrade structure; bituminous and portland-cement concrete pavements. (Formerly numbered Engineering 421.)

496. (166A.) Advanced Civil Engineering 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 School of Engineering. Modern developments in civil engineering. Maximum credit six units for any combination of Civil Engineering 495, 499 and 596.
Electrical Engineering

LOWER DIVISION COURSE

210. (60.) Electric Circuits (3) I, II
Prerequisites: Physics 196, 198L, and Mathematics 151.
Circuit analysis by reduction methods, source transformations, loop and nodal analyses; alternating current circuits, impedance, power and phasor diagrams. (Formerly numbered Engineering 260.)

UPPER DIVISION COURSES

(579.) Theoretical Analysis (3) I, II
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering. Formerly numbered Engineering 579.

330. (101.) 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. (Formerly numbered Engineering 352.)

330L. (101L) Engineering Electronics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 330.
Experimental study of laboratory instruments, diodes, rectifier circuits, filters, silicon controlled rectifiers, tubes, transistors, and amplifiers. (Formerly numbered Engineering 352L.)

340. (102.) Electric and Magnetic Fields (3) I, II
Electrostatic and magnetostatic field theory using vector notation; Coulomb's Law, Gauss' Law and potential theory. Solutions to Poisson's and Laplace's equations; capacitance and inductance. Time-varying electric and magnetic fields; Maxwell's equations. (Formerly numbered Engineering 354.)

370. (176.) Logic Design and Switching Circuits (3) I, II
Prerequisite: Electrical Engineering 330.
Combinational switching networks; introduction to sequential circuits.

380. (106.) Electrical Energy Conversion (3) I, II
Prerequisite: Electrical Engineering 210.
Magnetic circuits, transformers and polyphase AC networks. Fundamentals of electromechanical energy conversion; induction motors, synchronous machines and DC machines. (Formerly numbered Engineering 360.)

380L. (106L) 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. (Formerly numbered Engineering 356L.)

403. (165.) Biomedical Instrumentation (3) I
Prerequisite: Electrical Engineering 303 or 330.
Instrumentation systems to monitor, control and record physiological functions. (Formerly numbered Engineering 465.)

410. (112.) Advanced Network Analysis (3) I, II
Prerequisites: Electrical Engineering 310 and Engineering 310 or Mathematics 340A.
Transient analysis of circuits containing resistance, inductance, and capacity with various input wave forms by means of the Laplace transform method. (Formerly numbered Engineering 361.)

412. (112.) Interactive Computing (3) I, II
One lecture and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 430.
Use of electronic calculators and timesharing terminals for circuit analysis computation and plotting. (Formerly numbered Engineering 462.)

413L. (113L) Analog Computation of Electrical Engineering Problems (3)
Three hours of laboratory.
Prerequisites: Engineering 310, Electrical Engineering 330, and credit or concurrent registration in Electrical Engineering 410.
Use of the analog computer in the solution of typical electrical engineering problems. (Formerly numbered Engineering 354L.)

420. (167.) Control Systems Components (3) I
Prerequisites: Electrical Engineering 310, 330 and 380.
Position transducers, phase-sensitive demodulators, static magnetic and rotating amplifiers, and servo motors. Derivation of component transfer functions. (Formerly numbered Engineering 467.)

420L. (167L) Control Systems Components Laboratory (3) I
Prerequisite: Credit or concurrent registration in Electrical Engineering 420.
Experimental determination of transfer functions for control system components. (Formerly numbered Engineering 467L.)
220 / Engineering/EE

430. (114.) Analysis and Design of Electronic Circuits (3) I, II
Prerequisites: Electrical Engineering 310, 330 and Engineering 310 or Mathematics 340A.
A unified treatment of vacuum-tube and transistor voltage and power amplifiers utilizing graphical
tools and equivalent circuits; feedback theory and tuned amplifiers. (Formerly numbered Engineering 382.)

430L (114L.) Electronic Circuits Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 430.
Vacuum-tube and transistor dynamic characteristics; single stage and multistage amplifier circuits
including feedback and tuned amplifiers. (Formerly numbered Engineering 456.)

450. (137.) Communication Networks (3) I
Prerequisites: Electrical Engineering 310, 340 and Engineering 310 or Mathematics 340A.
Theory and application of transmission lines, including analysis by matrix notation; use of Smith
chart and other transmission line charts; impedance-matching with transmission line stubs and
(Formerly numbered Engineering 465.)

470. (174.) Pulse and Digital Circuits (3) I, II
Prerequisite: Electrical Engineering 430.
Digital circuits, transistors, and integrated circuits in switching systems. Device switching characteristics.
Characterization of commercially available complex-function microcircuits.

472L. (179L.) Switching Circuits Laboratory (1) I
Prerequisite: Electrical Engineering 370 and 470.
Switching diodes, bipolar transistors, FETs, and integrated circuits. Combinational and sequential
switching systems.

496. (196A.) Advanced Electrical Engineering Topics (1-3) I, II
Electrical Standards Committee of the School of Engineering.
- Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and
Modern developments in electrical engineering. Maximum credit six units for any combination of
Electrical Engineering 496, 499 and 596.

499. (199.) Special Study (1-3) I, II
- Prerequisite: Minimum grade point average of 2.0 in engineering or approval of the Academic and
Ethical Standards Committee of the School of Engineering.
- Individual study. Maximum credit six units for any combination of Electrical Engineering 496, 499
and 596.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

520. (168.) Feedback Control Systems (3) I
Prerequisites: Electrical Engineering 420.
Analysis of regulatory systems including servomechanisms by the Laplace transform method.
System performance and stability; Nyquist, Bode, and root-locus diagrams; elementary synthesis
techniques. Practical components and examples of typical designs. (Formerly numbered Engineering
568.)

521. (169.) Advanced Feedback Control Systems (3) II
Prerequisite: Electrical Engineering 520.
A continuation of Electrical Engineering 520 to include feedback compensation, advanced
compensation techniques, signal flow theory, state-variable techniques, introduction to nonlinear and
 sampled-data control systems. (Formerly numbered Engineering 569.)

530. (162.) Transistor Circuit Analysis (3) I, II
Prerequisite: Electrical Engineering 430.
Analysis and design of transistor circuits and power amplifier circuits by use of duality and matrix
methods. Feedback amplifiers, audio amplifiers, video amplifiers, power supplies and oscillators.
Transient analysis and noise considerations. (Formerly numbered Engineering 562.)

534. (164.) Solid-State Devices (3) I
Prerequisite: Electrical Engineering 430.
Conduction theory of solids. Characteristics of tunnel, back-to-back, breakdown, multilayer and
varactor diodes; silicon controlled rectifiers and switches, unijunction transistors, hot electron devices,
Lasers and laser applications. (Formerly numbered Engineering 564.)

540. (139.) Microwave Communications (3) II
Prerequisites: Electrical Engineering 430 and 450.
Applications of Maxwell's equations to wave propagation; skin effect, circuit impedance elements;
vector potential, and other time-varying electrical phenomena; waveguides and resonators, striplines
circuits, electromagnetic radiation. (Formerly numbered Engineering 556.)

540L. (139L) Microwave Measurements Laboratory (1) II
Three hours of laboratory.
Prerequisite: 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 modulation and detection. Microwave
transmission and antennas. (Formerly numbered Engineering 556L.)

545. (135.) Microwave Devices (3) II
Prerequisite: Credit or concurrent registration in Electrical Engineering 540.
Varactor diodes and applications, microwave switches, limiters and phase shifters, detector and
mixer diodes and circuits, avalanche transit-time devices, bulk-effect devices, microwave transistors
and circuits. (Formerly numbered Engineering 567.)

553. (132.) Stochastic Signals (3) II
Prerequisite: Engineering 310 or Mathematics 340A.
Random signals, correlation functions, power spectral densities, the Gaussian process, narrow
band processes. Applications to communication systems.

554. (134.) Communication Principles and Circuits (3) I, II
Prerequisite: Electrical Engineering 430.
Signal transmission in linear networks, modulators and detectors; wide-band and narrow-band
amplifiers; oscillators; AM, FM, and phase modulation; transient response of amplifiers.

554L. (134L) Communication Circuits Laboratory (1) I
Prerequisite: Electrical Engineering 430L.
Regulated power supply systems; oscillator, modulator, detector, and switching circuits.
Superheterodyne receivers and television circuits.

555. (135.) Modulation Theory (3) I
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 coded, and
compound modulation.

570. (175.) Advanced Pulse and Digital Circuits (3) II
Prerequisite: Electrical Engineering 470.
Digital system design using linear elements. Microcircuit amplifiers, sweep circuits, JFETs and
MOS devices, A/D and D/A converters.

571. (177.) Advanced Logic Design and Switching Circuits (3) I, II
Prerequisite: Electrical Engineering 370.
Detailed study of synchronous and asynchronous sequential circuits. Impact of microcircuit
technology on practical logic design.

573. (178.) Computer Organization (3) I, II
Prerequisites: Engineering 120 or Mathematics 107, and Electrical Engineering 370.
Data and information structure, machine and assembly language programming, arithmetic and
control unit microprogramming, memory devices, input-output devices, channels and operating
systems concepts.

580. (193.) Modern Power Systems I (3) I
Prerequisites: Engineering 310, Electrical Engineering 310 and 380.
Modern power system elements; calculus of load flow, fault currents, and system stability.
(Formerly numbered Engineering 550.)

581. (194.) Modern Power Systems II (3) II
Prerequisite: Electrical Engineering 580.
Transient response of modern power system elements; positive, negative and zero sequence
impedance; subharmonic effects. (Formerly numbered Engineering 551.)
Engineering Mechanics

LOWER DIVISION COURSES

200. (50A.) Engineering Mechanics I (3) I, II
Prerequisites: Credit or concurrent registration in Physics 198, 198A, and Mathematics 151.
Static equilibrium of particles and rigid bodies; vector algebra and calculus; friction, virtual work; kinetics of a particle; kinetics of a particle; engineering applications.

220. (50B.) Engineering Mechanics II (3) I, II
Prerequisites: Engineering Mechanics 200 and credit or concurrent registration in Mathematics 152.
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 responses of engineering applications. (Formerly numbered Engineering 250.)

260. (25.) Engineering Materials (3) I, II
Prerequisite: Chemistry 200, 200L
Atomic and molecular structure of materials utilized in engineering. Analysis of the relationships between structure of materials and their mechanical, thermal, electrical, corrosion and radiation properties, together with examples of specific application to engineering problems. (Formerly numbered Engineering 210.)

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

540. (157) Intermediate Fluid Mechanics (3)
Prerequisites: Credit or concurrent registration in Engineering Mechanics 340, and Engineering 310 or Mathematics 340B.
Kinematics of fluid motion. Conservation of mass, momentum, and energy. Ideal and viscous flows and applications. Boundary layer approximations. (Formerly numbered Engineering 583.)

541. (181) Hydrodynamics (3)
Prerequisites: Engineering Mechanics 220, 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 rotational motion, with applications to physical problems. Vector notation will be used. (Formerly numbered Engineering 585.)

596. (196B) 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 School of Engineering. Modern developments in engineering mechanics. Maximum credit six units for any combination of Engineering Mechanics 496, 499 and 596.

596. (196A) Advanced Electrical Engineering 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 School of Engineering. Modern developments in electrical engineering. Maximum credit six units for any combination of Engineering Mechanics 496, 499 and 596.

MECHANICAL ENGINEERING

LOWER DIVISION COURSES

190. (1) Engineering Drawing (2) I, II
Six hours of laboratory.
Development of skills and techniques of drawing for engineers. Elementary orthographic and pictorial drawing theory. Introduction to basic theorems of descriptive geometry. Theories of size description. (Formerly numbered Engineering 150.)

191. (25) Engineering Graphics (2) I, II
Six hours of laboratory.
Prerequisites: Credit or concurrent registration in Mathematics 140 and either Mechanical Engineering 190 or qualification on the Engineering Graphics Placement Examination. Graphic communication for engineers. Presentation and interpretation of engineering plans, using both standard projection systems and freehand sketching. Introduction to nomography; graphic presentation and analysis of data. (Formerly numbered Engineering 151.)

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

312. (145) Engineering Design: Mechanisms (3) I, II
Prerequisite: Engineering 120 and Engineering Mechanics 220.
Design of mechanisms wherein displacement, velocity, acceleration are paramount considerations. (Formerly numbered Engineering 331.)

314. (145A) Elements of Machine Design (3) I, II
Prerequisite: Engineering Mechanics 301.
Application of mechanics, physical properties of materials, and strength of materials to the design of machine elements. (Formerly numbered Engineering 332.)
340. (107) Metallic Materials and Processes (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Engineering Mechanics 250 and Physics 197, 197L.
Physical metallurgy and properties of metals. Influence of processing on the properties of metals. Design criteria for selection of materials. (Formerly numbered Engineering 330.)

350. (108) Thermodynamics (3) I, II
Prerequisite: Mathematics 152.
Laboratory studies of the basic concepts of thermodynamics. Development of the basic laws of thermodynamics from the macroscopic and microscopic viewpoints and their application to engineering systems. (Formerly numbered Engineering 340.)

350L. (108L) Thermal Science Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or 352.
Laboratory study of the basic concepts of thermal science. (Formerly numbered Engineering 304L.)

352. (110) Thermodynamics and Heat Transfer (3) I, II
Prerequisite: Mathematics 152.
First and second laws of thermodynamics; materials, heat conduction, convection and radiation. Not acceptable for mechanical engineering majors. (Formerly numbered Engineering 405.)

410. (161) 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. (Formerly numbered Engineering 444.)

412. (184) Experimental Strain Measurements and Analysis (3)
Two lectures and three hours of laboratory.
Prerequisites: Electrical Engineering 210 and Engineering Mechanics 301.
Laboratory methods for measuring deformation, strains, and forces. Emphasis on instrumentation. (Formerly numbered Engineering 439.)

450. (148) Engineering Thermodynamics (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Engineering Mechanics 340.
Further development of the laws of classical thermodynamics. Applications to energy conversion devices. (Formerly numbered Engineering 436.)

470. (140) Principles of Heat Transfer (3) I, II
Prerequisites: Engineering 310, and Mechanical Engineering 350 or 352.
Heat transfer by conduction, convection, radiation, and combinations thereof; introduction to aerodynamic heating and heat transfer by phase change. (Formerly numbered Engineering 437.)

480. (141) Internal Combustion Engines (3) II
Prerequisite: Mechanical Engineering 450.
Analysis of idealized and real internal combustion engine cycles; combustion problems. Performance of reciprocating and rotary types of internal combustion engines. Principles of reaction motors. (Formerly numbered Engineering 438.)

490A-490B. (190C-190D) Mechanical Engineering Applications (2-2) I, II
Six hours of laboratory.
Prerequisites for 490B: Mechanical Engineering 312, 314, 450 and 490A.
Applications of engineering principles to design of machinery and energy conversion systems. Individual student projects. (Formerly numbered Engineering 444A-444B.)

496. (195A) Advanced Mechanical Engineering Topics (1-3) I, II
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Modern developments in mechanical engineering. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

499. (198) Special Study (1-3) I, II
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Individual study. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

510. (146B) Advanced Machine Design (3) II
Prerequisite: Mechanical Engineering 314.
Advanced topics in strength of materials including energy methods, stress concentrations, curved beams, and thick-walled cylinders. Applications to design of machine elements. (Formerly numbered Engineering 532.)

512. (183) 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. (Formerly numbered Engineering 541.)

520. (147A) Introduction to Mechanical Vibrations (3) I
Prerequisite: 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. (Formerly numbered Engineering 535.)

521. (147B) Vibration, Shock and Noise Measurements (3) II
Prerequisite: Mechanical Engineering 512.
Experimental problems utilizing vibration excitation equipment, recording systems, transducers, sound analysis systems and analog computers. (Formerly numbered Engineering 534.)

530. (189) Automatic Control Systems (3) II
Prerequisites: Engineering 310, Electrical Engineering 303 and Engineering Mechanics 220.
Not open to students filing an electrical engineering master plan.
Analysis of the input-output characteristics of linear, mechanical, electrical, hydraulic, and pneumatic control systems. (Formerly numbered Engineering 535.)

540. (109) Nonmetallic Materials (3) I
Two lectures and three hours of laboratory.
Prerequisite: Mechanical Engineering 340.
Fundamentals of plastics, reinforced plastics, and ceramics. Analysis of effect of physical properties upon selection of a material for use in design. (Formerly numbered Engineering 530.)

560. (143) Gas Dynamics (3) II
Thermodynamics of high velocity compressible fluid flow. Shock regions; adiabatic and diabatic flow. Applications to the propulsive duct and discharge nozzles. (Formerly numbered Engineering 536.)

580. (142) Elements of Energy Conversion (3) II
Prerequisite: Mechanical Engineering 350.
Principles of physics and chemistry applied to the analysis of the broad spectrum of energy conversion devices from an engineering point of view. (Formerly numbered Engineering 537.)

582. (144) Thermal Environmental Engineering (3) II
Prerequisite: Mechanical Engineering 470.

584A-584B. (160A-160B) Principles of Chemical Engineering (3-3)
Same course as Chemistry 500A-500B.
Prerequisites: Credit or concurrent registration in Mechanical Engineering 350 or Chemistry 310A or 410A.
Industial 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. (Formerly numbered Engineering 540A-540B.)

596. (196B) Advanced Mechanical Engineering Topics (1-3) I, II
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Modern developments in mechanical engineering. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596. (Formerly numbered Engineering 533.)
GRADUATE COURSES

For graduate courses in Engineering, Aerospace Engineering, Civil Engineering, Electrical Engineering, Engineering Mechanics, and Mechanical Engineering, refer to the Graduate Catalog.

English

In the College of Arts and Letters

Faculty

Emeritus: Adams, J., Burnett, Gulick, Haskell, Kennedy, Marchand, Phillips, Shouse, Theobald

Director: Moramarco


Associate Professors: Adams, E., Borkel, Bumpus, Chater, Davis, DeMarinis, Farber, Hinkle, Kercher, H., Kohler, McCoy, McLeod, Nelson, Nichols, Patterson, Redding, M., Redding, R., Rohrer, J., Savias, Stehl, Taylor, Thena, Tunberg, Wall

Assistant Professors: Aninger, Blake, Brown, Butler, Genass, Karnath, Kercher, D., O'Reilly, Rogers, Rush, Sheres, Shoja, Sullivan, Wheeler

Lecturers: Denman, Forche, Kim, Olofaye, Smith, Williams

Offered by Literature

- Master of Arts degree in English
- Major in English with the A.B. degree in liberal arts and sciences
- Minor in English
- Teaching major in English for the single subject teaching credential
- Courses in comparative literature. (Refer to this section of the catalog under Comparative Literature.)

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 on page 63 of this catalog. 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.

Preparation for the Major:

- English 101, 260A-260B; six units selected from English 250A-250B, or Comparative Literature 270A-270B; and three units of electives in English. (18 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 "Graduation Requirements" on page 67.

- Major. A minimum of 24 upper division units in English, selected with the approval of the adviser, to include (a) English 533, (b) at least nine units in one of the areas of study listed below, and (c) at least three units in British Literature before 1800, three units in British Literature after 1800, and three units in American Literature. The same course may be used to satisfy requirements under both (b) and (c). 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 510, 511, 512, 513, 514, 516 and 520.
- Modern Literature: English 513, 514, 516, 544, 545, and 546.
- Creative Writing: English 570, 571A-571B, 572, 579, 580, 561, 582, and 589.

- NOTE: In addition to the courses listed above, appropriate sections of English 496, 499, 549, and American Studies 580 may be used to satisfy the requirements for the major if approved by the departmental adviser.

Selection of Courses

- Prospective majors of sophomore standing may, with the consent of the course instructor and subject to general university regulations (see "Credit for Upper Division Courses" in the section of this catalog on General Regulations), substitute six units of upper division electives 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 in English (except English 101) an equivalent number of units of upper division courses selected with the approval of the departmental adviser.

**English Minor**
The minor in English consists of a minimum of 15 units in English, nine units of which must be in upper division courses. The English minor is not available to students majoring in comparative literature.

Courses in the minor may not be counted toward the major.

**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 School of Education.

This major is open to students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the English major for the single subject teaching credential are being revised. For further information consult the department.

**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.

**LOWER DIVISION COURSES**

*General*

100. (5.) **Composition and Reading** (3) I, II
Practice in composition based on the study of outstanding expository writing in contemporary affairs, the sciences, and the arts. Not open to students with credit for Mexican-American Studies 111B.

101. (6.) **Composition and Literature** (3) I, II
Practice in composition, based on the study of representative works of imaginative literature. Introduction to one or more of the major literary genres: poetry, drama, and fiction.

200. (75.) **Intermediate Composition** (3) I, II
Practice in formal composition, based on an analysis of the rhetorical structures of exposition, persuasion, and familiar writing, together with the study of outstanding writing in contemporary affairs, the sciences, the arts, and literature.

210. (54.) **Literary Theory and Criticism** (3) I, II
Introduction to the various theories of literature and approaches to literary creation and criticism.

220. (89.) **Studies in Literature** (1-3) I, II
Representative literary works of a major author, period, genre, theme, or the like. May be repeated with new content. Maximum credit six units.

299. (89.) **Experimental Topics** (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

**AMERICAN LITERATURE**

250A-250B. (53A-53B.) **American Literature** (3-3) I, II
Semester I: Major American writers from the beginning to 1860. Semester II: American literature from 1860 to the present.

260A-260B. (51A-51B.) **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: Ends with the neoclassical period. Semester II: Begins with the Romantic writers.

**COMPARATIVE LITERATURE**

(See page 172)

280. (70.) **Creative Writing** (3) I, II
Introduction to the theory and practice of writing in the major genres, with emphasis on basic concepts and techniques.

281. (71.) **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.

**UPPER DIVISION COURSES**

(Received Primarily for Undergraduates)

**American Literature**

250A-250B. (53A-53B.) **American Literature** (3-3) I, II
Semester I: Major American writers from the beginning to 1860. Semester II: American literature from 1860 to the present.

260A-260B. (51A-51B.) **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: Ends with the neoclassical period. Semester II: Begins with the Romantic writers.

**Comprehensive Literature**

(See page 172)

280. (70.) **Creative Writing** (3) I, II
Introduction to the theory and practice of writing in the major genres, with emphasis on basic concepts and techniques.

281. (71.) **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.

**UPPER DIVISION COURSES**

(Also Acceptable for Advanced Degrees in the Major Area)

500. (175.) **Advanced Composition** (3) I, II
The theory and practice of expository writing, including the contributions of semantics, rhetoric, and logic.

505. (105.) **The Bible as Literature** (3) I, II
(Same course as Comparative Literature 505.)
Prerequisite: Consent of instructor.

507. (150.) **The History of Literary Criticism** (3) I
Principles and practices of literary criticism from Greek times to the nineteenth century.

508. (153.) **Modern Criticism** (3) I
The theory and practice of selected nineteenth and twentieth century critics, with emphasis on the distinctive features of their approaches to literature.

510. (130.) **American Literature** (3) I
American literature from its beginning to 1830.

511. (131.) **The American Renaissance** (3) I, II
Major American writers and their works in the period 1830-1865.

512. (133.) **American Realism and Naturalism** (3) I, II
American fiction from the Civil War to 1920.
513. (134.) Modern American Fiction (3) I, II
American fiction from 1920 to the present.

514. (135.) Modern American Poetry (3) I, II
American poetry from 1865 to the present.

516. (136.) American Drama (3) I, II
Dramatic literature by American writers from its beginnings to the present.

520. (139.) Topics in American Literature (3) I, II
Emerson and Thoreau, Black Writers in America, The Literature of the American South, The Frontier and American Literature, and the like. May be repeated with new content. Maximum credit six units.

British Literature

530. (103.) Chaucer (3) I, II
Chaucer's works, with emphasis on The Canterbury Tales and Troilus and Criseyde.

531. (111.) Renaissance Literature (3) I, II
English poetry and prose from 1485 to 1603.

533. (101.) Shakespeare (3) I, II
An introduction to the writings of Shakespeare.

534. (102.) Study of Shakespeare (3) II
Prerequisite: English 533. Advanced study of Shakespeare's achievement as a poet and playwright.

536. (112.) Seventeenth Century Literature (3) II
English poetry and prose from 1603 to 1660.

537. (104.) Milton (3) II
Milton's works, with emphasis on Paradise Lost.

538A-538B. (113A-113B.) 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. (121A-121B.) Nineteenth Century British Poetry (3-3) I, II

541A-541B. (122A-122B.) Nineteenth Century British Prose (3-3) I, II
Nonfictional prose of the Romantic and Victorian periods.

542A-542B. (123A-123B.) Nineteenth Century British Drama (3-3) I, II
British drama since 1890.

543. (115.) Nineteenth Century British Prose (3) I, II
Nonfictional prose of the Romantic and Victorian periods.

544. (114.) Modern British Fiction (3) I, II
British fiction since 1900.

545. (116.) Modern British Prose (3) I, II
British poetry since 1900.

546. (118.) Modern British Drama (3) I, II
British drama since 1890.

549. (129.) Topics in English Literature (3) I, II
The Works of Spenser, The Metaphysical School of Poetry, The English Satirists, Major Movements in Contemporary English Fiction, and the like. May be repeated with new content. Maximum credit six units.

Comparative Literature

(See page 172.)

Creative Writing

570. (140.) 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. (142A-142B.) 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. (144.) 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.

576. (149.) 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. Maximum credit six units.

580. (170.) 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. (171.) 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. (172.) 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. (179.) 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.

GRADUATE COURSES

Refer to the Graduate Catalog.
European Studies

In the College of Arts and Letters

Faculty

European Studies is administered through the European Studies committee, composed of faculty members from the departments of Anthropology, Art, Classical and Oriental Languages and Literatures, French and Italian Languages and Literatures, Geography, Germanic and Slavic Languages and Literatures, History, Literature, Philosophy, Political Science, and Spanish and Portuguese Languages and Literatures; and the Library. Professor Ernest Wolf is student adviser.

Offered by European Studies

Major in European studies with the A.B. degree in liberal arts and sciences.

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 on page 63 of this catalog.

Preparation for the major.

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 European Studies 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

100-S. European Civilization (3) S

The civilization of Europe through a conducted travel tour. (Formerly numbered Humanities 48-S.)

110. French Civilization (3) I

French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in French 421 or European Studies 310. (Formerly numbered Humanities 42.)

111. French Civilization (3) II

French culture from the Enlightenment to the present. Continuation of European Studies 110. Not open to students with credit in French 422 or European Studies 311. (Formerly numbered Humanities 43.)

120. German Civilization (3) I

The major currents and characteristics of German culture of the Middle Ages and the Renaissance as expressed in literature, art and philosophy. Not open to students with credit in European Studies 320. (Formerly numbered Humanities 44.)

121. German Civilization (3) II

The major currents and characteristics of German culture as expressed in literature, art and philosophy since the Renaissance. Not open to students with credit in European Studies 321. (Formerly numbered Humanities 45.)

125. Russian Civilization (3) I

The major currents and characteristics of Russian culture as expressed through the centuries in literature, art, philosophy and music from the beginnings to early 19th century. Not open to students with credit in European Studies 325. (Formerly numbered Humanities 44.)

131. Russian Civilization (3) II

Modern Russia's cultural development from early 19th century (The Golden Age) to the present. Not open to students with credit in European Studies 331. (Formerly numbered Humanities 53.)

140. Italian Civilization (3) I

The major aspects of Italian civilization with emphasis on literature, art, philosophy, music and history from the earliest times to the Renaissance. Not open to students with credit in European Studies 340. (Formerly numbered Humanities 54.)

141. Italian Civilization (3) II

Continuation of European Studies 140 from the Renaissance to the present. Not open to students with credit in European Studies 341. (Formerly numbered Humanities 55.)

UPPER DIVISION COURSES (Intended Primarily for Undergraduates)

310. French Civilization (3) I

French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in French 421 or European Studies 110. (Formerly numbered Humanities 142.)

311. French Civilization (3) II

French culture from the Enlightenment to the present. Continuation of European Studies 310. Not open to students with credit in French 422 or European Studies 111. (Formerly numbered Humanities 143.)

320. German Civilization (3) I

Investigation of the forces shaping German civilization in the Middle Ages and the Renaissance. Emphasis on history of ideas with reference to their manifestations in the arts and social institutions. Not open to students with credit in European Studies 120. (Formerly numbered Humanities 144.)

321. German Civilization (3) II

Investigation of the forces shaping German civilization since the Renaissance. Emphasis on history of ideas with reference to their manifestations in the arts and social institutions. Not open to students with credit in European Studies 121. (Formerly numbered Humanities 145.)

330. Russian Civilization (3) I

The major currents and characteristics of Russian culture, as expressed through the centuries in literature, art, philosophy and music from the beginnings to early 19th century. Not open to students with credit in European Studies 130. (Formerly numbered Humanities 152.)

331. Russian Civilization (3) II

Modern Russia's cultural development from early 19th century (The Golden Age) to the present. Not open to students with credit in European Studies 131. (Formerly numbered Humanities 153.)

340. Italian Civilization (3) I

The major aspects of Italian civilization with emphasis on literature, art, philosophy, music and history from the earliest times to the Renaissance. Not open to students with credit in European Studies 140. (Formerly numbered Humanities 154.)

341. Italian Civilization (3) II

Continuation of European Studies 340 from the Renaissance to the present. Not open to students with credit in European Studies 141. (Formerly numbered Humanities 155.)

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 Humanities 140.)

400-S. European Civilization (3) S

The civilization of Europe through a conducted travel tour (Formerly numbered Humanities 148-S.)

401A-401B. The Cultural Heritage of Europe I, II (3-3) I, II

The civilization of Europe through a conducted travel tour. (Formerly numbered Humanities 150A-150B.)

402A-402B. The Cultural Heritage of Europe III, IV (3-3) I, II

The civilization of Europe through a conducted travel tour. (Formerly numbered Humanities 151A-151B.)

498. Senior Seminar (3)

Advanced study of an aspect of European studies. May be repeated with new content. Maximum credit six units.
UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees in the Major Area)

580. Seminar: Topics (3)
Special topics appropriate to the interdisciplinary study of Europe. Reading, observation and evaluation of scholarly literature of topic under consideration. May be repeated with new content. Maximum credit six units.

Family Studies and Consumer Sciences
In the College of Professional Studies
A member of the American Home Economics Association

Faculty
Emeritus: Conn, Thomas
Director: Fulcomer
Professors: Cannon, Doris, Fulcomer, Somerville, Warner
Associate Professors: Anderson, Gunning, Josephson, Mine, Price
Assistant Professors: Boggs, Dickerson, Hewes, Kwallek, Martin, K., Martin, M., Mikikia, Ross, Schupp, Wertz
Lecturers: Baker, Hill, Joe, Kripke, Pollock, Richards, Warner, White

Offered by 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. (Refer to the section of this catalog on Interdisciplinary Programs.)
Minor in home economics.
Teaching major in home economics for the single subject teaching credential.

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 on page 63 of this catalog.
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 in the field of dietetics, institutional food management or commercial home economics. A student who successfully completes this program and receives departmental recommendation is eligible to apply for a year of internship under auspices of the American Dietetic Association. Upon completion of an administrative food clinic, or dietetic internship, or a 12-24 months' apprenticeship under a qualified dietitian in a recognized hospital, a student is eligible for membership in the American Dietetic Association and recognition as a qualified dietitian. Additional foods and nutrition careers include extension service, teaching, business, health agencies, and research.

Preparation for the major. Family Studies and Consumer Sciences (Home Economics) 115, 240, 245, Family Studies and Consumer Sciences (Foods and Nutrition) 103, 204; Family Studies and Consumer Sciences (Family Studies and Child Development) 270, Art 101; three units of biology; Business Administration 210A, Chemistry 100, 100L, 130, 130L, 160; Economics 120, Physics 107, 107L, Sociology 101, and Microbiology 210, 249 units.)

Major. A minimum of 37 upper division units to include Family Studies and Consumer Sciences (Foods and Nutrition) 401, 402A, 403, 404, 405, 406, 480; Family Studies and Consumer Sciences (Home Economics) 451, 452, 482; and six units selected with consent of the advisor from Business Administration.

Plan B: Emphasis in Home Economics
Preparation for the major. Family Studies and Consumer Sciences 119, 151, 204, 240, 245; Family Studies and Consumer Sciences (Family Studies and Child Development) 135, 270; Anthropology 101 or 400B or Sociology 101; Art 101; Economics 103 or 121 or 304; Chemistry 100, 100L, 130, 130L, Family Studies and Consumer Sciences 103 is needed for Home Management sequence. Business Administration 210A is needed for the Fashion Merchandising sequence; and Business Administration 231 is needed for Housing and Environmental Factors sequence. (36-39 units.)

Major. A minimum of 36 upper division units selected from one of the core professional sequences listed below.
Home Economics Minor

The minor in home economics consists of a minimum of 18 units in family studies and consumer sciences, six units of which must be in upper division courses. Courses in the minor may not be counted toward the major.

Home Economics Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education. The major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major: Family Studies and Consumer Sciences 103, 119, 151, 204, 240, 245; Family Studies and Consumer Sciences (Family Studies and Child Development) 123, 270; Anthropology 101 or Sociology 101; Art 101; Chemistry 100, 100L, 130, 130L, Economics 103 or 121, (36 units.)

Major: A minimum of 34 upper division units in Family Studies and Consumer Sciences to include 315 or 318 (prerequisite may be waived with approval of adviser), plus three additional units in clothing and textiles; 335 or 371, 343, 345, 384. 400 or 401, 440, 451, 483, 545, 584. 315 or 518 (prerequisite may be waived with approval of adviser), plus three additional units in clothing and textiles; 335 or 371, 343, 345, 384. 400 or 401, 440, 451, 483, 545, 584.

LOWER DIVISION COURSES

101. (101) Food Management and Preparation (3) I, II
One lecture and six hours of laboratory.
Not open to home economics majors and minors.
Planning, preparing and serving nutritionally adequate meals for different income levels, life styles and cultures.

103. (3) Food Science I (3) I, II
One lecture and six hours of laboratory.
Composition and properties of food related to quality characteristics, methods of preparation, evaluation and use of selected foods.

107. Nutrition Today (3) I, II
Obtaining nutritional needs from a varied food supply.
Not open to food and nutrition majors or students with credit in Family Studies and Consumer Sciences 204.

115. (15) Clothing and Textiles (3) I, II
One lecture and six hours of laboratory.
Commercial patterns and their adaptation; fitting and construction; selection and care of textiles.

119. (19) Textiles (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Chemistry 130, 130L; Fibers, yarn, fabric construction, and finishes as related to selection, use, and care.

135. (35) Marriage and Family (3) I, II
Love, maturity, dating, compatibility, conflict as they relate to preparation for successful marriage and family living. Not open to students with credit in Social Welfare 130.
355. Time and Human Resource Management (3) I, II
Analysis of time and human resources with application to the environment.

360. (160.) Fashion Merchandise Analysis (3) I, II
Contemporary problems of production and distribution of textiles and clothing.

361. Fashion Merchandise Practicum (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 317, 360 and consent of program adviser.
Supervised experience in apparel merchandising procedures through a cooperative program with a retail establishment.

371. (171.) Human Development: Early Childhood (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 270 or Psychology 330.
Physical, social, emotional, and intellectual development of the young child with applications for guidance. Observing, recording individual and group behavior of children.

400. (100.) Meal Management and Service (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 103 and 204.
Planning, organizing, preparing, and serving meals with consideration of nutritional needs and the time, energy, and money resources available.

401. (100.) Food Science II (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 103, Chemistry 130, 130L or 201, 201L, and Physics 107, 107L.
Study of the chemical and physical properties of foods; principles underlying preparation of food products of standard quality; relation and interaction of food constituents.

402A. (102.) Advanced Nutrition (3) I, II
Prerequisites: Family Studies and Consumer Sciences 204; one course in biochemistry.
Recommended: Concurrent registration in Family Studies and Consumer Sciences 402B.
Integrated approach to nutrition principles and human nutrient requirements.

402B. Advanced Nutrition Laboratory (3) I, II
Six hours of laboratory.
Prerequisites: Credit or concurrent registration in Family Studies and Consumer Sciences 402A.
Experimental techniques used in nutrition studies.

403. (103.) Quantity Food Production (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 401.
Planning, preparation and service of quantity foods in various food service operations with students working under joint supervision of faculty managers and course instructor.

404. (104.) Food Systems Management (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 403.
Management functions in food service systems.

405. (105.) Experimental Food Science (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 401.
Physical and chemical testing of food materials and processes; review of related literature.

406. (106.) Diet Therapy (3) I
Prerequisite: Family Studies and Consumer Sciences 402A.
Dietary management of pathological and debilitating diseases.

436. The Child, Family and Society (3) I, II
Historical and cross-cultural perspectives on parental roles and societal interventions in childbearing and rearing. Current issues concerning family size, responsibility and institutional aids.

440. (140.) Family Financial Problems and Practices (3) I, II
Prerequisite: Family Studies and Consumer Sciences 240.
Financial problems and practices of families; decision making with respect to market goods and services; consumer protection programs.
508. (108.) Advanced Food Systems Management (3) II
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) Irregular
Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 402A and 402B.
Clinical nutrition problems in the community with consideration of current and potential means of resolving them.

518. (118.) Clothing Design: Flat Pattern (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Problems involving principles and techniques of flat pattern construction. Development of basic sloper for purposes of interpreting new designs. Investigation of sources of inspiration and their relationship to significant trends in design.

519. (119.) Textile Analysis and Testing (3) II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 119 and Chemistry 130, 130L.
Analysis of physical and chemical tests for quality differences due to variation in fibers, content, structure, and finishes and their suitability for specified uses.

520. (120.) Clothing and Human Behavior (3) II
Socioeconomic influences on consumer clothing behavior patterns.

521. (121.) Clothing Design: Draping (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Experiences in creative designing through fabric manipulation. Designer problems related to mass-production techniques.

522. (122.) Clothing Design: Historical Influences (3) I
One lecture and six 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. (136.) Family Study (3) I, II
Prerequisites: Family Studies and Consumer Sciences 135 and Sociology 101.
Insights into the family in a historical context which examines social and psychological factors influencing family life patterns in different cultures, social classes, and ethnic groups.

539. Family Relationships in Literature (3) I, II
Insights through creative literature into the variations in relationships between the sexes and between generations in various cultures and subcultures. Fiction viewed as social documents which reveal changing expectations and ways of coping with stress.

545. (145.) Family Housing (3) II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 245.
Advanced housing problems at various stages of the family life cycle and the different socioeconomic levels.

546. Environmental Factors of Housing (3) I
Prerequisite: Family Studies and Consumer Sciences 545.
Problems of developing effective housing for families in various cultural situations. Investigation of sociopsychological, economic and legislative factors of housing.

553. (153.) Supervised Field Work in Home Management (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 103, 371, 451, 536.
Management and social problems as they relate to the home and family. Supervised field work with various community agencies and selected families.

570. (170.) Human Development: Infancy (3) I, II
Two lectures and three hours laboratory.
Prerequisites: Family Studies and Consumer Sciences 270 or Psychology 330; Psychology 260; Biology 350 recommended.
Physiological, psychological, and social development of the human organism from birth through age two. Two with directed observation and laboratory demonstration with infants.

575. (175.) The Nursery School Program (3) I, II
Prerequisites: Family Studies and Consumer Sciences 371; concurrent registration in Family Studies and Consumer Sciences 575L for one unit only.
Methods, materials, program development, and evaluation of current trends in working with young children.

575L. (175L.) Laboratory Experiences in Nursery School (1-4) I, II
Three hours of laboratory for each unit of credit.
Prerequisites: Family Studies and Consumer Sciences 371; first unit requires concurrent registration in Family Studies and Consumer Sciences 575. 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 four units.

577. (177.) Administration and Supervision in Nursery Schools (3) Irregular
Prerequisite: Family Studies and Consumer Sciences 575L and 575L, 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. (179.) Advanced Child Study (3) I, II
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
Prerequisites: 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.

590. (190.) Advanced Studies in Family Studies and Consumer Sciences (1-6) Irregular
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences.
Advanced study of selected topics. Maximum credit nine units. No more than six units may be applied toward either the bachelor's or master's degree.

GRADUATE COURSES
Refer to the Graduate Catalog.
French

In the College of Arts and Letters

Faculty

Emeritus: Brown
Chairperson: Jackson
Professors: Jackson, Max, Messier, Nelson, Piffard
Associate Professors: Branham, Glasgow
Assistant Professors: Glibert, Palmer, Woodle
Lecturer: Cox

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. Minor in French. Teaching major in French for the single subject teaching credential in foreign languages.

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 on page 63 of this catalog. 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 105A-105B.

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 311A-311B, 321A-321B, 401 or 411 or 431, and nine units of upper division courses in the language.

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.

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 School 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 311A-311B, 321A-321B, 401, 421, 422, 431.

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 of the department.

All upper division courses in French are taught in French unless otherwise noted.

101. (1.) 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. (2.) 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. (3.) Intermediate (4) I, II
Prerequisite: French 102 or three years of high school French. 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. (4.) Intermediate (4) I, II
Prerequisite: French 201 or four years of high school French. Continuation of French 201; outside reading with oral and written reports.

211. (10.) Conversation (2) I, II
Prerequisite: French 102 or three years of high school French. Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays.

212. (11.) Conversation (2) I, II
Prerequisite: French 211 or French 201, or four years of high school French. Continuation of French 211.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Independent Primarily for Undergraduates)

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

311A-311B. (101A-101B) Advanced Grammar and Composition (3-3) I, II
Prerequisites: French 202 and 212.
Advanced grammar and stylistics, intensive writing practice; reports based on outside reading.

321A-321B. (102A-102B) Survey of French Literature (3-3) I, II
Prerequisites: French 202 and 212.
Survey of French literature from the Middle Ages to the present.

331A-331B. (144A-144B) Masterpieces of French Literature (3-3)
French literary masterpieces from the Song of Roland to the present. Taught in English.

340. Intensive French for Reading (3) Cr/Ncr
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 for A.B. majors or minors.)

401. (150) Advanced Phonetics and Diction (3)
Prerequisites: French 202 and 212.
For students and teachers of French wishing to perfect their pronunciation and diction. Current formation of French sounds in isolation and combination. Class exercises, individual drill, and use of special discs and tape recording.
411. (120.) 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. (140.) 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 European Studies 110 or 310.

422. (141.) French Civilization (3)
Prerequisites: French 202 and 212.
French culture from the Enlightenment to the present. Continuation of French 421. Not open to students with credit in European Studies 111 or 311.

431. (143.) Applied French Linguistics (3)
Prerequisites: French 311A-311B.
Phonemics, morphemics, syntax and semantics of present day French.

496. (184.) Topics in French Studies (1-4)
Prerequisites: French 311A-311B (when offered in French).
Topics in French language, literature, culture and linguistics. May be repeated with new content. Maximum credit eight units. Taught in French or English. See class schedule.

499. (199.) Special Study (1-3) I, II
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.
Prerequisite: Consent of staff.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

Prerequisites: French 311A-311B.
The French poetic tradition and its development from the Middle Ages to the present.

511. (117.) Renaissance and Baroque Literature (3)
Prerequisites: French 311A-311B.
Readings from the major writers of the Renaissance and Baroque periods.

521A-521B. (111A-111B.) Seventeenth Century French Literature (3-3)
Prerequisites: French 311A-311B.
Semester I: Major seventeenth century dramatists with emphasis on Racine, Moliere, and Corneille. Semester II: Major works of seventeenth century poets and prose writers.

531A-531B. (107A-107B.) Eighteenth Century French Literature (3-3)
Prerequisites: French 311A-311B.
The works of Voltaire, Rousseau, the Encyclopedists, as well as the theatre and novel of the period. Outside reading and reports.

541. (110A.) Nineteenth Century French Novel (3)
Prerequisites: French 311A-311B.
Major novels of the nineteenth century.

543. (105.) Nineteenth Century French Theatre (3)
Prerequisites: French 311A-311B.
Intensive study of nineteenth century plays.

551. (114.) Twentieth Century French Novel (3)
Prerequisites: French 311A-311B.
Major novels of twentieth century France.

552. (115.) Twentieth Century French Theatre (3)
Prerequisites: French 311A-311B.
Major dramatists of twentieth century France.

GRADUATE COURSES
Refer to the Graduate Catalog.
## Geography Minor

The minor in geography consists of a minimum of 15 units in geography, nine units of which must be in upper division courses. Courses in the minor may not be counted toward the major.

### LOWER DIVISION COURSES

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
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<td>101.</td>
<td>Introduction to Physical Geography</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>102.</td>
<td>Introduction to Cultural Geography</td>
<td>3</td>
<td>Geography 101 or 102</td>
</tr>
<tr>
<td>103.</td>
<td>Introduction to Meteorology</td>
<td>3</td>
<td>Geography 101 or 102</td>
</tr>
<tr>
<td>104.</td>
<td>Introduction to Meteorology Laboratory</td>
<td>1</td>
<td>Geography 101 or 102</td>
</tr>
<tr>
<td>105.</td>
<td>Physical Geography Laboratory</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>151.</td>
<td>Economic Geography</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>154.</td>
<td>Urban Geography</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>170.</td>
<td>Man and the Environmental Problem</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>180.</td>
<td>Basic Map and Aerial Photograph Reading</td>
<td>3</td>
<td></td>
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<tr>
<td>299.</td>
<td>Experimental Topics</td>
<td>1-4</td>
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</table>

### UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>300.</td>
<td>Honors Course</td>
<td>1-3</td>
<td>Honors Program</td>
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<tr>
<td>310.</td>
<td>Historical Geography</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>311.</td>
<td>Principles of Geographical Analysis</td>
<td>3</td>
<td>Geography 101 and 102</td>
</tr>
<tr>
<td>312A-312B</td>
<td>Culture Worlds</td>
<td>3-3</td>
<td>Geography 101 or 102</td>
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<td>320.</td>
<td>California</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>321.</td>
<td>United States</td>
<td>3</td>
<td>Geography 101 or 102</td>
</tr>
<tr>
<td>322.</td>
<td>Canada and Alaska</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>323.</td>
<td>Middle America</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>324.</td>
<td>South America</td>
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<td>Geography 101 or 102</td>
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<td>325.</td>
<td>Geography of San Diego County</td>
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<td>Geography 101 or 102</td>
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<td>330.</td>
<td>Africa, South of the Sahara</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<td>331.</td>
<td>Eastern Asia</td>
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<td>Geography 101 or 102</td>
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<tr>
<td>333.</td>
<td>Southeast Asia</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>334.</td>
<td>Southern Asia</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>335.</td>
<td>North Africa and the Near East</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<td>339.</td>
<td>Europe</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>340.</td>
<td>Soviet Union</td>
<td>3</td>
<td>Geography 101 or 102</td>
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<tr>
<td>336.</td>
<td>Oceania</td>
<td>3</td>
<td>Geography 101 or 102</td>
</tr>
<tr>
<td>350.</td>
<td>Political Geography</td>
<td>3</td>
<td>Geography as it relates to the strength of nations and international relations.</td>
</tr>
</tbody>
</table>
351. (151) Economic Geography: Primary Production (3) I  
Prerequisite: Geography 101 or 102.  
The geography of agricultural production and the extractive industries in relation to world commerce.

352. (152) Industrial Geography (3) II  
Prerequisite: Geography 101 or 102.  
Principles of industrial location, with emphasis on the distribution of the world's major manufacturing regions.

353. (153) Location Analysis and Geographic Theory (3)  
Prerequisite: Geography 101 or 102.  
Spatial arrangement and interrelationships of resources, production, exchange, and consumption of goods and services, and a study of location theory in economic geography.

354. (154) Geography of Cities (3) I, II  
Prerequisite: Geography 102.  
Survey of the location, function and spread of cities; the spatial and functional arrangement of activities in cities, leading to analysis of urban problems: sprawl, city decline, metropolitan transportation. Not open to students with credit in Geography 154.

358. (159) Transportation Geography (3)  
Prerequisite: Geography 101 or 102.  
The spatial distribution of transportation networks and commodity movement and their relationship to the distribution of economic activity.

370. (170) Conservation of Environmental Quality (3) I, II  
Prerequisite: Geography 101 or 102.  
Quality of man's habitat in a changing human and natural environment: water, air and soil pollution, urban crowding, disappearance of open space, and decreasing opportunities for outdoor recreation.

371. (171) Conservation of Natural Resources (3) I, II  
Prerequisite: Geography 101 or 102.  
Nature and extent of mineral, soil, water, forest, and wildlife resources and their conservation, with particular emphasis on the United States against a general background of world resources. Conservation philosophies and practices and their geographic bases.

380. (183) Map Investigation (3) I  
Two lectures and three hours of laboratory.  
Prerequisite: Geography 101 or 102.  
Use of the map as an analytical tool in geography: History of developments in cartography.

381. (181A) Maps and Graphic Methods (3) I, II  
Two lectures and three hours of laboratory.  
Prerequisite: Geography 101 or 102.  
The art and science of creating graphs and maps as media for describing and analyzing geographic phenomena. Laboratory instruction and practice in cartographic techniques with emphasis on presenting quantitative data.

382. (182) Use and Interpretation of Aerial Photographs (3) II  
Two lectures and three hours of laboratory.  
Prerequisite: Geography 101 and consent of instructor.  
Stereoscopic interpretation and cartographic representation of landforms, vegetation, and land use. Emphasis on practical exercises.

400. Environmental Physiography (3)  
Prerequisite: Geography 101.  
Introduction to environmental physiographic dynamics. Assessment of man's role in these dynamics and their effect on urban and rural land use, including such topics as induced erosion, landslides, and flooding.

464. Social Geography (3)  
Prerequisite: Geography 102.  
Analysis of sociocultural distributions with emphasis on social regions, spatial behavior and cultural spatial diffusion processes.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>Geography I</td>
<td>(3)</td>
<td></td>
<td>The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.</td>
</tr>
<tr>
<td>509</td>
<td>Regional Climatology</td>
<td>(3)</td>
<td>Prerequisite: Geography 103.</td>
<td></td>
</tr>
<tr>
<td>554</td>
<td>Quantitative Methods of Urban Analysis</td>
<td>(3)</td>
<td>Prerequisites: Geography 555 or 556, and 555</td>
<td>Spatial models of urban activities and land use, population distribution and allocation, and computer applications in urban analysis, including computer methods of mapping and graphing.</td>
</tr>
<tr>
<td>555</td>
<td>Urban Location and Settlement Geography</td>
<td>(3)</td>
<td>Prerequisite: Geography 154 or 354.</td>
<td>Analysis of urban and other agglomerated settlements in terms of their spatial arrangement, principal functions, economic base, and supporting areas.</td>
</tr>
<tr>
<td>556</td>
<td>Internal Spatial Structure of Cities</td>
<td>(3)</td>
<td>Prerequisite: Geography 154 or 354.</td>
<td>Geographical principles and characteristics concerning the internal structure and functioning of urban centers, including discussions of internal problems of our cities today.</td>
</tr>
<tr>
<td>558</td>
<td>Advanced Transportation Geography</td>
<td>(3)</td>
<td>Prerequisite: Geography 358 or 559.</td>
<td>Topics in the spatial analysis of transportation, e.g., spatial interaction patterns, diffusion process, models in spatial analysis.</td>
</tr>
<tr>
<td>559</td>
<td>Urban Transportation Geography</td>
<td>(3)</td>
<td>Prerequisite: Three units of upper division urban or transportation course work in geography or related field.</td>
<td>Urban transportation networks and their effects, past, present and future, on the economy and physical structure of the urban region.</td>
</tr>
<tr>
<td>566</td>
<td>Environmental Perception and Spatial Behavior</td>
<td>(3)</td>
<td>Prerequisite: Geography 102.</td>
<td>Effects of social and cultural factors on man's perception and cognitive structuring of his spatial and regional physical and social environment.</td>
</tr>
<tr>
<td>570</td>
<td>Urbanization and Quality of the Physical Environment</td>
<td>(3)</td>
<td>Prerequisite: Geography 370 or 371.</td>
<td>Examination of selected problems of maintaining environmental quality in the process of rapid urbanization. Emphasis on field studies.</td>
</tr>
<tr>
<td>573</td>
<td>Geography as Human Ecology</td>
<td>(3)</td>
<td>Prerequisite: Geography 170 or 370.</td>
<td>Human ecology related to resource geography.</td>
</tr>
<tr>
<td>574</td>
<td>Water Resources</td>
<td>(3)</td>
<td>Prerequisites: Geography 101 or 102, and 170, 370 or 371.</td>
<td>Occurrence and utilization of water resources and the problems of water resource development.</td>
</tr>
<tr>
<td>575</td>
<td>Geography of Recreational Land Use</td>
<td>(3)</td>
<td>Prerequisite: Geography 170, 370 or 371.</td>
<td>Importance of location and environment in the use, management, and quality of recreation areas.</td>
</tr>
<tr>
<td>576</td>
<td>Geography of Marine Resources</td>
<td>(3)</td>
<td>Prerequisite: Geography 101 or 102.</td>
<td>Economic geography of use of marine biotic and mineral resources.</td>
</tr>
<tr>
<td>581</td>
<td>Advanced Cartography</td>
<td>(3)</td>
<td>Two lectures and three hours of laboratory.</td>
<td>Advanced laboratory instruction and practice in cartographic techniques.</td>
</tr>
<tr>
<td>582</td>
<td>Automated Cartography</td>
<td>(3)</td>
<td>Two lectures and three hours of laboratory.</td>
<td>Computerized methods in presenting for comprehension spatially variable information of a quantitative nature, examination of existing automated mapping systems.</td>
</tr>
</tbody>
</table>

**GRADUATE COURSES**

Refer to the Graduate Catalog.
Geological Sciences
In the College of Sciences

Faculty
Emeritus: Brooks
Chairman: Berry
Associate Professors: Abbott, Frederiksen, Kern, Placek
Assistant Professors: Bertine, Dorman, Garus, Walawender
Lecturers: Marshall, Schiebout

Offered by the Department
Master of Science degree in geology.
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 on page 63 of this catalog.

The major consists 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) Palaeontology.

Basic Requirements for all Students
Preparation for the major. Geological Sciences 100 and 101, 105, 221, 224; Biology 100 and 101, and Chemistry 200, 200L, 201, 201L. (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, 506. (14 units.) Other courses may be substituted for 498A-498B and 506 in the geophysics option and for 498A-498B in the engineering geology option and for 506 in the marine geology option with the approval of 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 124A-124B and 125A-125B, or Physics 195, 195L, 196, 196L, 197, 197L. Recommended: Chemistry 310A-310B or 410A-410B; Mathematics 107, 151, 152; 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. Electives approved by the departmental advisor to complete 36 upper division units.

(b) Engineering Geology
Additional preparation for the major. Geological Sciences 230; Engineering 140, Mechanical Engineering 190 or 191, Engineering Mechanics 200; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L, and 198, 198L. (35 units.)

Major (continued). Geological Sciences 510 or 512, 528, 550; Civil Engineering 218, 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 School of Engineering will not require of majors in this option the prerequisites specified for Civil Engineering 444, 462 and Engineering Mechanics 301.

(c) Geochemistry
Additional preparation for the major. Chemistry 230, 230L or 231, 231L, 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 526, or Geological Sciences 524 and 525; six units of electives approved by the departmental adviser. Recommended: Geological Sciences 531.

(d) Geophysics

Major (continued). Geological Sciences 510, 512, 520, 521, 530; Mathematics 530; Physics 350B, 357; either Engineering 502 or Electrical Engineering 553 and Mathematics 531; or Physics 350A and 542. Recommended: Civil Engineering 318.

(e) Marine Geology

Major (continued). Geological Sciences 530, 540, 545, and four of the following courses: Geological Sciences 526, 524, 525, 526, 545, 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) Palaeontology

Additional preparation for the major. Biology 215; Mathematics 150, or 121 and 122 (alternative of 121 and 122 should not be selected by students planning academic work beyond the B.S. degree); Physics 124A-124B and 125A-125B, or Physics 195, 195L, 196, 196L, 197, 197L; Zoology 150. (20-25 units.)

Major (continued). Geological Sciences 506, 507, 516 or 573, 526, and three courses from the following: Biology 520, 531; Botany 572; Zoology 506, 510, 560.

Geology Minor
The minor in geology consists of a minimum of 15 units in geology, six of which must be in upper division courses.

The student may consult with the undergraduate adviser for an appropriate program. Courses in the minor may not be counted toward the major.

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.

LOWER DIVISION COURSES

101. (2) General Geology (3) I, II
Earth materials and processes, the development of landforms, and a brief consideration of the history of the earth. Open to all students except those with previous credit in geology.

101. (3) General Geology Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Geological Sciences 100.

Recognition of common earth features and materials with experience in both field and map relationships. Designed to accompany and augment Geological Sciences 100. Not open to students with previous laboratory credit in geology.
105. (5) Historical Geology (4) I, II
Three lectures and three hours of laboratory. Arrangement for field study during the semester.
Prerequisites: Geological Sciences 100 and 101.
Theories of earth origin, and the evolutionary history of the earth as traced through rock and fossil
records. Consideration of the Paleontologic Sequence.
153. (55) General Geology for Engineers (1) I, II
One three-hour laboratory or field project per week.
Earth materials, geologic processes, and methods of geologic interpretation of particular concern
to the engineer. Open only to students majoring in engineering. Not open to students with credit in
Geological Sciences 101.
221. (21) Mineralogy (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Credit or concurrent registration in Geological Sciences 100 and 101; high school
chemistry and trigonometry, or credit or concurrent registration in college chemistry and trigonometry.
Practice in the determination of the common minerals, their geologic environment, utilization and
economic significance.
224. (24) Petrology (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 100 and 101; and credit or concurrent registration in Geological
Sciences 221.
The origin, occurrence, identification, and classification of rocks in hand specimen.
230. (30) Introduction to Geophysics (3) II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 100 and 101; elementary algebra and plane geometry.
Physics of the earth and its application to mineral exploration. Emphasis on case histories. Not open
to students with credit in Geological Sciences 510 or 512.
299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable
to a bachelor's degree in courses under this number of which no more than three units may be
applicable to general education requirements.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

300. (166) Honors Course (1-3) I, II
Refer to Honors Program.
301. Geology of National Parks and Monuments (3) I
Prerequisites: Geological Sciences 100 and 101.
Geology of a group of national parks and monuments, selected for their geologic significance,
scenic beauty, and visitor popularity. (Not acceptable for a major in geology but acceptable for a minor
in geology.)
303. Environmental Geology (3) II
Prerequisites: Geological Sciences 100 and 101.
Study of geologic processes and man, including landslides, flooding, earthquakes, and ground
water resources.
305. (100) Structural Geology (3) I, II
Two lectures and three hours of laboratory per week with occasional field trips.
Prerequisites: Geological Sciences 105 and trigonometry.
Structural features of the earth, both deformed and primary: Mechanical principles, causes of
folding and faulting, graphic solutions and analyses.
308. (108A) Field Geology (4) I, II
One lecture and three hours of laboratory, and twelve Saturday field sessions in the local area.
Prerequisites: Geological Sciences 305 and credit or concurrent registration in Geological
Sciences 224.
Techniques and methods of geologic observation, interpretation, and field mapping.
314. (104) Geomorphology (3) I
Prerequisite: Geological Sciences 105.
Development and classification of landforms with consideration of processes involved.
318-S. (118-S) Summer Field Problems (4-6)
Prerequisites: Geological Sciences 308 and consent of instructor.
Field techniques in the investigation of selected geological problems. This course cannot be
substituted for Geological Sciences 308.
319-S. (119-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. Maximum
credit four units.
496. (196) 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.
Maximum credit six units.
498A. (198A) Senior Thesis (1) I, II Cn/NC
Prerequisite: Credit or concurrent registration in Geological Sciences 308.
Selection and preliminary investigation of an individual research project which will lead to a written
thesis in Geology 498B.
498B. (198B) Senior Thesis (2) I, II
Prerequisites: Geological Sciences 498A and credit or concurrent registration in Geological
Sciences 508.
Individual research project and written thesis.
499. (199) Special Study (1-3) I, II
Individual study in field, library, laboratory, or museum work. Maximum credit four units.
Prerequisites: Acceptable grade average in at least 12 upper division units within the major and
consent of staff.

UPPER DIVISION COURSES

502. (102) 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. (105) Photogeology (3) II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 305 and 314.
Geologic interpretation of aerial photographs, elementary stereopty and stereometry applied to
structural and stratigraphic problems, and preparation of map from annotated aerial photographs.
506. (106) Paleontology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Geological Sciences 105 and 100.
Principles and methods, exemplified by a study of the morphology, classification, habit, and
geologic significance of fossil invertebrates.
Vertebrate Paleontology, see Zoology 560.
507. (107) 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. (108B) Field Geology (4) I, II
One lecture and three hours of laboratory and twelve Saturday field sessions.
Prerequisite: Geological Sciences 308.
Geologic investigation of an assigned area with preparation of an individual report and a geologic
map.
510. (110) Petroleum Geophysics (3) I
Two lectures and three hours of laboratory. Occasional field trips.
Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 195L, 196, 196L, 197,
197L.
Airborne, surface, and bore-hole geophysical techniques as presently used in oil exploration.
518. (116.) Micropaleontology (3) II
One lecture and six hours of laboratory.
Prerequisite: Geological Sciences 506.
The morphology, classification and geologic significance of the various microfossils.

520. (120.) Ore Deposits (3) I
Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.
Geologic relations, origin, distribution, and economics of metallic and nonmetallic mineral deposits.

521. (121.) Petroleum Geology (3) II
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. (124.) 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. (125.) Petrography (4) II
Three 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. (126.) 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. (130.) Geochemistry (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 224; Chemistry 201, 201L and 201, 202, 202L; Mathematics 121 and 122, or 150.
The relationship of basic chemical principles to geologic phenomena and environments, including applications to geologic exploration problems.

531. (131.) Advanced Geochemistry (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 530.
Application of physical-chemical methods and principles to the solution of geologic problems. Emphasis on genesis of ore deposits and pollution geochemistry.

540. (140.) Marine Geology (3) I
Two lectures and three hours of discussion, demonstration, and field work.
Prerequisites: Geological Sciences 105, and either Geological Sciences 224, 314, 502, or 506.
The morphology, composition, structure, history, and geologic processes of the earth beneath the sea.

545. Descriptive Physical Oceanography (3) I, II
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical processes of marine coastal areas and estuaries. Includes longshore currents, rip currents, wave cycles, storms, wind and 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 124A or 195, 195L.
Physical processes of marine coastal areas and estuaries. Includes longshore currents, rip currents, wave cycles, storms, wind and wave generation and forecasting, tidal currents, air-sea interaction, heat and light transmission.

550. (150.) Engineering Geology (3) I
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 308.
Case histories selected to demonstrate the application of geology to the location, design, and maintenance of engineering projects.

551. (151.) Groundwater Geology (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 224.
Geologic factors controlling the occurrence, movement and development of groundwater.

560. (160.) X-Ray Diffraction (2) II
One lecture and three hours of laboratory.
Prerequisites: Chemistry 200, 200L, 201L, 201, 201L; Mathematics 150, Physics 124A-124B and 125A-125B, or 195, 195L; 195, 196L, 197, 197L; and credit or concurrent registration in either Chemistry 310A or 410A, Engineering Mechanics 260, Geological Sciences 221, or Physics 354A.
Theory and application of x-ray diffraction to the study of materials.

573. (173) Advanced Palynology (3) II
One lecture and six hours of laboratory.
Prerequisite: Botany 572.
Investigating problems in anthropology, botany and geology using spores, pollen grains and microplankton.

GRADUATE COURSES
Refer to the Graduate Catalog.
German
In the College of Arts and Letters

Faculty
Emeritus: Walker
Chairman: Kozlik
Professors: Boney, Kozlik, Lawson, Paulin, Schaber, Tanaka, Westervelt, Wolf, Wulbern
Associate Professor: Dunkle
Assistant Professor: Cross

Offered by the Department of Germanic and Slavic Languages and Literatures

Master of Arts degree in German.
Major in German with the A.B. degree in liberal arts and sciences.
Minor in German.
Teaching major in German for the single subject teaching credential in foreign languages.

German 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 on page 63 of this catalog.
Students majoring in German must complete a minor in another field to be approved by the departmental adviser in German.

Preparation for the major, German 101, 102 (or 105 in lieu of 101 and 102), 203, 204, 210, and 211. (20 units.)

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 German to include German 301A-301B and six units selected from 311A-311B, 540; and either 12 units in additional literature courses excluding German 490, 493, 495, or a minimum of three units in additional literature courses and a maximum of nine units in courses in Germanic linguistics.

German Minor
The minor in German consists of a minimum of 15 units in German, six units of which must be in upper division courses.
Courses in the minor may not be counted toward the major.

German 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 School 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 German is required for the degree.

Preparation for the major, German 101, 102 (or 105 in lieu of 101 and 102), 203, 204, 210, and 211. (20 units.)

Major. A minimum of 30 upper division units in German to include 301A-301B, 311A-311B, 403, 505, 510; six units of electives in German; and European Studies 320 or 321.

Proficiency Examination: Before taking a student teaching assignment in German, the candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of Germanic and Slavic Languages and Literatures. The candidate should consult the chairman of the Department.

High School Equivalents

German I 259

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 203. The last year of 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. (1.) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: None. Not open to students who have completed three years of high school German.

102. (2.) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: German 101 or two years of high school German.

105. Elementary (B) I
Eight lectures and two hours of laboratory.
Prerequisite: German 101 or two years of high school German.

203. (3.) Intermediate (4) I, II
Prerequisite: German 102 or 105 or three years of high school German.

204. (4.) Intermediate (4) I, II
Prerequisite: German 203 or four years of high school German.

208. (8A.) Scientific Reading (2)
Prerequisite: German 102 or 105 or three years of high school German.

210. (10.) Conversation (2) I, II
Prerequisite: German 102 or three years of high school German.

211. (11.) Conversation (2) I, II
Prerequisite: German 203 or 210, or four years of high school German.

299. (99.) Experimental Topics (1-4)
Prerequisite: German 210.

UPPER DIVISION COURSES

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

301A-301B. (101A-101B.) Grammar and Composition (3-3)
Prerequisite: German 204 and 211.

311A-311B. (102A-102B.) Survey of German Literature (3-3)
Prerequisite: German 204.

Important movements, authors, and works in German literature from the Reformation to the present.
395. Selected Germanics (3)
One of the Germanic languages or literatures (other than German or English) selected for intensive study. Maximum credit six units in each language.

403. (125A) Advanced Oral and Written German (3)
Prerequisites: German 301A-301B. Advanced forms of oral and written German. (Formerly numbered German 403A.)

490. (144) Golden Age of German Literature (3)
The Classic and Romantic movements in Germany, with emphasis on the late eighteenth century: Goethe, Schiller and their contemporaries. Taught in English.

493. (145) Modern German Literature (3)
Outstanding modern German writers, including Nietzsche, Rilke, Hesse, Kafka, Mann, Brecht, and others. Taught in English.

495. (147) Topics in German Literature (3)
Topics in German literature to be selected by instructor. May emphasize an author, period, movement or genre. Intended primarily for the nonspecialist. Does not fulfill language requirement. May be repeated with new content. Maximum credit six units.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

499. (199) Special Study (1-3) I, II
Individual study. Maximum credit six units. Prerequisites: Fifteen upper division units in the major with an average of B (3.0) or better and consent of instructor.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

505. (148) Applied German Linguistics (3)
Prerequisite: German 301A-301B. Linguistic study of modern German; integration of modern linguistic theory with the language classroom.

510. (150) German Phonetics (3)
Prerequisites: German 204 and 211. Sounds and intonation of German.

515. Germanic Linguistics (3)
Prerequisites: German 204 and 211. Structural and comparative Germanic linguistics.

540. (107) German Literature from Its Beginning to the Reformation (3)
Prerequisites: German 204 and 211. Literature from the eighth century to about 1500.

545A-545B. (103A-103B) German Literature of the Eighteenth Century (3-3)
Prerequisites: German 204 and 211. The literature of the German Enlightenment, the "Storm and Stress," the Classical Age. Outside readings and reports.

549. (115) Goethe's Faust (3)
Prerequisites: German 204 and 211. Goethe's Faust, Parts 1 and 2: its philosophical content and its position in German and European literature; lectures, reading, reports.

555A-555B. (105A-105B) German Literature of the Nineteenth Century (3-3)
Prerequisites: German 204 and 211. The literature of German Romanticism, Young Germany, Realism, and Naturalism. Outside readings and reports.

561A-561B. (110A-110B) Contemporary German Literature (3-3)
Prerequisites: German 204 and 211. The main developments in German literature from Neo-Romanticism to the present. Outside readings and reports.

563. (111) Contemporary German Drama (3)
Prerequisites: German 204 and 211. German drama from Hauptmann to the present.

GRADUATE COURSES
Refer to the Graduate Catalog.
### LOWER DIVISION COURSES
(See also courses in classics.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>202. (2)</td>
<td>Elementary (5) II Continuation of Greek grammar with selections illustrating syntax and style.</td>
</tr>
<tr>
<td>250.</td>
<td>Accelerated Elementary Greek (8) II Not open to students with credit in Greek 101 and 202. Intensive one-semester introduction to ancient Greek, emphasizing basic grammar, vocabulary, syntax. Preparation for Greek 303.</td>
</tr>
<tr>
<td>299. (99)</td>
<td>Experimental Topics (1-4) Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.</td>
</tr>
</tbody>
</table>

### UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>303. (103)</td>
<td>Readings in Greek Prose (3) I Readings selected from Greek masterpieces in history, philosophy, oratory, and New Testament. Authors may include Xenophon, Plutarch, Plato, Lysias, the Evangelists. Emphasis on rapid reading.</td>
</tr>
<tr>
<td>304. (104)</td>
<td>Readings in Greek Poetry (3) II Prerequisite: Greek 303. Readings selected from Greek masterpieces in epic, elegy, tragedy. Authors may include Homer, Sophocles, Euripides.</td>
</tr>
<tr>
<td>450. (155)</td>
<td>Advanced Reading in Greek (3-4) Prerequisite: Greek 304. Extended, intensive reading in a major author of more difficult or peculiar style or content, such as Aeschylus, Thucydides, Herodotus, Aristotle, Sappho, Aristophanes, Lucian. Emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units.</td>
</tr>
<tr>
<td>496.</td>
<td>Topics in Greek Studies (1-4) Topics in Greek language, literature, and linguistics. May be repeated with new content. Maximum credit eight units.</td>
</tr>
<tr>
<td>499. (199)</td>
<td>Special Study (1-3) I, II Individual study. Maximum credit six units. Prerequisite: Consent of instructor.</td>
</tr>
</tbody>
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### Health Science Science

#### Health Science and Safety

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#### 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 on page 63 of this catalog. A minor is not required with this major.

**Emphasis in Community Health**

- **Preparation for the major.** Health Science and Safety 101, 102, 170; Family Studies and Consumer Sciences 204; Psychology 101; Sociology 101; and Zoology 108. (19 units.)

**Major.** A minimum of 36 upper division units to include Health Science and Safety 330, 340, 400, 401, 470, 545, 560, 561, 562, 573, 597; and Biology 362: the remaining units to be selected from health science and safety or closely related fields with approval of the departmental adviser.

**Emphasis in Industrial Safety Education**

- **Preparation for the major.** Health Science and Safety 101, 102, 170; Family Studies and Consumer Sciences 204; Psychology 101; Sociology 101; and Zoology 108. (19 units.)

**Major.** A minimum of 36 upper division units to include Health Science and Safety 330, 340, 351, 352, 353, 354, 400, 545; Psychology 300; Sociology 520; the remaining units to be selected from health science and safety or closely related fields with approval of the departmental adviser.

**Emphasis in Traffic Safety**

- **Preparation for the major.** Health Science and Safety 101, 102, 170; Family Studies and Consumer Sciences 204; Psychology 101; Sociology 101; and Zoology 108. (19 units.)

**Major.** A minimum of 36 upper division units to include Health Science and Safety 330, 340, 347, 348, 349, 350, 400, 545; Biology 362; Psychology 324; the remaining units to be selected from health science and safety or closely related fields with approval of the departmental adviser.

#### Health Science Minor

The minor in health science consists of a minimum of 15 units in health science and safety, nine units of which must be in upper division courses approved by the departmental adviser in health science and safety. Courses to include Health Science and Safety 400 and 102 or 563. Courses in the minor may not be counted toward the major.

#### 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 School 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 and Safety 101, 102, 170; Family Studies and Consumer Sciences 204; Psychology 101; Sociology 101; Zoology 108; and six units selected from one of the following groups: (1) Anthropology 100, 101; (2) Economics 120 and 121; (3) Geography 101, 102; (4) History 105A-105B, 110A-110B, 115A-115B; (5) Political Science 110, 120, 130; (6) Sociology 101, 110, 125 (25 units).

MAJOR
A minimum of 36 upper division units to include Health Science and Safety 330, 400, 470, 520, 545, 574 and 575; six units selected from Health Science and Safety 301, 401, 561 (or Sociology 526), 562 or 573; Biology 362; Psychology 330; and Sociology 440.

In addition, students must complete 15 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.

LOWER DIVISION COURSES

101. (21.) Principles of Healthful Living (2) I, II, S
An application of modern knowledge to the development of understandings, attitudes, and practices essential to healthful living. Fulfills statutory requirement in public safety.

102. (65.) 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.

130. (46.) Standard-Advanced First Aid and Emergency Care (3) I, II
Emergency care for the sick and injured. Provides the essential information, skills and first-aid capabilities required by policemen, firemen, life guards, rescue emergency squad members, industrial safety squad members, teachers, school nurses, ambulance attendants and others interested in emergency care. Red Cross certificate.

170. (29.) Physiology of Reproduction (1) I, II
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.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree. In courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(OMITTED PRIMARILY FOR UNDERGRADUATES)

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

301. (122.) Concepts of Health Science (3) II
Development and application of concepts in individual, family, and community health. Involvement in health project work. Not open to students with credit in Health Science and Safety 101.

311. (171-S) Institute on Current Health Issues (1)
A critical appraisal and analysis of selected contemporary health issues. May be repeated with new content. Maximum credit three units applicable to a bachelor's degree.

320. (150.) Child Health (2) I, II, S
Health status of children with emphasis on identification, prevention and correction of health problems.

321. (151.) Adolescent Health (2) I, II, S
Health status of adolescents with emphasis on identification, prevention and correction of health problems.

330. (146.) Instructor's Course in First Aid (3) I, II, S
Standard Red Cross course for instructors in first aid plus medical-legal problems of emergency care of accident victims. Not open to students with credit in Health Science and Safety 130.
597. (197.) Supervised Field Experience (1-3) I, II
Scientific knowledge appropriate for understanding and practices related to health in later maturity. Designed for those with a personal or professional interest in the field.

575. (175.) Health in Later Maturity (3) I, II
World Health (3) I, II
Health and Medical Care (3) I, II
Prerequisite: Consent of the department chairman. Supervised practical experience in local health agencies and/or schools. Maximum credit six units. Maximum credit three units applicable on a master's degree.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)
510. (154.) Workshop in Health Science and Safety (1-3)
Selected problems in health science and safety are used as a basis for workshop experiences. Maximum credit six units; maximum credit three units applicable on a master's degree.

520. (153.) Administration of the School Health Program (3) II
Administrative responsibilities of the school health program. Principles, policies, and practices involved in health instruction, health services, environment, legal implications, and community relationships.

545. (145.) Safety Education and Accident Prevention (3) I, II, S
Principles of safety and safety education as applied to the home, school, industry, traffic, recreation, and fire prevention.

560. (160.) Introduction to Public Health (3) I, II
Prerequisite: Health Science and Safety 102.
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. (176.) Health and Medical Care (3) I, II
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. (169.) World Health (3) I, II
Prerequisite: Health Science and Safety 102.
Health status of selected populations; international approaches to the attainment of world health. Special emphasis on the work of the World Health Organization.

573. (175.) Health in Later Maturity (3) I, II
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. (172.) Habit-Forming Substances (3) I, II, S
Prerequisite: Health Science and Safety 101 or 301.
Tobacco, alcohol, and other drugs: their use, misuse and abuse.

575. (155.) Sex Education (3) I, II, S
Prerequisite: Health Science and Safety 101 or 301.
Philosophy, current procedures, and materials needed for development of healthy attitudes and scientific knowledge appropriate for the understanding of human sexuality.

597. (197.) Supervised Field Experience (1-3) I, II
Prerequisite: Consent of the department chairman. Supervised practical experience in local health agencies and/or schools. Maximum credit six units. Maximum credit three units applicable on a master's degree.

GRADUATE COURSES
Refer to the Graduate Catalog.
History

In the College of Arts and Letters

Faculty
Emeritus: Nasatir, Ragen, Rohrfeisch
Chairman: Strong
Professors: Appleby, J., Berge, Cox, Cox, Davies, Delteilier, Hanchett, Merril, Munter, Norman, Pinotti, Rader, Ridout, Rutten, Schatz, Smith, R., Starr, Steele, Strong, Sutherland, Weber
Associate Professors: Cheek, Chu, Cunliff, DuFaulx, Dunn, Flemion, J., Flemion, P., Hamilton,
Hodai, O'Brien, Phillips, Smith, C., Sistes, Vanderwood, Vartanian
Assistant Professors: Appleby, A., Bartholowmew, Finer, Heyman, McDean, Oades
Lecturer: Stackelberg

Offered by the Department
Master of Arts degree in history; and a Master of Arts degree for teaching service with a concentration in history.

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 on page 63 of this catalog.

A minor is not required with this major.

Preparation for the major, History 105A-105B, or 110A-110B, or 115A-115B, or 120A-120B, (6 units.)

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 "General Requirements" on page 67.

Major. A minimum of 24 upper division units in history to include History 430 (to be taken in the junior year unless a temporary waiver is granted) and a political continuum. Not open to students with credit for Political Science 120. History 110A-110B may be taken by such students with the consent of the chairman of the History Department.

History Minor

The minor in history consists of a minimum of 15 units in history to include six sequence units in the lower division. Nine units must be in upper division courses, including a year course.

Courses in the minor may not be counted toward the major.

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 School 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 History major for the single subject teaching credential are being revised.

For further information consult the department.

LOWER DIVISION COURSES

105A-105B. (4A-4B) Western Civilization (3-3)
European culture, thought and institutions from ancient times to the present. Semester I: From ancient times through the Renaissance and Reformation. Semester II: Development of modern state and states to the present day.
Course is intended for lower division students; it is preferable that upper division students take History 305A-305B.

110A-110B. (17A-17B) American Civilization (3-3)
Prerequisite: History 110A is prerequisite to History 110B.
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. Ordinarily not open to students with credit for Political Science 120. History 110A-110B may be taken by such students with the consent of the chairman of the History Department.

115A-115B. (8A-8B) 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.

120A-120B. (9A-9B) Asian Civilizations (3-3)
Asian culture, thought and institutions from ancient times to the present. Semester I: Traditional civilizations of Asia, with emphasis on China, Japan and India. Semester II: Development of Asian nations and nationalism in modern times.

See Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended Primarily for Undergraduates)

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

305A-305B. (104A-104B) The Sources of Civilization in the West (3-3)
Prerequisite: Open only to upper division students.
A survey of the most important ideas and attitudes which have shaped Western Civilization since ancient times. Emphasis on cultural themes rather than a political continuum. Not open to students with credit in History 105A-105B. This course satisfies the requirement in Western Civilization but cannot be used to satisfy requirements for the major.

310A-310B. (164A-164B) United States History (3-3)
Survey of major themes, topics and events in American history, 1492 to the present. Semester I: To 1877. Semester II: 1877 to the present.
Designed primarily for social science majors, history minors, and students seeking an upper division elective. History 310A-310B meets all American history and institutions, U.S. Constitution and California state and local government requirements for graduation. Not open to students with credit in History 110A-110B and cannot be used to satisfy requirements for the history major.

315A-315B. (160A-160B) Latin America (3-3)
Semester I: Colonial Period to approximately 1825. Semester II: Republican Latin America. Not open to students with credit in History 110A-110B. Meets field requirement (a) Latin American toward credit in the major.

320A-320B. Sources of Asian Civilizations (3-3)
Topical study of major historic traditions in Asia, with emphasis on ideas and institutions in China, India and Japan. Semester I: Growth of cultural traditions to the 19th century. Semester II: Rise of modern nations. Especially recommended to students entering elementary or secondary education.
Not open to students with credit in History 120A-120B. This course satisfies the requirements for Asian Civilizations but cannot be used to satisfy requirements for the major.

335. (108) History Through Film (3)
Critical analysis of selected historical problems, issues and events, using film as the principal historical document. Maximum credit six units.

425. (102) Great Historians and Historical Literature (3) I, II
Lectures and readings in the history of history and the works of major historians. Open to all upper division students; especially recommended for history and social science majors. Meets field requirement (g) Topical Subjects toward credit in the major.
430. (198.) The Writing of History (3) I, II
Prerequisite: History major or 12 upper division units in history.
Historical method and research in some aspect of history.

496. (180.) Selected Studies in History (3)
Topics in the various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration and capitalism. Maximum credit six units.

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

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

Field (a). Ancient and Medieval

500A-500B. (111A-111B.) Ancient History (3-3)
Semester I: Greece to the Roman Conquest. Semester II: Rome to the 5th Century A.D.

503A-503B. (121A-121B.) Europe in the Middle Ages (3-3)
European social, cultural, and political developments from the fall of Rome to the Renaissance.

504. (122.) The Holy Roman Empire to the Great Interregnum (3)
Prerequisite: History 105A or 503A-503B.
The multinational Holy Roman Empire and its intellectual and social ramifications. Church-state relationships and the development of constitutionalism.

505. (123.) 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.

Field (b). Modern Europe

508. (131.) The Renaissance (3)
The intellectual, artistic, and social transformation of Europe from the 14th through the early 16th century.

509A-509B. (132A-132B.) Early Modern Europe (3-3)
Continental Europe in the 16th and 17th centuries: the religious revolts and religious wars, rise of monarchy, baroque culture, the revolutions in commerce and science. Semester I: The 18th century. Semester II: The 17th century.

510A-510B. (133A-133B.) Europe in the 18th Century (3-3)
The "Old Regime" and the influence of the Enlighntenment and the Enlightened Despots are emphasized. Semester I: The 18th century to 1763. Semester II: Intellectual and social changes in the quarter century before the French Revolution.

511A-511B. (135A-135B.) Europe in the 19th Century (3-3)
Social, political, and economic developments of 19th century Europe.

512A-512B. (137A-137B.) Europe in the 20th Century (3-3)
Political and social developments from 1870 to the present.

513A-513B. (141A-141B.) History of Scandinavia (3-3)
The major political, social, and economic developments in Scandinavia from the Viking Age to the present. Semester I: From the Viking Age to the end of the Napoleonic Wars. Semester II: Modern Scandinavia, 1814 to the present.

514A. (142A.) The French Revolution and Napoleonic Era (3)
Prerequisite: History 105A-105B.
France on the eve of the Revolution, the Great Revolution, 1789-1799, the Napoleonic Era.

514B. (142B.) Modern France (3)
Economic The development of France since 1815.

515A-515B. (143A-143B.) The Iberian Peninsula (3-3)
Survey of Spain and Portugal and their empires, with emphasis on economic, social, and cultural developments. Semester I: From the beginnings to the early sixteenth century. Semester II: From the sixteenth century to the present.

Field (c). United States

516A-516B. (145A-145B.) Central and Eastern Europe (3-3)
Prerequisite: History 105A-105B.
Semester I: Political, social and intellectual study of the various nationalities inhabiting the area from the Baltic to the Aegean Sea. Semester II: Developments since the late 18th century.

517A-517B. (146A-146B.) Germany and Central Europe (3-3)
A social and political history of Germany and Central Europe. Semester I: From the Reformations to 1848. Semester II: From 1848 to the present.

518A-518B. (147A-147B.) 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 19th century. Semester II: Emphasis on the 20th century.

519. (149.) Modern Italy (3)
The development of Italy from 1815 to the present.

520A-520B. (151A-151B.) England (3-3)
Prerequisite: History 520A or 520B.
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.

Evolution of the common law and the development of parliamentary institutions.

522A-522B. (153A-153B.) Tudor and Stuart England (3-3)

523A-523B. (154A-154B.) 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.

Selected problems in European intellectual history beginning with the 17th century, with special attention to social and political thought.

527A-527B. (136A-136B.) Diplomatic History of Modern Europe (3-3)
Prerequisite: History 105A-105B.
Diplomatic relations of the various European states with European and non-European powers. Semester I: From the Congress of Europe (1815) to the Era of Realpolitik in the late 19th century. Semester II: The diplomatic backgrounds and results of two wars.

Field (d). The United States

531A-531B. (171A-171B.) Rise of the American Nation (3-3)
The settlement and development of the British colonies in North America and the American Revolution. Stresses the creation of the American nation through modification of Old World institutions in the new environment.

532A-532B. (172A-172B.) Development of the Federal Union (3-3)
Prerequisite: History 532A is prerequisite to 532B.
Political, cultural, social and intellectual aspects of the Confederation and early national period, the Convention of 1787 and establishment of the Constitution; the administrations of Washington through John Quincy Adams. This year course meets the graduation requirements in American history.

533A-533B. (173A-173B.) Jacksonian Democracy, Civil War and Reconstruction (3-3)
Semester I: Territorial expansion, democratic politics, revolution, and the slavery controversy. Semester II: The Civil War and Reconstruction, emphasizing political affairs and the role of Lincoln.

534. (174.) 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-535B. (175A-175B.) The United States, 1901-1945 (3-3)
The age of reform and the United States as leader of the free world.

536. (176.) The United States in the Nuclear Age (3)
The United States since World War II.
554A-554B. (176A, 176B.) The American Southwest (3-3)

Semester I: Exploration, colonization and development of the Southwest under Spanish and Mexican rule. Emphasis on frontier institutions and Indian policy. Semester II: Anglo-American penetration and acquisition of the Southwest. Themes such as boundary problems, mining, transportation, water, ranching and ethnic relations.

553A-553B. (182A, 182B.) The American Southwest (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.

552A-552B, (181A-181B.) The American Southwest (3-3)

The relationship of Americans to their environment from colonial times to the present with emphasis on how attitudes and values have affected personal behavior and public policy toward the land.

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

551A-551B. (161A-161B.) Mexico (3-3)

Prerequisites: History 115A-115B or 315A-315B


552A-552B. (162A-162B.) History of Brazil (3-3)

Semester I: Colony and empire, 1500-1889, with focus on Portuguese heritage, plantation society, African slavery and its abolition and development of classes and regions. Semester II: The 20th century, with focus on messianism and social banditry, creation of the industrial and military state, Afro-Brazilians, and the conquest and destruction of the Amazonian forest and Indians. Recommended for persons minorin in Portuguese.

553A-553B. (163A-163B.) The Caribbean Area (3-3)

Development of the Caribbean area with emphasis on the 20th century.

554. (164.) The West Coast Nations 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.

557A-557B. (165A-165B.) History of Latin American Popular Culture and Social Thought (3-3)

Examination of the ways Latin Americans have historically viewed their cultures and societies from the dual perspective of elites and the masses.

Semester I: Popular Culture—the Latin American self-image reflected in family relations, folklore, myth, legend, popular music and art and mass expression. Semester II: Intellectual Trends—major themes in intellectual history, with focus on the treatment of social themes in major works of literature, history and sociology.

558A-558B. (167A-167B.) Diplomatic History of Latin America (3-3)

Origins of inter-Americanism: relations among the Latin American nations; the origins and development of the American States; Latin America in World Affairs.

Field (e). South, Southeast and East Asia


Particular, but not exclusive, emphasis on Asian-Western relations. Semester I: Through the 19th century. Semester II: The 20th century.

562. (196B.) 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. (196B.) The Modern Indian Subcontinent (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. (190A-190B.) 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.

566. (192.) Chinese Civilization (3)

Chinese internal history and institutions during the period of relative isolation, religions, philosophy, literature, and the arts.

Field (f). Africa and Middle East

573A-573B. (156A-156B.) History of the Near East from the 7th Century to World War I (3-3)

Prerequisite: History 105A-105B.

Semester I: Medieval Islam from the 7th century A.D. to the rise of the Ottoman Turks. Semester II: The Ottoman Empire to 1914.

574. (157.) The Near East in the Twentieth Century, 1914 to Present (3)

Prerequisite: History 105A-105B.

Analysis of sociopolitical and intellectual developments in the Near East during and after World War I.

575A-575B. (158A-158B.) Africa (3-3)

Semester I: Civilization of precolonial Africa both north and south of the Sahara from the advent of Islam to 1880. Semester II: Colonial and postcolonial Africa.
Field (g): Topical Subjects

Trends and developments in the recent past which can contribute to an understanding of the problems of our age.

582A-582B. (105A-105B) War and Civilization (3-3)
The political and social implications of warfare, of the development of military technologies, and of changing concepts of military organization. Semester I: Through the eighteenth century. Semester II: Napoleonic Wars to the present.

583A-583B. (107A-107B) The Quest for Peace (3-3)
Prerequisite: Six units in history.
Historical analysis of man's efforts to achieve peace from the Greeks to the present.

584A-584B. (107A-107B) Science and Society (3-3)
The historical development of the interaction between science and other aspects of society, including politics, economics, philosophy, religion and technology. Semester I: The rise of modern science. Semester II: Revolutions in scientific thought and 20th century problems in science and society.

596. Selected Studies in History (3)
Topics in the various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration and capitalism. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Catalog.

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.

Offered by the College of Arts and Letters
Courses in humanities:
Major or minor work in humanities is not offered.
All classes are conducted in English.

LOWER DIVISION COURSES

130. (30.) The Jewish Heritage I (3) I
Major Hebraic concepts of the Biblical and post-Biblical periods; their impact on Western civilization and their contemporary relevance.

131. (31.) The Jewish Heritage II (3) II
Major Jewish concepts from medieval through modern times; their impact on Western civilization and their contemporary relevance.

140. (40.) Mythology (3)
Major myths of the world in ancient and modern versions.

157. (57.) Arab-Islamic Culture and Civilization (3)
Interdisciplinary survey of Islamic culture and civilization, emphasizing religious beliefs, their developments, and their role in creating or being integrated with sociopolitical systems of the Islamic Near East from the time of Muhammad to the present.

158. (58.) African Culture and Civilization (3)
An interdisciplinary survey.

201. 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.

202. Humanities in Perspective (3)
Integrated survey of contemporary movements in art, literature and mores, comparing American attitudes with traditional genres, values, and aesthetics.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

357. Islamic Culture and Civilization (3) II
Interdisciplinary analysis of Islam as a religion and as a sociocultural ethic within a multinational framework extending from Morocco to Indonesia.

370. (170.) The Humanities and Modern Man (1) Irregular Cr,NC
Weekly lectures on literature, language, philosophy and cultural history. Reading and reports required of students enrolled for credit. Maximum credit three units.

496. Topics in Humanities (3)
Selected topics in literature and the arts. Comparative themes and critical approaches. May be repeated with new content. Maximum credit six units.

499. (199.) Special Study (1-3)
Individual study. Maximum credit six units.
Prerequisite: Consent of the instructor.
Industrial Arts
In the College of Professional Studies

Faculty
Emeritus: Ford, Lucie, McLoney
Chairman: Marsters
Professors: Anderson, Bailey, Hammer, Iagang, McMullen, Thiel
Associate Professors: Drissen, Guenter, Lybarge, Marsters, McEowen
Assistant Professors: Ferris, Rasmussen, Sorerson
Lecturers: Bussard, Lawrence, Teague

Offered by the Department of Industrial Studies

Master of Arts degree in industrial arts.
Minor in industrial arts with the A.B. degree in applied arts and sciences.
Industrial Arts Major
Teaching major in industrial arts for the single subject teaching credential.

Industrial Arts Minor

The minor consists of 20 units in industrial arts to include Industrial Arts 100, 121, and one lower division and one upper division course in each of two of the following fields: general metalworking, general woodworking, electricity-electronics, transportation, graphic arts, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 488 and 489.

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 on page 63 of this catalog.

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 I, II, III, IV, V, VI, VII, VIII, IX, and X. (18 units.)

A major is required for the Industrial Arts Minor.

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 488 and 489.

Industrial Arts Minor

The minor consists of 20 units in industrial arts to include Industrial Arts 100, 121, and one lower division and one upper division course in each of two of the following fields: general metalworking, general woodworking, electricity-electronics, transportation, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 488 and 489.

Industrial Arts Major

For the Single Subject Teaching Credential

A candidate 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.

LOWER DIVISION COURSES

100. (11.) Orientation to Industrial Arts (2) I, II
Required of all industrial arts majors during their first semester.

105. (15.) 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. (21.) 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. (31.) 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. (40.) Introduction to Photography (3) I, II
Six hours of laboratory.
A consideration of photographic optics and chemistry; nature of light and image formation; photographic emulsions, exposure and development. Composition and lighting. Not open to students with credit in Journalism 150.

151. (51.) General Woodworking (3) I, II
Six hours of laboratory.
Introduction to wood technology and ecology; safe practices; fasteners; adhesives; abrasives; science of working with wood, emphasizing hand tools.

161. (61.) 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 correct use of common hand tools and simple test equipment.

171. (71.) 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. (81.) General Graphic Arts (3) I, II
Six hours of laboratory.
The theory and practice in planning, designing, and processing in the various graphic reproduction activities involving typewriting, stenciling, paper, and other allied materials.

290. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than six units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Independent Primarily for Undergraduates)

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

301. (101.) Industrial Arts Crafts (3) I, II
Six hours of laboratory.
Prerequisite: Previous industrial arts experience.
Emphasis on skills in the industrial arts crafts by laboratory experiences in such areas as plastics, jewelry, leather, and mosaics. Stress on creativity in design and utilization of materials.

305. (105.) Workshop in Instructional Materials (3)
Six hours of laboratory.
Industrial arts laboratory experiences adapted to individual needs; practice in use of tools common to problem solving. Preparation of materials and instructional aids for classroom use. Not open to industrial arts majors.
315. (115.) 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. (121.) 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. (131.) 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. (141.) Intermediate Photography (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 140 or 540.
Exposure theory, sensometry, contrast control, specialized development, distortion and perspective control, and advanced studies of photographic lenses and equipment.

351. (151.) 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. (161.) 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. (171.) Power Systems (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 171.
Power systems to include sources of power, power transmission, and its utilization. Emphasis on the theory of operation, system design, and maintenance procedures.

381. (181.) 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. (102.) 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.

411. (111.) Comprehensive Industrial Arts (3)
Six hours of laboratory.
Individual opportunity to explore each area of the selected industrial arts activities, utilizing a variety of tools, equipment and materials. Not open to industrial arts majors.

416. (116.) Thermoplastics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 315.
Composition and selection of materials; evaluation of physical and mechanical properties of various thermoplastics; special techniques for processing and production of thermoplastics.

422. (122.) Architectural Drafting (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Architectural drafting, primarily in small home planning. Development of drafting skills and understanding of good contemporary home design.

432. (132.) 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. (143.) Advanced Problems in Photography (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Technical problems and techniques in photography.

444. (144.) 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. (152.) 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. (162.) Advanced Electronics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Development of advanced skills with application to industrial electronics. Techniques in the use of electronics test equipment and analysis of electronic devices.

464. (164.) 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. (165.) Analog Computer Fundamentals (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Introduction to electronic analog circuits, with emphasis on instrumentation and measurement techniques.

472. (172.) Power System Diagnosis and Evaluation (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Theory and application of various types of diagnostic testing equipment, with emphasis on trouble shooting and power system analysis.

482. (182.) Advanced Graphic Arts (3)
Six hours of laboratory.
Prerequisite: 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 chairman and instructor.
Supervised experiences in manual arts therapy at various Veterans Administration Hospitals and rehabilitation centers. Students will acquire, through observation and participation, clinical insight and experience in procedures and practices in the field. Two hundred forty hours of clinical training required.

492. (192.) Teaching Methods in Industrial Education (3) I, II
Prerequisite: Admission to Secondary Education Program.
Study of methodology needed to teach industrial subjects. It is recommended that this course be taken prior to student teaching.
280 / Industrial Arts

493. (193.) Industrial Arts Organization and Management (2)
The organization of industrial arts in secondary schools, review of project requirements and methods of developing student participation in personnel management. 

495. (195.) Occupational Orientation (3)
Identifying a wide range of occupations in construction, manufacturing, transportation and communication. Students study the world of occupations, training requirements, entry specifications, levels of employment, salaries, job security, and other related information.

498. (198.) 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. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

503. (103.) 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. (117.) Thermoset Plastics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 315.
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. (123.) Industrial Arts Drawing (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 121. Practice in and analysis of modern industrial drafting techniques and theories.

533. (133.) 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. (140.) 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.

542. (142.) 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. (153.) Woodworking for Teachers (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 351.
Wood finishing, residential building construction techniques, and advanced machine operations.

563. (163.) Industrial Electronics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Advanced problems in industrial electronics circuit development, analysis, theory and application.

573. (173.) Accessory Power Systems (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Study of accessory power systems and technological innovations in the power industries.

583. (183.) Industrial Arts Graphic Arts (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Advanced techniques in developing skills involved in graphic arts facilities.

594. (194.) Recent Trends in Industrial Arts Education (2)
Current trends and practices in the field of industrial arts in secondary education. There will be opportunity for individual work on related problems of interest to members of the class.

596. (196.) Experimental Industrial Arts (1 or 2)
Prerequisite: Consent of instructor.
Individual laboratory work on complex projects on an experimental basis. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Catalog.
Industrial Technology
In the Department of Industrial Studies
In the College of Professional Studies

Faculty
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 on page 63 of this catalog.

This major in industrial technology may be planned with an emphasis in electronics technology, industrial sales, or manufacturing technology.

Emphasis in Electronics Technology
Preparation for the major. Chemistry 100, 100L, 130; Economics 120 and 121; Industrial Arts 115, 121, 131, 140, 161, 171; Mathematics 103, 107, 119, 121, 122, 123, 137; Physics 124A-124B, 125A-125B. (60 units.)

Major. A minimum of 42 upper division units to include Industrial Technology 321, 361, 374, 495, 591 and 594; Industrial Arts 361, 462, 464, 465, 496, 583; and six units of electives selected with the approval of the adviser.

Emphasis in Industrial Sales
Preparation for the major. Business Administration 140; Economics 120 and 121; Industrial Arts 121; Mathematics 103, 107, 119, 120; Physics 124A-124B, 125A-125B, and 15 units selected from Industrial Arts 115, 131, 140, 151, 161, 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 376, 473, 474; Industrial Technology 495, 591, 592, 593, 594; 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 120 and 121; Industrial Arts 121, 161; Mathematics 103, 119, 121, 122, 123, Physics 124A-124B, 125A-125B, and 12 units selected from Industrial Arts 115, 131, 140, 151, 171 and 181. (50 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, 591, 592, 593, 594; 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.

UPPER DIVISION COURSES
(Extended Primarily for Undergraduates)

321. (121.) 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.

323. (123.) Technical Illustration (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Theory and techniques of axonometric projections with emphasis on isometric drawings and their application to technical illustration.

326. (122.) 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. (134.) 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. (154.) Wood Processes and By-Products (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Study of wood by-products manufactured from macerated wood fibers, laminates, dielectric glue equipment and other processes.

361. (161.) 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. (174.) 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. (184.) 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.

418. (118.) Plastic Fabrication and Finishing (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Methods of plastic fabrication, including composite structure and assembly methods in light and heavy industry. Composition of finishes and methods of finishing plastic products and finishing with plastics. (Formerly numbered Industrial Arts 118.)

423. (124.) Technical Illustration (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Theory and application of single- and multiple-point perspectives. Shading and rendering techniques as applied to presentation-type drawings will also be emphasized.

435. (135.) Quality Assurance (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
A study of quality control systems in manufacturing; dimensional, nondestructive and statistical systems are emphasized.

455. (155.) Wood Inspection and Testing (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Macro and micro wood identification, chemical and physical testing of wood and wood-revived products.

485. (185.) 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. (190.) 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.
Industrial Technology

In the Department of Industrial Studies
In the College of Professional Studies

Faculty
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 on page 63 of this catalog.

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 103, 103L, 130, 130L; Economics 120 and 121; Industrial Arts 115, 121, 131, 140, 161, 171; Mathematics 103, 107, 119, 121, 122, 123, 137; Physics 124A-124B, 125A-125B. (60 units.)

Major. A minimum of 42 upper division units to include Industrial Technology 321, 361, 374, 495, 591 and 594; Industrial Arts 361, 462, 464, 465, 498, 563; and six units of electives selected with the approval of the adviser.

Emphasis in Industrial Sales

Preparation for the major. Business Administration 140; Economics 120 and 121; Industrial Arts 121; Mathematics 103, 107, 119, 120; Physics 124A-124B, 125A-125B, and 15 units selected from Industrial Arts 115, 131, 140, 151, 161, 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 376, 473, 474; Industrial Technology 495, 591, 592, 593, 594; a minimum of 18 upper division units in applicable industrial arts and/or industrial technology courses in two 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 120 and 121; Industrial Arts 121, 161; Mathematics 103, 119, 121, 122, 123; Physics 124A-124B, 125A-125B, and 12 units selected from Industrial Arts 115, 131, 140, 151, 171 and 181. (50 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, 384, 395, 591, 592, 593, 594; 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.

UPPER DIVISION COURSES

(Extended Primarily for Undergraduates)

321. (121.) 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.

323. (123.) Technical Illustration (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Theory and techniques of axometric projections with emphasis on isometric drawings and their application to technical illustration.

326. (122.) Commercial Building Layout (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 122.
Theory of light and medium commercial building using concrete, steel and wood construction.

334. (134.) 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. (154.) 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.

361. (161.) 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. (174.) 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. (184.) 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.

418. (118.) Plastic Fabrication and Finishing (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Methods of plastic fabrication, including composite structure and assembly methods in light and heavy industry. Composition of finishes and methods of finishing plastic products and finishing with plastics. (Formerly numbered Industrial Arts 118.)

423. (124.) Technical Illustration (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Theory and application of single- and multiple-point perspectives. Shading and rendering techniques as applied to presentation-type drawings will also be emphasized.

435. (135.) Quality Assurance (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
A study of quality control systems in manufacturing, dimensional, nondestructive and statistical systems are emphasized.

455. (155.) Wood Inspection and Testing (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Macro and micro wood identification, chemical and physical testing of wood and wood revised products.

485. (185.) 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. (190.) 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. (185.) Plant Layout and Material Handling (3)
Study of education and industrial plant layout for expeditious flow of materials.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

591. (191.) 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. (192.) 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. (193.) 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. (194.) Industrial Proposals and Specifications (3)
Research, practice and investigation in the planning and writing of industrial proposals and plant manufacturing systems specifications.

ITALIAN

In the College of Arts and Letters

Faculty
Professor: Vergani, G.
Associate Professor: Vergani, L.
Lecturer: Giuliano

Offered by the Department of French and Italian Languages and Literatures

Minor in Italian

Italian Minor
The minor in Italian consists of a minimum of 15 units in Italian, six units of which must be in upper division courses.

Courses in the minor may not be counted toward the major.

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 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. (1.) 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. (2.) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Italian 101.
Continuation of Italian 101. Not open to students who have completed four years of high school Italian.

201. (3.) Intermediate (4) I, II
Prerequisite: Italian 102.
A practical application of the fundamental principles of grammar. Reading in Italian of cultural material, short stories, novels or plays; oral and written practice.

202. (4.) Intermediate (4) I, II
Prerequisite: Italian 201.
Continuation of Italian 201. Reading of selections from Italian literature.

211. (10.) 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; simple dialogues and plays.

212. (11) Conversation (2) I, II
Prerequisite: Italian 211 or Italian 201, or four years of high school Italian.
Continuation of Italian 211.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.
UPPER DIVISION COURSES
(Extended Primarily for Undergraduates)

300. (166.) Honors Course (1-3)
Refer to Honors Program.

311. (101A.) Advanced Oral and Written Composition (3)
Prerequisite: Italian 202 and 212.
Translation into Italian from moderately difficult English prose. Outside reading of modern Italian prose, with monthly written reports in Italian. Readings and oral discussions in Italian on various facets of Italian life and culture.

321A-321B, (102A-102B.) Survey of Italian Literature (3-3)
Prerequisite: Italian 202.
Important movements, authors and works in Italian literature from the Middle Ages to the present.

331A-331B, (144A-144B.) Masterpieces of Italian Literature (3-3)
Prerequisite: Italian 202.
Works of outstanding Italian writers in English translation. Semester I: From Dante to Machiavelli. The awakening of Italian letters, culminating in the Renaissance. Semester II: Italy in spiritual crisis—the Reformation, Romanticism, Fascism. The search for a national identity from Galileo to contemporary poets and novelists.

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.)

401A-401B, (103A-103B.) Dante and the Divine Comedy (3-3)
Prerequisites: Italian 202 and 212.
The poet, his cultural background, and his political-historical mission.

411A-411B, (104A-104B.) Literature of the Italian Renaissance (3-3)
Prerequisites: Italian 202 and 212.
Literature of the 15th and 16th centuries as presented in the works of Poliziano, Lorenzo de' Medici, Pulci and Board; Machiavelli, Ariosto, Michelangelo, Cellini and Tasso.

496, (185.) Selected Topics (3)
Topics in Italian language, literature, culture and linguistics. Conducted in English or in Italian. See class schedule. Maximum credit six units.

499, (199.) Special Study (1-3) I, II
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.
Prerequisite: Consent of staff.

JAPANESE
In the College of Arts and Letters

Faculty
Lecturer: Ogawa

Offered by the Department of Classical and Oriental Languages and Literatures
Courses in Japanese.
Major or minor work in Japanese is not offered.

LOWER DIVISION COURSES
Native speakers of Japanese will not receive credit for taking lower division courses except with advance approval from the department.

101. (1.) Elementary (4) I
Four lectures and one hour of laboratory. Pronunciation, oral practice, readings on Japanese culture and civilization, minimum essentials of grammar.

202. (2.) Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Japanese 101.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under the number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Extended Primarily for Undergraduates)

303. (103.) Readings in Japanese (4) I
Prerequisite: Japanese 202.
Reading of modern Japanese short stories and essays. Composition and advanced conversation.

304. (104.) Readings in Japanese (4) II
Prerequisite: Japanese 303.
Continuation of Japanese 303 with readings in poetry, mainly Haiku.

496, (185.) Topics in Japanese Studies (1-4)
Topics in Japanese language, literature, culture and linguistics. May be repeated with new content. Maximum credit eight units.

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

In the College of Professional Studies

Member of American Association of Schools and Departments of Journalism

The news-editorial sequence is accredited by American Council on Education for Journalism

Faculty

Emeritus: Julian Wimer
Chairman: Whitney
Professors: Buckalew, Holowach, Odendahl, Sorensen
Associate Professors: Haberstroh, Whitney
Assistant Professors: Spevak
Lecturers: Clayton, Lear, Love

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 on page 63 of this catalog.
A total of 36 units in journalism may be counted for graduation, of which a maximum of 12 lower division units in journalism may apply. A minor is not required with this major.

Emphasis in Advertising

Preparation for the major. Journalism 120 and 150. (6 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in journalism to include Journalism 460, 461, or 463, 466, 480, 500, 502, and six units of electives.

Emphasis in Magazine

Preparation for the major. Journalism 120 and 150. (6 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 326, 441, 443, 502, and nine units of electives selected from Journalism 340, 450, 460, 490 (internship with a magazine), 500 and 529.

Emphasis in Mass Communications

Preparation for the major. Journalism 100, 120 and Sociology 101, 160 and Mathematics 103. (15 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 500 or 508, 502, 503, 505, 522 or 529 and six units of electives.

Emphasis in News-Editorial

Preparation for the major. Journalism 120, 150. (6 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 "Graduation Requirements" on page 67.

Journalism Minor

The minor in journalism consists of 15 units in journalism, nine units of which must be in upper division courses.
Courses in the minor may not be counted toward the major.

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 School of Education.
A major in journalism selected from any one of the emphases in journalism may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

CREDENTIAL REQUIREMENTS. A minimum of 45 units selected from courses in the following content areas:

2. Composition—12 units selected from English 100, 200, 260, 500, 582, Journalism 120, 320, 425, 441, 470, 522, 529.
3. Language—nine units selected from Journalism 326, 443, 460; Linguistics 100, 510, 520, 524; Speech Communication 530, 535.
5. Advising School Publications—four units selected from Journalism 150, 340, 499.
6. Competency in News-gathering and Reporting—two units selected from Journalism 330, 490.

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 326, two semesters enrollment in 330 (minimum of three units), 502, 522 or 529, and nine units of electives selected from 425, 441, 450, 460, 470, 490 (internship with a news medium), 500, 503, 522, 526 and 529.

Emphasis in Photojournalism

Preparation for the major. Journalism 120 and 150. (6 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 450, 451, 470, 475, 502, and six units of electives.

Emphasis in Public Relations

Preparation for the major. Journalism 100, 120, 150. (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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in journalism to include Journalism 460, 470, 480, 481, 485 or 583, 500 or 502, and six units of electives selected from Journalism 320, 485, 490 (internship in public relations), 502, 507, 583.

Emphasis in Radio-TV News

Preparation for the major. Journalism 120 and 150. (6 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in journalism to include Journalism 470, 474, 475, 490 (internship in radio-TV news), 500, 502 and six units of electives.
LOWER DIVISION COURSES

100. (49) Introduction to Mass Communications (3) I, II
The work of mass media, their interrelationships, and the services they perform for society; common problems and responsibilities of the mass media; training and background needed in different media.

120. (51A) News Reporting (3) I, II
One lecture and four hours of laboratory.
Prerequisite: Sophomore standing and ability to type.
Study of reporting techniques, with intensive laboratory practice in gathering, evaluating, and writing the basic types of news stories.

150. (50) News and Feature Photography (3) I, II
One lecture and four hours of laboratory.
An elementary course designed primarily for students of journalism and public relations; experience with professional photographic equipment and film processing; contact and projection printing; emphasis on composition and news value of pictures.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

320. (15B) Advanced News Reporting (3) I, II
One lecture and four hours of laboratory.
Prerequisite: Grade of C or better in Journalism 120.
Intensive laboratory practice in writing the more complex types of news stories. Work includes some reporting for the campus newspaper, The Daily Aztec.

326. (151) News Editing (3) I, II
One lecture and four hours of laboratory.
Prerequisite: Journalism 320.
Editing copy, writing headlines, making up pages, handling telegraph copy.

330. (192) Newspaper Production (1-3) I, II
Three hours of laboratory required for each unit. Total credit in Journalism 330 and 340 limited to six units.
Prerequisite: Journalism 320.
Special work in journalism by arrangement with the instructor. Includes reporting, editing, taking and processing pictures, working with the printer, proofreading in production of The Daily Aztec.

340. (193) Magazine Production (3) I, II
One lecture and four hours of laboratory. Total credit in Journalism 330 and 340 limited to six units.
Special work in yearbook and magazine production by arrangement with the instructor. Includes editing and photographic work on campus magazines.

425. (105) Editorial Writing (3)
One lecture and four hours of laboratory.
Principles and policies of editorial composition for mass communications media.

441. (101) Magazine Article Writing (3) I, II
One lecture and four hours of laboratory.
Production of articles and marketing of at least one article emphasized.

443. (103) Magazine Editing (3)
Mechanics of the editorial process in magazines, with emphasis on industrial and business publications; selection and preparation of editorial material; picture selection, cropping, captioning, graphic production processes; layout, preparation of dummies; special purpose booklets and magazines.

450. (150) Advanced News and Feature Photography (3)
One lecture and four hours of laboratory.
Prerequisite: Journalism 150.
Techniques for achieving the technical and story-telling quality in photojournalism.
490. (191.) Internship in Journalism (1-3) I, II
Prerequisites: Journalism 320 or 460 or 470, or 120 and 481. Prerequisite must be consistent with
the nature of the internship.
Prearranged and supervised work on local magazines, city and county newspapers, radio and
television stations, and on public relations, publicity, and advertising staffs of civic and business
groups. Maximum credit six units with no more than three units in any one semester.

496. Experimental Topics (1-3)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable
to a bachelor's degree in courses under this number of which no more than three units may be
applicable to general education requirements.

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

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

500. (121.) Current Problems in Mass Communications (3) I, II
Forces affecting American mass communications today: Government restrictions, economics,
pressure groups, censorship, mechanical developments, interrelationships of the media and society;
professional ethics.

502. (102.) Law of Mass Communications (3) I, II
Libel, defamation, privacy, censorship, advertising laws, postal regulations, and constitutional
guarantees affecting press, radio, television; rights and responsibilities of communicators in reporting
public affairs.

503. (117.) History of Mass Communications (3)
American journalism from colonial times to the present, with special attention to radio and other
mass media which have entered the news and entertainment field; the relation of their development
to society.

505. (118.) The Foreign Press (3)
The four theories of the press. Flow of international news. Analysis of the foreign media. Problems
of propaganda, governmental control, language, and economic support.

507. (122.) Public Opinion Measurement (3)
(Same course as Psychology 342)
The history, methods and problems of public opinion and attitude measurement. Emphasis will be
placed upon the polling of consumers and voters. Students will be given field experience.

508. (182.) Mass Communications and Society (3)
Prerequisite: Sociology 101.
Social factors underlying nature, functions of mass media. Theories, models, research in media as
culture carriers, as opinion shapers, and in relation to government.

509. (177.) Research Methods in Mass Communications (3)
Prerequisite: Sociology 160.
Investigates tools and methods of mass media; content analysis, readership studies, audience
measurement, experimental designs, and representative studies.

522. (144.) Reporting of Public Affairs (3)
Prerequisite: Journalism 320.
Coverage of the city hall, courthouse, police headquarters, federal agencies, courts, and other
public and political centers.

526. (155.) Advanced Editing Techniques (3)
One lecture and four hours of laboratory.
Prerequisite: Journalism 326.
Principles of typography, page layouts, and use of pictorial material; selection, evaluation, editing,
and display of news.

529. (197.) Investigative Reporting (3)
One lecture and four hours of laboratory.
Prerequisite: Journalism 320.
Development of articles of substance and depth in specialized fields. Research, analysis, and
interpretation of complex issues in the news. Maximum credit six units.
Latin

In the College of Arts and Letters

Faculty
Professors: Sutherland, Warren
Associate Professors: Eisner, Genovese

Offered by the Department of Classical and Oriental Languages and Literatures

Major and minor work in Latin is offered under classics. (Refer to this section of the catalog on Classics.)

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 Latin may be counted as the equivalent of Latin 101, three years the equivalent of Latin 202. 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
(See also courses in Classics.)

101. (1.) Elementary (5) I
Introduction to Latin, emphasizing grammatical foundations of classical prose. Aimed toward rapid comprehension. Not open to students who have completed three years of high school Latin.

202. (2.) Elementary (5) II
Prerequisite: Latin 101.
Continuation of Latin grammar with selections illustrating syntax and style. Not open to students who have completed four years of high school Latin.

250. Accelerated Elementary Latin (6) II
Not open to students with credit in Latin 101 and 202.
Intensive one-semester introduction to Latin, emphasizing basic grammar, vocabulary, syntax. Preparation for Latin 303.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

303. (103.) Readings in Latin Prose (3) I
Prerequisite: Latin 202.
Readings selected from classical Latin masterpieces in history, philosophy, oratory, letters. Authors may include Sallust, Cicero, Pliny the Younger. Emphasis on rapid reading.

304. (104.) Readings in Latin Poetry (3) II
Prerequisite: Latin 303.
Readings selected from classical Latin masterpieces in epic, lyric, elegy, comedy. Authors include Vergil, Catullus, Ovid, Plautus.

440. (107.) Late Latin (3)
Prerequisite: Latin 202.
Selections from authors ranging from Tertullian and St. Augustine to Erasmus and Milton. The changes in Latin throughout the centuries.

450. (155.) Advanced Reading in Latin (3-4)
Prerequisite: Latin 304.
Extended, intensive reading in a major author of more difficult or peculiar style or content, such as Lucretius, Caesar, Tacitus, Livy, Terence, Horace, Propertius, Petronius, Juvenal. Emphasis on style, content, interpretation. Maximum credit nine units.

496. Topics in Latin Studies (1-4)
Topics in Latin language, literature, and linguistics. May be repeated with new content. Maximum credit eight units.

499. (199.) Special Study (1-3) I, II
Individual Study. Maximum credit six units.
Prerequisite: Consent of instructor.
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 Ernst C. Griffin 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.

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 on page 63 of this catalog.

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, 203, 204, 210, 211 or Spanish 101, 102, 203, 204, 210 and 211 with a minimum grade point average of 2.0 for all work attempted (20-22 units). 12 units selected from Anthropology 101, Economics 120 and 121, Geography 101, History 115A-115B, Latin American Studies 120, Political Science 110 and 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 "Graduation Requirements" on page 67.

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 student will file with the Evaluations Office a master plan approved by the adviser for the Latin American Studies curriculum.


LOWER DIVISION COURSE
120. Latin American Heritage (3)
Introduction to Latin American cultures and peoples from an interdisciplinary perspective.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)
580. Special Topics (1-4)
Prerequisite: Six upper division units in Latin American content courses. 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. Maximum credit eight units.
Linguistics
In the College of Arts and Letters

Faculty
Chancellor: Drake
Chairman: Drake
Professors: Frey, Tidwell
Associate Professors: Donahue, Drake, Senght
Assistant Professors: Elgin, Underhill
Lecturer: Webb

Offered by the Department
Master of Arts degree in linguistics.
Minor in linguistics with the A.B. degree in liberal arts and sciences.
Minor in linguistics.

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 on page 63 of this catalog.
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, demonstration of a reading competence in a second language is required.
Competence is normally demonstrated by a passing score on the Modern Language Association Language Test.

Preparation for the major. Linguistics 100. (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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units to include at least 15 units from linguistics; at least 9 units selected from Afro-American Studies 360, 362, 363; American Studies 501; Anthropology 304, 510, 511; French 401, 431; German 506, 510, 515; Journalism 508, 509; Philosophy 521, 522, 531; Russian 570, 580, 581; Sociology 422, 424, 440, 512, 525, 548, 557; Spanish 548, 549; Speech Communication 391, 496 (when applicable). 530, 535; Speech Pathology and Audiology 305; Substitutions may be made at the discretion of the Undergraduate Adviser.

Minor in Linguistics
The minor in linguistics consists of a minimum of 15 units selected from the following, nine units of which must be from linguistics: Linguistics 100, 496, 500, 510, 520, 524, 550, 551, 552; Anthropology 510; Philosophy 531.

Courses in the minor may not be counted toward the major.

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; Applied studies selected from Linguistics 524, 550, 551, 552; three units of electives selected from linguistics, Afro-American studies, anthropology, Asian studies, education, Jewish studies, Mexican-American studies, Native American studies, psychology, speech pathology and audiology, women's studies, or university studies; and 15 hours in one-to-one tutoring practicum.

Refer to the Graduate Catalog for information on the advanced certificate.

LOWER DIVISION COURSES

100. (65.) Language Study (3) I, II
Introduction to the principles and practice of modern linguistics as applied to the study of English.
Mathematics

in the College of Sciences

Faculty
Emeritus: Clark, Eagle, Harris, Lemme
Chairman: Deaton
Professors: Becker, Branstetter, Bray, Burton, Deaton, Drobnies, Fountan, Garrison, Ginder, Harvey, Ho, Holmes, Moses, Rigg, Salz, Shaw, Short, Smith, Van de Wetering, Warren, Wierdinger
Associate Professors: Bryant, Burdick, Davis, Eckberg, Elvin, Hegar, Howard, Kopp, Lesley, Lopez, Macky, Marcus, Maroz, Nover, Park, Romano, Ross, Viline, Whitman
Assistant Professors: Baase, Carpenter, Flanagan, Heidn, Hintzman, Korvaar, McLeod, Salomon, Sel, Vingo.

Offered by the Department
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 A.B. degree in applied arts and sciences.
Minor in mathematics.
Teaching major in mathematics for the single subject teaching credential.

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 on page 63 of this catalog. 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work, including Mathematics 520, 521A and 534A and one two-semester sequence chosen from the following: Mathematics 521A-521B, 521A and 573, 530 and 531, 534A-534B, 534A and 535, 541A-541B, 550 and 551A, 550 and 553, 570 and 572.

Mathematics 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 on page 63 of this catalog.
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.

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work, including Mathematics 520, 521A, 534A, and one two-semester sequence chosen from the following: Mathematics 521A-521B, 521A and 573, 530 and 531, 534A-534B, 534A and 535, 541A-541B, 550 and 551A, 550 and 553, 570 and 572.

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 or applied 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 330A or 551A, 520, 521A, 530, 534A, 534B, 541A; and 15 units selected from Mathematics 330B or 551B, 531, 532, 541B, 550, 570, 572, or any 598 which has been approved by the Applied Mathematics adviser.

Auxiliary Area. A minimum of 12 units from an area to which mathematics may be applied. A typical program might be Physics 195, 195L, 196, 196L, 197, 197L, or Chemistry 200, 200L, 201, 202L, and a course for which these are prerequisite, or Biology 100, 100L, and courses for which these are prerequisite, or Economics 120 and 121, 324, 325. The intent is to train the student in an area in some depth. Some latitude may be allowed in the choice of department and mix of courses, but all programs must be approved by the Applied Mathematics adviser. The 12-unit requirement is minimal, and a minor in an approved field is highly recommended.

Emphasis in Statistics

Preparation for the major. Mathematics 150, 151 and 152. (13 units.)

Major. A minimum of 24 upper division units in mathematics to include Mathematics 520, 534A, 550, 551A, 551B, nine additional units selected with the approval of the adviser from mathematics or closely related areas.

Mathematics Minor

The minor in mathematics consists of a minimum of 21 units in mathematics, to include in the lower division Mathematics 150 and 151 or Mathematics 121, 122 and 123 and in the upper division, nine units in mathematics with not more than three units selected from 301, 302, 310A, 309A.

Courses in the minor may not be counted toward the major.

Mathematics 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 School of Education. This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in either liberal arts or applied arts and sciences.

The requirements for the mathematics major for the single subject teaching credential are being revised. For further information consult the department.
Mathematics Placement Examinations

All students who expect to enroll in Mathematics 103, 104, 119, 120, 121, 140 or 150 and have not completed prerequisite courses at San Diego State University must take the mathematics placement tests. These tests may be used to satisfy all or part of the prerequisite requirements for these courses and they also serve as a basis for the selection of students for the mathematics honors program. The schedule for these examinations will be posted on the mathematics bulletin board. Provision is also made for these examinations to be taken by the entering freshman or the transfer student prior to registration. Refer to the catalog.

LOWER DIVISION COURSES

103. (3) Intermediate Algebra (3 I, II CR/NC
Prerequisite: One year of elementary algebra.
Review of elementary algebra, exponents, radicals, logarithms, quadratic equations, arithmetic and geometric progressions. Not open to students with credit in Mathematics 119 or higher-numbered courses.

104. (4) 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.

107. (7) 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 programs; flowcharts. Extensive programming of problems on the computer.

118. (16) Introduction to Mathematics (3) I, II
Prerequisites: Two years of high school mathematics.
Topics from logic, modern algebra, and analysis designed to give the student an introduction to the structure of mathematical theories and their applications. Not open to students with credit in Mathematics 140 or higher-numbered courses.

119. (19) Elementary Statistics (3) I, II
Two lectures and two hours of laboratory.
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.

120. (20) Mathematics for Business Analysis (3) I, II
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.
Basic mathematics for business students, including topics from finite mathematics and calculus.

121. (21) Mathematical Analysis I (3) I, II
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.

122. (22) Mathematical Analysis II (3) I, II
Prerequisite: Mathematics 121.
A continuation of Mathematics 121 including concepts of trigonometry and the calculus of elementary transcendental functions. Not open to students with credit in Mathematics 151.

123. (23) Mathematical Analysis III (3)
Prerequisite: Mathematics 122.

137. (37) Intermediate Computer Programming (4) I, II
Prerequisite: Mathematics 107.
General concepts of machine and assembly languages, including data representation, looping and addressing techniques, subroutine linkages and use of system and programmer-defined macros.

138. Higher Level Languages (1-2)
Prerequisite: Mathematics 107.
Syntax and semantics of a given high level language. Units will depend on language. Programs will be run on computer. Possible languages include FORTRAN, COBOL, ALGOL, PL/I, LISP, SNOBOL, APL, Simulaton languages. See class schedule for current offering. Maximum credit six units.

140. (40) College Algebra (3) I, II
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.
Introductory and intermediate algebraic concepts. Functional notation; mathematical induction, complex numbers, De Moivre's theorem, inequalities, binomial theorem, determinants, etc. Not open to students with credit in Mathematics 150.

149. (49) Introductory Matrix Algebra (3)
Matrices, vectors, linear dependence and independence, basis, change of basis, similarity and congruence. Applications to systems of equations, characteristic values and orthogonality.

150. (50) Single Variable Calculus (5) I, II
Prerequisites: Mathematics 140 at this university, with minimum grade of C, and credit or concurrent registration in Mathematics 104, or qualification on the mathematics placement examinations.
Topics in analytic geometry; differentiation and integration of single variable functions, with emphasis on techniques.

151. (51) Calculus and Linear Algebra (4) I, II
Prerequisite: Mathematics 150 with minimum grade of C.
Infinite series, linear equations and matrices, real vector spaces, linear transformations, determinants, eigenvalues. Emphasis on techniques in low dimensional cases.

152. (52) Multivariable Calculus (4) I, II
Prerequisite: Mathematics 151 with minimum grade of C.
Partial differentiation, differential equations, multiple integrals, applications.

155A-155B. (55A-55B) Elementary Proofs (2-2) I, II
Prerequisite: Mathematics 150 with minimum grade of C. Mathematics 155A, with minimum grade of C, is prerequisite to 155B.

Semester I: Elementary algebraic systems, sets, functions, and induction. Semester II: Real numbers and limits.

210A. (10A) Structure and Concepts of Elementary Mathematics (3) I
This course or its equivalent is required for students working toward a teaching credential in elementary education.
Prerequisites: Two years of high school mathematics including algebra and geometry. Sets and relations, functions, the development of the number system from the natural numbers, including the whole numbers, the integers, the rational numbers and the real numbers.

210B. (10B) Structure and Concepts of Elementary Mathematics (3) I
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.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Entended Primarily for Undergraduates)

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

302. (101) 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. (104) History of Mathematics (3) I, II
Prerequisite: Mathematics 121 or 140.
The history of mathematics down to early modern times.

310A-310B. (110A-110B) Modern Elementary Mathematics (3-3)
Prerequisite: Mathematics 210B or qualifications on Mathematics Education Placement Test.
Mathematics 310A is prerequisite to 310B.
Inferences, relations, 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.

330A. (130A) Statistical Methods (3) I
Two lectures and two hours of laboratory.
Prerequisite: Mathematics 119 or equivalent statistics course.
One- and two-sample hypothesis tests, paired difference tests, tests for variances, analysis of variance. Linear regression and correlation. Chi-square tests. Simple nonparametric tests. The power of hypothesis tests.

330B. (130B) Statistical Methods (3) II
Prerequisite: Mathematics 330A.
Multiple regression, factorial models and nonparametric methods, all with emphasis on applications.

331. Statistical Computations and Analysis (3)
Prerequisite: Mathematics 330A.
Using statistical computer packages to analyze problems involving experimental design, regression and nonparametric methods.

Prerequisite: Mathematics 152. Mathematics 340A is prerequisite to 340B.
Selected topics from ordinary differential equations, with applications; hyperbolic, elliptic, Bessel and gamma functions, Fourier series and integrals, electromechanical analogies, the Laplace transform, and partial differential equations.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

498. (198) 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. (199) Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

510. (105) 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.

511. (106) Projective Geometry (3)
Prerequisites: Mathematics 122 or 151 and consent of instructor.
Concurrence of lines, collinearity of points and other properties of figures not altered by projections, construction and study of ellipses, hyperbolas, and parabolas by means of projections.

512. (107) 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.

520. (149) Linear Algebra (3) I, II
Prerequisite: Mathematics 123 or 152.
A study of linear equations, Euclidean spaces, linear transformations, matrices, determinants, and eigenvalues.

521A-521B. (150A-150B) Modern Algebra (3) I, II
Prerequisites: Mathematics 151. Mathematics 521A is prerequisite to 521B.
Selected topics from modern algebra to include an introduction to the theory of groups; theory of equations, and finite mathematics.

522. (152) Number Theory (3)
Prerequisite: Mathematics 151.
Selected topics from the theory of numbers to include congruences, Diophantine equations, and a study of prime curcums.

523. (155) 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. (119) Differential Equations (3) I, II
Prerequisite: Mathematics 152.
Ordinary differential equations with applications to geometry, physics and chemistry.

531. (170) Partial Differential Equations (3)
Prerequisite: Mathematics 330A.
Study of boundary-initial value problems via separation of variables, eigenfunction expansions, Green's functions, and transform methods. Introductory material includes uniform convergence, divergence theorems and Fourier series.

532. (175) Functions of a Complex Variable (3)
Prerequisite: Mathematics 152.
Analytic functions, Cauchy's theorem, Laurent series, calculus of residues.

533. (124) Vector Analysis (3)
Prerequisite: Mathematics 152.
Vector algebra, differentiation of vectors, gradient, divergence, and curl. Applications to geometry and physics.

534A. (121A) Advanced Calculus I (3)
Prerequisite: Mathematics 152.
The real number system, limits and other topics, with emphasis on functions of one variable.

534B. (121B) Advanced Calculus II (3)
Prerequisite: Mathematics 534A.
A continuation of Mathematics 534A with emphasis on functions of two or more variables.

535. (160) Introduction to Topology (3)
Prerequisite: Mathematics 534A.

541A. (135A) Numerical Analysis and Computation (3) I
Prerequisites: Mathematics 107 and 152.
Iteration methods to solve nonlinear equations (convergence, error bound, rate of convergence). The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry.

541B. (135B) Numerical Analysis and Computation (3) II
Prerequisite: Mathematics 340A or 530, 534A and 541A.

548. Computer Oriented Statistical Analysis (3)
Prerequisite: Mathematics 551B or 552 with working knowledge of FORTRAN.
Using a computer for statistical analysis, including the use of standard statistical packages and programming statistical procedures not given in standard packages.
306 / Mathematics

550. (134.) 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. (140A.) Mathematical Statistics (3) I, II
Prerequisite: Mathematics 152.
Probability models in the theory of statistics, sampling distributions with applications in statistical inference.

551B. (140B.) Mathematical Statistics (3) II
Prerequisite: Mathematics 551A.
Point and interval estimation and hypothesis testing in statistical models with applications to problems in various fields.

552. (141.) Statistics, Theory and Applications (3)
Prerequisite: Mathematics 551A.
Applications of and case studies employing statistical techniques from the areas of experimental design, nonparametric inferences, decision theory and selected topics.

553. (143.) Stochastic Processes (3)
Prerequisite: Mathematics 550.
Introduction to stochastic processes with selected applications.

557. Systems Programming (3) I, II
Prerequisite: Mathematics 570.
Review of batch process systems programs, their components, operating characteristics, user services and their limitations. Implementation techniques for parallel processing of input/output and interrupt handling. Details on addressing techniques, core management, system updating, documentation and operation.

570. (136.) Data Structures (3)
Prerequisite: Mathematics 137.
Basic concepts of data, linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multithreaded structures.

571. (137.) Finite Mathematics, with Computer Applications (3)
Prerequisite: Mathematics 123 or 152.
Equivalence and order relations, Boolean algebra, finite machines and their optimization, logical design.

572. (139.) 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. (156.) Automata Theory (3) II
Prerequisite: Mathematics 521A.
Definition and algebraic description of finite automata. Reduced forms for sequential machines. Regular sets and expressions. Introduction to context-free languages.

574. (157.) Machines and Recursive Functions (3)
Prerequisite: Mathematics 155A or 523 or 571.
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. (176.) Compiler Construction (3)
Prerequisites: Mathematics 570 and 572.

576. (177.) Artificial Intelligence (3) II
Prerequisite: Mathematics 523.

577. Probability and Statistics (3) I
Prerequisite: Mathematics 151.
Probability, measures of central tendency and dispersion, characteristics of frequency functions of discrete and continuous variates; applications. Highly recommended for all prospective secondary school teachers of mathematics.

578. Algorithms and Their Analysis (3)
Prerequisite: Mathematics 570.
Algorithms for solving frequently occurring problems. Sorting, merging, fast matrix multiplication, graph problems (e.g., finding shortest paths), the assignment problem and others.

579. Combinatorics (3)
Prerequisite: Mathematics 122 or 151.
Permutations, combinations, generating functions, recurrence relations, inclusion-exclusion counting. Polya's theory of counting. Other topics and applications.

596. (196.) Advanced Topics in Mathematics (1-4) I, II
Prerequisite: Consent of instructor.
Selected topics in classical and modern mathematics. May be repeated with the approval of the instructor. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Catalog.
Faculty
Chairman: Serros
Associate Professors: Kennedy, Moreno, Serros, Villarino
Assistant Professor: Griswold del Castillo
Lecturers: Adams, Felix, J. Felix, R. Palacios, Saldanini, Sanchez

Offered by Mexican-American Studies
Major in Mexican-American Studies with the A.B. degree in liberal arts and sciences.
Minor in Mexican-American Studies.

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 on page 53 of this catalog.
A double major is strongly recommended for students majoring in Mexican-American Studies.

Preparation for the major, Mexican-American Studies 110A-110B. (6 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. Students majoring in Mexican-American Studies must demonstrate knowledge of Spanish by satisfactory completion of written and oral examinations administered by Mexican-American Studies.

Minor in Mexican-American Studies.

Mexican-American Studies Minor
The minor in Mexican-American Studies consists of a minimum of 15 units in Mexican-American Studies, nine units of which must be in upper division courses.

Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES
103A. (3A) Chicano Orientation (1) Cr/NC
Lectures relating to general Chicano topics on- and off-campus directed especially at freshman and transfer EOP students; introduction to student services and general social problems in the Chicano community.

103B. (3B) Study Skills for Chicanos (0) Cr/NC
Three hours of laboratory. Directed study in reading and writing skills; especially for bilingual students needing extra work in these skills. Majority of work will be done in conjunction with the Study Skills Center.

103C. (3C) Review of Mathematics (0) Cr/NC
Three hours of laboratory. Directed study in mathematical skills; especially for bilingual students needing extra work in this skill.

110A-110B. (1A-1B) 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.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)
300. (168) Honors Course (1-3) I, II
Refer to Honors Program.

111A-111B. (2A-2B) Oral and Written Communication for the Spanish-Speaking (3-3)
Training for the Spanish-speaking in process of oral and written expression. Semester I: Oral expression; addressing the barrio; formal delivery. Semester II: Written expression; English grammar and composition; the term paper. Mexican-American Studies 111A is equivalent to Speech Communication 103. Mexican-American Studies 111B is equivalent to English 103.

Mexican-American Studies 111A is not open to students with credit in Speech Communication 103 and Mexican-American Studies 111B is not open to students with credit in English 103.

115. (10) Mexican-American in Transition (3)
Modern Chicano social problems recognizing the sociological factors involved. Emphasis on scientific method of approach. Evaluation of various causes and solutions of problems of the Chicano. Mexican-American Studies 115 is equivalent to Sociology 110.

119. (11) Field Instruction (3-6)
Field work in the barrio. Directed research and development projects in the San Diego Chicano community. It is recommended that this course be taken concurrently with Mexican-American Studies 110A or 110B. Maximum credit six units.

120A-120B. (20A-20B) The Mexican-American Role in the American Political System (3-3)
Semester I: Relationship between the Mexican-American community and the American political system. Semester II: The Mexican-American in relation to his city, county, and state institutions in California. This year course meets the graduation requirement in American institutions.

130. (30) Mexican Literature in Translation (3)
Contemporary Mexican prose and poetry in translation.

140. (40) History and Sociology of Racism (3)
Survey and analysis of majority group racism and its effects upon minority ethnic groups and society.

141A-141B. (41A-41B) History of the United States (3-3)
Emphasis on Spanish and Mexican influences. Semester I: U.S. expansion to 1848. Semester II: 1848 to present. The Treaty of Guadalupe Hidalgo; history of Mexican immigration; farm labor and urban Chicano history; contemporary movements. This year course meets the graduation requirement in American Institutions.

200. (50) Introduction to Mexican-American Culture (3)
The individual Chicano 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. cultural content.

230. (50) Mexican-American Art (3)
Contemporary barrio art in the Southwest. Lectures and exhibitions by Chicano artists of California.

250. (55) History of Mexican-American Drama (3)
The Teatro Campesino of Luis Valdez: the Los Angeles Teatro Urbano. Theory and practice in Contemporary Chicano Theater, including literary, critical, and technical aspects viewed against the historical background.

251. (55B) Mexican-American Dramatic Production (3)
Two lectures and three hours of laboratory. Theatrical practices and organization of productions; writing for the Chicano theater; presentation of plays in the barrio and the college.

260. (5C) Mexican and Chicano Music (3)
Music of Mexico and the barrio: emphasis on the corrido, its history and development in Mexico and the U.S.

299. (59) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

300. (168) Honors Course (1-3) I, II
Refer to Honors Program.
301A-301B. Mexican-American Studies 310 / Mexican-American Studies

301A-301B. Political Economy of the Chicano People (3-3) I, II
Prerequisite: Mexican-American Studies 301A or 301B. Semester I: Political and economic roots of the oppression and exploitation of the Chicano from historical, institutional, and theoretical points of view. Semester II: Traditional distortions in the sociology and anthropology of minorities (Chicano emphasis): demythification of the "sleeping giant," the "invisible minority," etc.

302. (101.) Community Organization and Development (3) I, II
Prerequisite: Mexican-American Studies 301B.
Theory of organizing the Mexican-American community for creative roles in educational, political, social change. Role of the professional organizer.

303. (102.) Contemporary Problems of the Barrio (3)
Prerequisite: Mexican-American Studies 301A or 101B.
Sociological and practical analysis of barrio problems. Observation in informal agencies for experiencing and sensitizing.

304. (103.) Narcotics in the Mexican-American Community (3) I, II
Prerequisite: Mexican-American Studies 301A or 101B.
Prevention and cure of drug problems; old and new methods; formal and informal agencies explored.

305. (111.) Advanced Field Instruction (3)
Advanced field work in the barrio. Directed research and development projects in the San Diego Chicano community. Maximum credit six units.

306. (121.) Immigration Law and Practices (3)
Legal and political status of the immigrant from Mexico; process of immigration; counseling the immigrant.

320. (105.) Mexican-American Life Styles (3)
The Mexican-American family in the past, present, and future. Traditional and evolving roles of the man and the woman. The new alternatives in the twentieth century.

324. (110.) Mexican-American Poetry (3)
Methods and materials of Spanish instruction through music of Mexico and the Southwest.

331. (131.) Chicano Poetry: Creative Writing (3)
Prerequisite: Mexican-American Studies 301A. Reading and writing of Spanish-English macaronic verse: a writing workshop in which students are given opportunity to criticize each other's work. Poetry is the point of departure and goal in sight. Maximum credit six units.

332. (132.) Chicano Prose: Creative Writing (3)
A writing workshop: Mutual criticism. Exploration of new form and content in Mexican-American prose. Maximum credit six units.

333. (133.) Prehispanic Literature (3)
Prerequisite: Mexican-American Studies 301A or 101B.
A study of Nahua and Maya areas in translation: studied as literature.

334. (144.) Language of the Barrio (3)
Prerequisite: Mexican-American Studies 301A or 101B.
A bilingual study of Chicano vocabulary and usage. Spanish and English.

335. (155.) Mexican-American Literature (3)
Prerequisite: Mexican-American Studies 301A or 101B.
A study of books by Mexican-American authors. Focus on themes, characterizations, and setting. Maximum credit six units.

350A-350B. Chicano Historical Experience in the North American Southwest (3-3) I, II
Prerequisite: Mexican-American Studies 301A or 301B. Semester I: Review of indigenous origins, Hispanic institutions and northern expansion; the Mexican Republic. Semester II: Early U.S. encroachment and the Mexican-American War; Chicano influences and contributions; the multilingual and multicultural Southwest.

360. Effects of Political and Economic Institutions on the Barrio (3) I
Prerequisite: Mexican-American Studies 301A.
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 modes.

365. (165.) Advanced Chicano Dramatic Production (3)
Prerequisite: Mexican-American Studies 301A.
Two lectures and three hours of laboratory. Theatrical practices and organization of productions; writing for the Chicano theater; presentation of plays in the barrio and college.

390A-390B. (122A-122B.) Bilingual Materials and Curriculum (3-3) I, II
Prerequisite: Mexican-American Studies 301A.
A study of Chicano literature for the elementary, junior high, and high school. The study of Chicano, Spanish-American, and Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

430. (100.) Mexican-American Culture and Thought (3)
Prerequisite: Mexican-American Studies 101A or 110B.
Intellectual history of the Mexican-American from Nahua and European origins to the synthesis between the two continents in nineteenth and twentieth centuries. The concept of Raza de bronce and Aztlán.

430. (100A) Mexican-American Folklore (3)
Prerequisite: Mexican-American Studies 101A or 110B.
An overview of folktales, legends, and common practices of the Chicano storyteller of old; analysis of ancient myths and their contemporary manifestations.

460A-460B. (170A-170B.) The Chicanos in Urban Politics (3-3)
Prerequisite: Consent of instructor, Mexican-American Studies 301B.
Semester I: Theory of urban politics; study and observation in county, city, and community organizations and agencies. Identification of specific problems. Semester II: Identification of specific urban problems; study and observation in county, city and community organizations and agencies. Exploration of practical solutions: field trips.

Prerequisite: Mexican-American Studies 301A or 101B.
An examination of the historical and dialectal elements of Chicano literature. The study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

466A-466B. Mexican-American Literature (3-3) I, II
Prerequisite: Consent of instructor, Mexican-American Studies 301A or 101B.
A study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

480. (170A-170B.) The Chicanos in Urban Politics (3-3)
Prerequisite: Mexican-American Studies 301B.
An examination of the historical and dialectal elements of Chicano literature. The study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

480. (171.) Bilingual Linguistics (3)
Prerequisite: Mexican-American Studies 101A or 110B.
A study of comparative elements in bilingual linguistics. Taught bilingually.

481. (172.) Dual Language Education (3)
Prerequisite: Consent of instructor, Mexican-American Studies 301A.
A study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

483. (175.) Dual Language Education (3)
Prerequisite: Consent of instructor, Mexican-American Studies 301A.
A study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

484. (176.) Dual Language Education (3)
Prerequisite: Consent of instructor, Mexican-American Studies 301A.
A study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

485. (177.) Dual Language Education (3)
Prerequisite: Consent of instructor, Mexican-American Studies 301A.
A study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

486. (178.) Dual Language Education (3)
Prerequisite: Consent of instructor, Mexican-American Studies 301A.
A study of Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.
Mexican-American Studies

481. Contemporary Issues and the Chicano Child (3)
Housing and neighborhoods, family structure, Chicano culture, health and medical needs, problems in education, emotional, social and intellectual growth, meaningful school curriculum; measurement and evaluation of academic skills and relationship to the education of urban and rural Chicano child.

482. Mexican-American Curricula (3)
Prerequisite: Mexican-American Studies 480. Studies of current theories in Mexican-American curricula and their development.

483. Rural and Migrant Education (3)
The Mexican-American rural and migrant student: problems and new programs.

484. Counselling the Mexican-American Student (3)
Prerequisite: Mexican-American Studies 480. Motivation counseling at all levels; parent counseling and involvement; recruiting for secondary continuation and college.

485. Testing the Mexican-American Student (3)
Prerequisite: Mexican-American Studies 480. Cultural bias in testing; development of new testing methods.

486. Selected Topics in Mexican-American Studies (3)
Intensive exploration of selected topics in the area of Mexican-American Studies. May be repeated with new content. Maximum credit six units.

487. Senior Survey in Mexican-American Studies (3)
Prerequisite: Mexican-American Studies 480. Survey integrating studies of selected areas of Mexican-American Studies. Senior report will be written.

489. Special Study (1-3)
Individual study. Maximum credit six units. Prerequisites: Consent of instructor and chairman of Mexican-American Studies.

Microbiology

In the College of Sciences

Faculty
Emeritus: Myers
Chairman: Kelly
Professors: Baxter, Kelly, Moore, Walch
Associate Professors: Andersen, Phelps, Steenbergen
Lecturer: Hemmingsen

Offered by the Department
Master of Science degree in microbiology.
Master of Arts or Master of Science degree in biology with an emphasis in microbiology.
Major in microbiology with the A.B. degree in liberal arts and sciences.
Major in microbiology with the B.S. degree in applied arts and sciences.
Major in Environmental Health with the B.S. degree in applied arts and sciences.
Minor in microbiology.
Single subject teaching credential in life sciences in area of microbiology.

Microbiology Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 63 of this catalog.
A minor is not required with this major.

Preparation for the major. Biology 100, 100L and 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L, and 250 or 251; Mathematics 121 and 122, or 140 and 150; and Physics 11A-11B, or 12A-12B and 12A-12B, or 12A-12B and 12A-12B (39-42 units.) Recommended: Chemistry 237.

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 "Graduation Requirements" on page 67.

Major. A minimum of 36 upper division units in microbiology and approved related fields to include Microbiology 310, 320, 330, and 515 or Biology 540; and Chemistry 361A-361B. Remaining units to be selected from courses in microbiology, and approved courses in other biological sciences, chemistry and physics.

Microbiology Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 63 of this catalog.
A minor is not required with this major.

Preparation for the major. Biology 100, 100L and 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L, and 250 or 251; Mathematics 121 and 122, or 140 and 150; and Physics 11A-11B, or 12A-12B and 12A-12B, or 12A-12B and 12A-12B. (39-42 units.) Recommended: Chemistry 237.

Major. A minimum of 36 upper division units in microbiology and approved related fields to include Microbiology 310, 320, 330, and 510 or 520, and Chemistry 361A-361B; and three of the following courses: Microbiology 515, 525, 525, 560. Recommended Chemistry 310A, 310B, and 467. Remaining courses to be selected from courses in microbiology, and approved courses in other biological sciences, chemistry and physics.

Medical Technology Curriculum

In Applied Arts and Sciences

The curriculum in medical technology, which prepares for the licensed profession of Public Health Microbiologist or Clinical Laboratory Technician or Bioanalyst, may be obtained by taking the microbiology major with the B.S. degree, but following a modified arrangement of courses. A description of the curriculum follows.
Public Health Microbiologist. To fulfill the academic requirements to qualify for the licensing examination given by the California State Department of Public Health for Public Health Microbiologist, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 520, 525, 530, 535 and Zoology 535. Recommended Microbiology 43OA-43OB, 515, 535L, Zoology 508 and 526.

Clinical Technologist. To fulfill the academic requirements to qualify for the licensing examination given by the State for Clinical Technologist and the certification examination for medical technologists given by the American Society of Clinical Pathologists, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 520, 525, 530, 535, and Zoology 535. Recommended: Biology 570 and 571; Chemistry 467, Microbiology 43OA-43OB, 515, 535L; Zoology 508 and 526.

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 on page 63 of this catalog.

A minor is not required with this major.

This program is approved by the California State Department of Health. Upon completion of degree requirements and one year of experience as an Assistant Sanitarian with a local public health department, the graduate will be admitted to the State of California examination for Registered Sanitarian.

Preparation for the major. Biology 100 and 100L; Biology 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L or 231, 231L, and 250 or 251; Geological Sciences 100, Health Science and Safety 102; Mathematics 121 and 122, or 140 and 150; Physics 115A-115B, or 124A-124B and 125A-125B; and Sociology 101 (48-53 units).

Major. A minimum of 36 upper division units to include Microbiology 310, 410, 420, 43OA-43OB, 520; Biology 520; Civil Engineering 444, 555; Public Administration 520; Zoology 526. Remaining courses to be selected from among electives approved by the department. The prerequisites for Civil Engineering 444 and 555 are waived for students in this major.

Microbiology Minor

The minor in microbiology consists of a minimum of 15 units in microbiology to include Microbiology 310, 320 and 330. Courses in the minor may not be counted toward the 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 School of Education.

The program described below is subject to the approval of the Commission on Teacher Preparation and Licensing. For the present time, the program is required for departmental recommendation to the student teaching program of the School of Education. Candidates for the single subject teaching credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Preparation for the major. Biology 100, 100L, and 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L or 231, 231L, and 250 or 251; Mathematics 121 and 122, or 140 and 150; Physics 115A-115B or 124A-124B and 125A-125B; Zoology 150 and 160 strongly recommended. (39-42 units)

Major. A minimum of 39 upper division units in microbiology and approved related fields to include Microbiology 310, 320, 330, and 510 or 520; three of the following courses: Microbiology 515, 525, 535, 560; Biology 410; Botany 500; Chemistry 361A-361B, and one of the following courses: Zoology 503, 510, 521, 535, 570.

LOWER DIVISION COURSES

110. (11) 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. (11L) Microbiology and Man, Laboratory (1) I, II

Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 110.
Laboratory exercises designed to complement material presented in Microbiology 110. Fulfills the general education requirement in the natural science area.

210. (10) Fundamentals of Microbiology (4) I, II

Two lectures and six hours of laboratory.
Prerequisites: Chemistry 100, 100L, 130, 130L, or 200, 200L, 201, 201L. Students with credit in Microbiology 110 may enroll but will receive only one additional unit of credit.
A course for nursing and dietetics majors. Study of the microorganisms of the environment, including the disease-producing organisms, their actions and reactions.

299. (99) Experimental Topics (1-4)

Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

300. (166) Honors Course (1-3) I, II

Refer to Honors Program.

310. (101.) General Microbiology (4) I, II, S

Two lectures and six hours of laboratory.
Prerequisite: Chemistry 230, 230L or 231, 231L.
The actions and reactions of microorganisms in response to their environment, both natural and as changed by other organisms, including man. Also includes an introduction to the pathogens.

320. (105.) Microbial Physiology (4) I, II

Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310; Chemistry 250 or 251; and Physics 124A-124B. Recommended: Chemistry 361A; Physics 125A-125B.
Physiology of selected bacteria, fungi, and other microorganisms.

330. (103.) Fundamentals of Immunology and Serology (4) I, II

Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310; Chemistry 361A; and one other upper division biological science course.
The immunohematology of antigens and antibodies and their reactions. Immunohematology and hypersensitivity. Serological techniques.

350. (140.) History of Microbiology (2) I, II

Prerequisite: Microbiology 110, 210, or 310.
The development of microbiology as a specialty area of the biological sciences and its influence on social and political developments.

370. (118) Community Epidemiology (3) I, II

Prerequisite: Microbiology 210.
A course for other than biological sciences majors. Epidemiological concepts and methods as they apply to current community problems.

410. (112) Principles of Environmental Health (4) I

Three lectures and three hours of laboratory and field work.
Prerequisites: Biology 215 or Mathematics 119; Health Science and Safety 102; and Microbiology 310.
General principles of environmental sanitation, including the relationship of the various aspects of physical environment to preventive medicine; the provision of clean air and water, proper waste disposal, safe food supply, and adequate habitation.
316 / Microbiology

420. (113.) Environmental Health Administration (4) II
Three lectures and three hours of field work.
Prerequisite: Microbiology 410.
Concepts of organization and administration applied to environmental health; factors affecting
these at the local, national and international levels.

430A-430B. (111A-111B) 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. (190.) Investigation and Report in Microbiology (2) I, II
Prerequisites: Microbiology 310 and at least one additional upper division course in microbiology.
Investigation and reports on current microbiological literature.

495. (198.) Methods of Investigation (2) I, II
One discussion and three hours of laboratory.
Prerequisite: Microbiology 310.
Laboratory methods used in microbiological research. Preparation and utilization of microbiological
culture media and diagnostic reagents. Maximum credit four units.

510. (115.) Advanced General Microbiology (4) II
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
Taxonomy, comparative physiology and ecology of representative microorganisms found in various
natural environments.

515. (114.) Bacterial and Viral Genetics (2) I, II
Prerequisite: Microbiology 310.
The genetics of bacteriophages; selected animal viruses and bacteria.

515L. (114L) Bacterial and Viral Genetics Laboratory (2) II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 515.

520. (102.) Pathogenic Bacteriology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310; Chemistry 250 or 251.
The study of disease-producing bacteria; organisms that cause disease in man and other animals.

525. (104.) Medical Mycology (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
Mycotic agents of disease in man and other animals. Consideration of the biology of fungi:
concepts of host-parasite relationships; the study of normal and pathological blood with chemical,
physical and microscopic methods.

530. (109.) Hematology (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
The study of normal and pathological blood with chemical, physical and microscopic methods.

535. (107.) General Virology (2) I, II
Prerequisite: Microbiology 310. Recommended: Microbiology 330 and 520.
Virology, virology of plants and animals, virology, function, and methods of study.

535L. (107L) General Virology Laboratory (2) II
Six hours of laboratory.
Prerequisites: Microbiology 520 and credit or concurrent registration in Microbiology 535.
The culture, isolation, and characterization of viruses.

560. (115.) Marine Microbiology (2) I
Prerequisite: Microbiology 310.
Microbiological population of estuary and ocean waters, interrelationships with other organisms
and the physical and chemical environment.

560L. Marine Microbiology Laboratory (2) I
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 560.

580. (120.) Animal Viruses (4) I
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 520 and 535. Recommended: Microbiology 330 and 535L.
Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and
serology.

590. (180.) Electron Microscopy (4) II
Two lectures and six hours of laboratory.
Prerequisites: Physics 115A-115B or 115A-124A and Microbiology 310. Recommended:
Microbiology 535, and Zoology 508.
Principles and techniques in the biological application of the electron microscope.

GRADUATE COURSES
Refer to the Graduate Catalog.
Music

In the College of Professional Studies

The Department of Music is a Member of the National Association of Schools of Music.

Faculty
Emeritus: Smith, L. D., Smith, D., Springfield
Chairman: Smith, J.D.
Associate Professors: Almond, Hill, Loomis, Meadows, Mitchell, Moe, Yates
Assistant Professors: Fye, George, Kolar, Logan, O'Donnell
Lecturer: Lloyd

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.
Minor in music.
Teaching major in music for the single subject teaching credential.

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. Upon entering the department, each student is required to take an examination in piano for classification, and to commence on no less than four consecutive semesters of class piano study for credit.

2. In the area of performance studies, each entering student is required to declare his major instrument (voice, piano, clarinet, etc.), take an examination thereon for classification and complete six semesters of study on that instrument for the A.B. degree for the Single Subject Teaching Credential and eight semesters for the B.M. degree. (The requirements in terms of semesters of study may be reduced for transfer students on the basis of the examination for classification.)

3. To qualify for upper division study, music majors must complete successfully a Junior Level examination which will be administered following the fourth semester of study in Music 250.

4. Appearance in at least one student recital during each semester in residence, according to departmental recital requirements.

5. As laboratory experience, participation in one or two performing groups each semester, to meet the requirement in courses numbered 170 through 190 and 370 through 390 as stated in each of the majors, half of this requirement to be met in a major group in which the major instrument or voice is regularly used.

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 on page 63 of this catalog. 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 120A through 135; 158A-158B; four units selected from courses numbered 170 through 190; 246A-246B; four units of Music 250; 258A-258B, (31-35 units.)

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 on page 63 of this catalog. 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 120A through 135; 158A-158B, 258A-258B, six units selected from courses numbered 170 through 190; four to eight units in Music 250. (26-34 units.)

Major: Thirty-eight to forty-two upper division units to include two units selected from Music 449A-449B or 497A-497B, 552A-552B, six units selected from courses numbered 370 through 390, four to eight units in Music 450, and the requirements in one of the following fields of emphasis:

(a) Performance. Ten units to include Music 367, 497, and seven units to be selected with the aid of the departmental adviser. (Pianists, vocalists, and string performers must include Music 541 and 542.)

Students emphasizing performance must appear in a solo recital during the junior year and must present a solo recital during the senior year. The student must pass an audition of the program to be performed before the music faculty no less than one month in advance of the recitals.

(b) Music History and Literature. Ten units to include four units of Music 499 and six courses of music to be selected with the aid of the departmental adviser from related fields such as history, etc.

During his senior year, the student emphasizing music history and literature is required to organize, prepare program notes, and present two recitals consisting of recorded or "live" performances. Each will deal with a representative works of a certain period, composers, or styles to be compared. Such students must pass an audition of the lecture and the music to be performed no less than one month in advance of the recitals.

(c) Composition. Ten units to include two units of Music 207, two units of Music 497, two units of Music 507, and four units selected with the aid of the departmental adviser.

An interview with the Department Chairman is required for admission to this emphasis. The student emphasizing composition is required to present a concert of his compositions during the senior year and present the scores of works to be performed to the music faculty no less than one month in advance of the performance.

Foreign Language Requirement. Eight to twelve units for 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 French, German, or Italian.
3. All other upper-division units of one foreign language chosen from French, German, or Italian (except that classical guitar students may substitute Spanish).

Music Minor

To be admitted to the minor program, the student must demonstrate vocal or instrumental performing ability.

The minor in music consists of 26 units in music to include Music 110A-110B, 158A-158B, 258A-258B, and eight units of electives, six units of which must be in upper division courses selected in consultation with the departmental adviser.

Courses in the minor may not be counted toward the major.

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 School of Education.

Students in teacher education may use this major for the A.B. degree in applied arts and sciences. By completing additional departmental requirements in recital attendance and performance, and proficiency examinations in voice and piano.
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 120A through 135; 158A-158B, four units selected from courses numbered 170 through 190; 246A-246B, four units of Music 250, 258A-258B. (31-35 units.)

Major. A minimum of 30 upper division units to include Music 358A-358B; 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 to elect courses which may or may not be included in this group. Enrollment by qualified students who wish to elect these courses is encouraged.

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 filling a change of program. The examination will consist of the regular jury examination required of all music majors at the conclusion of each semester.
3. Students may under no circumstances change teachers in the middle of a semester without first securing the permission of the chairman 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.

LOWER DIVISION COURSES

101. (1.) Recitals (1) I, II Cr/AC
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. (2.) Basic Musicianship for Non-Music Majors (3) I, II
Four hours.
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.

110A-110B. (10A-10B.) 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. (10C-10D.) 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. (15A.) Voice—Elementary Class Instruction (1) I, II
Two hours.
Mastery of the fundamentals of voice. Not open to voice majors.
250. (50.) 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-half 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.
Credit in the section of the music major. Maximum credit for Music 250 is eight units.
A. Piano  
B. Harpsichord  
C. Organ  
D. Voice  
E. Flute  
F. Oboe  
G. Clarinet  
H. Saxophone  
J. Bassoon

K. French Horn  
L. Trumpet  
M. Trombone  
N. Bantone Horn  
O. Tuba  
P. Percussion  
Q. Violin  
R. Viola  
S. Cello

258A-258B. (58A-58B.) 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.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

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

301. (101.) Recitals (1) I, II Cr/NC
Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with departmental requirements. Maximum credit four units.

310. (110.) 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. (120A.) 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. (120B.) 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. (125A.) 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. (125B.) Oboe and Bassoon—Elementary Class Instruction (1) I, II
Two hours.
Fundamentals of oboe and bassoon by lecture and acquirement of elementary skills.
Not open to students with credit in Music 125B.
330. (130.) Brass—Elementary Class Instruction (1) I
Two hours.
Fundamentals of brass instruments by lecture and acquisition of elementary skills. Not open to students with credit in Music 130.

335. (135.) 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. (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 140.

343. (143.) Music Literature for Children (3) I, II
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. (144.) Folk Music (3) I, II
Prerequisite: Music 102 or 158B.
The origin and development of folk music; the social instruments and their use. Participation in singing and playing folk music.

345. (145.) Music in Contemporary Life (3) I, II
Prerequisite: Music 102 or 158B.
Functional music in society to include its psychological, physical and recreational uses; music as communication; the composer, the musician, and the audience.

347. (147.) Perspectives in Music (3) I, II
Prerequisite: Music 102 or 158B.
Musical understandings from nonperformance aspects and perspectives regarding the relationships of music to the visual arts and the humanities.

351. (151.) 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. Twentieth Century American Jazz.

353. (153.) 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. (155.) Ethnic Music (3)
World music outside the European art tradition with emphasis on the music of India, Africa, East Asia and Indonesia.

358A-358B. (158A-158B.) Comprehensive Musicianship (5-5) I, II
Four lectures and two hours of laboratory.
Prerequisite: Music 258B. Music 358A is prerequisite to 358B.
Continuation of Music 258A-258B. Counterman from 18th to 20th century, serial techniques, jazz, electronic music, individual projects in instrumentation, composition, analysis, non-Western music.

367. (167.) 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
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.
449A-449B. (149A-149B.) Instrumental Conducting (1-1) I, II
Three hours.
Prerequisite: Music 2588. Music 449A is prerequisite to 449B.
Orchestra and band scores of graduated levels of advancement. The class will prepare and
conduct instrumental works in public performance.

450. (150.) Performance Studies (1-3) 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; 15 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 on the music major. Maximum credit for Music 450 is eight units.

A. Piano
B. Harpsichord
C. Organ
D. Voice
E. Flute
F. Oboe
G. Clarinet
H. Saxophone
J. Bassoon
K. French Horn
L. Trumpet
M. Trombone
N. Baritone Horn
O. Tuba
P. Percussion
Q. Violin
R. Viola
S. Cello
T. Contrabass
U. Harp
V. Classical Guitar
W. Medieval or
X. Classical Accordion
Y. Composition
Z. Non-Western Instruments

496. (196.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable
to a bachelor's degree in courses under this number of which no more than three units may be
applicable to general education requirements.

497. (197.) Senior Recital (2) I, II
Prerequisite: Senior standing in music. Selection of literature for recital program not to exceed one hour in length; theoretical analysis and
historical study of scores chosen; preparation for public performance; and examination before
committee of music department faculty.

499. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of the department chairman.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

507. (107.) Composition Laboratory (1) II
Three hours of laboratory.
Prerequisites: Music 207 and consent of instructor.
Continuation of Music 207. Maximum credit two units.

541. (141.) Performance Studies Pedagogy (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Consent of instructor.
Teaching beginning and intermediate applied music. Survey and evaluation of teaching materials.
Observation of individual or group lessons.
A. Piano
B. Strings
C. Voice

542. (142.) 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. (152A-152B.) History of Music (3-3) I, II
Prerequisite: Music 2588. 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. (154.) Music Literature (2) I, II
Prerequisite: Music 2588.
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

GRADUATE COURSES
Refer to the Graduate Catalog.
### Nursing

**In the College of Professional Studies**

Agency Member of the National League for Nursing

Accredited by the California Board of Registered Nursing

and by the National League for Nursing

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**Faculty**

Emeritus: Nye  
Chairperson: Wozniak  
Professors: Black, Coveny, Johnson, Moses, Salerno, Strowca, Thomas, Wozniak  
Associate Professor: Latho  
Assistant Professors: Ciekrin, Flagg, La Monica, Laws, Leslie, Moffett, Rehman, Richards, Roth, Verderber, Wallace, Wamock, Wong  
Lecturers: Colwell, Hansen, Harris, Holland, Meier, Mroz, Peters

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**Offered by Nursing**

Major in nursing with the B.S. degree in applied arts and sciences

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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 on page 63 of this catalog. A minor is not required with this major.

Compliance with Title 16, California Administrative Code, Section 1433 necessitates revision of both prerequisites and course offerings in the School of Nursing. All prenursing students must check with the School of Nursing for current information.

The curriculum in nursing requires completion of a minimum of 128 units as prescribed, with a grade of C or better in each nursing course completed in satisfaction of requirements for the degree. Directed clinical experience in hospitals and health agencies in San Diego County is an integral part of the program. Graduates are eligible to apply for the California Certificate of Public Health Nursing.

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### Special Instructions

Effective January 1, 1976, nursing majors enrolling as first semester freshmen will be eligible to take the State Board examination for licensure after satisfactorily completing six semesters of the prescribed curriculum. It is important to note that because of this legislation a major curriculum revision is in progress that will affect students enrolling as first semester freshmen in January 1976. During the transitional period of curriculum revision, all prenursing students must check with Nursing for current information. The curriculum in nursing requires completion of a minimum of 128 units as prescribed, with a grade of C or better in each nursing course completed in satisfaction of requirements for the degree.

Directed clinical experience in hospitals and health agencies in San Diego County is an integral part of the program. Graduates are eligible to apply for the California Certificate of Public Health Nursing.

### UPPER DIVISION COURSES

*(Intended Primarily for Undergraduates)*

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>300. (166)</td>
<td>Honors Course</td>
<td>(1-3) I, II</td>
<td>Refer to Honors Program.</td>
</tr>
<tr>
<td>301. (101)</td>
<td>Maternal-Neonatal Nursing</td>
<td>(3) I, II</td>
<td>Minimum grade of C in each course listed under preparation for the major. Minimum overall GPA of 2.50 in courses listed under preparation for the major in nursing; concurrent registration in Nursing 302, 303A, and 304A. Principles of care of mothers and newborn infants including the recognition of the manifestation of basic needs with emphasis on the importance of family relationships.</td>
</tr>
<tr>
<td>302. (102)</td>
<td>Maternal-Neonatal Nursing Experience</td>
<td>(4) I, II</td>
<td>Twelve hours of laboratory. Concurrent registration in Nursing 301, 303A, and 304A. Clinical experience in the care of mothers and newborn infants including all phases of the maternity cycle.</td>
</tr>
<tr>
<td>305A-305B</td>
<td>309-309</td>
<td>Psychiatric and Mental Health Nursing</td>
<td>(2-1) I, II</td>
</tr>
<tr>
<td>311. (130)</td>
<td>Child Health Nursing</td>
<td>(3) I, II</td>
<td>For Nursing 301 and concurrent registration in Nursing 304A and 312. Clinical experience focusing on the health of the well and the sick child from birth through adolescence.</td>
</tr>
<tr>
<td>312. (151)</td>
<td>Child Health Nursing Experience</td>
<td>(4) I, II</td>
<td>Twelve hours of laboratory. Concurrent registration in Nursing 303B, 304B and 311. Clinical experience focusing on growth, developmental, and health needs of the child in a variety of settings.</td>
</tr>
<tr>
<td>321. (105)</td>
<td>Adult Health Nursing</td>
<td>(4) I, II</td>
<td>For Nursing 301 and concurrent registration in Nursing 322, 323, and 324. The analysis of the health illness needs of the adult and the nursing therapies necessary for the promotion of optimum health.</td>
</tr>
<tr>
<td>322. (106)</td>
<td>Adult Health Nursing Experience</td>
<td>(4) I, II</td>
<td>Twelve hours of laboratory. Concurrent registration in Nursing 321, 322, and 324. Clinical experience in recognizing and meeting the health needs of the adult patient in a variety of settings.</td>
</tr>
<tr>
<td>323. (102)</td>
<td>Community Health Nursing</td>
<td>(3) I, II</td>
<td>Microbiology 370. For Nursing 301 and concurrent registration in Nursing 321, 322, and 324. Principles and concepts of community health necessary to maintain the health and safety of the community, families, and groups.</td>
</tr>
<tr>
<td>324. (133)</td>
<td>Community Health Experience</td>
<td>(3) I, II</td>
<td>Clinical experience in recognizing and meeting the health needs of the adult patient in a variety of settings. Principles and concepts of community health necessary to maintain the health and safety of the community, families, and groups. Concurrent registration in Nursing 304A and concurrent registration in Nursing 304B, 311, and 315. Clinical experience focusing on the utilization of mental health concepts in meeting needs of patients.</td>
</tr>
<tr>
<td>331. (136)</td>
<td>Management of Patient Care</td>
<td>(2) I, II</td>
<td>For Nursing 301 and concurrent registration in Nursing 311 and 312. Principles of administration applied to the management and the direction of the wheelchair team. Focus directed toward the development of the professional nurse in assuming a leadership role.</td>
</tr>
<tr>
<td>332. (137)</td>
<td>Management of Patient Care Experience</td>
<td>(3) I, II</td>
<td>Nine hours of laboratory. Clinical experience in utilizing tools and skills of management in assessing, providing, and directing health care.</td>
</tr>
<tr>
<td>335. (116)</td>
<td>The Professional Role</td>
<td>(3) I, II</td>
<td>Concurrent registration in Nursing 333 and 334. Development of the nursing profession in Western Civilization. Focus on the multifaceted role of the professional nurse in modern social order.</td>
</tr>
<tr>
<td>341. (151)</td>
<td>Advanced Concepts in Clinical Nursing</td>
<td>(4) Irregular</td>
<td>Two lectures and six hours of laboratory. For Nursing 323. Theory and selected practice in the care of the patient with complex problems requiring intensive care, coronary care and/or rehabilitation.</td>
</tr>
</tbody>
</table>
499, Special Studies (1-3) I, II
Applicable to general education requirements. No more than three units may be applicable to a bachelor's degree in courses under this number.

401, School Nursing Practitioner (3) I
Essential knowledge for the role of the school nurse related to the school health nurse's role and responsibilities, emphasis on the physical assessment. Prerequisites: Credit or concurrent registration in Nursing 323; Laboratory elective.

401A, School Nurse Practitioner (6) I
Four lectures and six hours of laboratory. Prerequisites: Bachelor's degree in Nursing; Nursing 400. Primary health care of school age children. Emphasis on the physical assessment.

401B, School Nurse Practitioner (4) I
Two lectures and six hours of laboratory. Prerequisites: Nursing 401A. Theory and supervised practice of assessing the health of children in the school system.

402A, School Nursing (3) Extension
The application of health principles and current best practices in schools with emphasis on the functions of the school nurse related to the school, home, and community.

401A, School Nurse Practitioner (6) Irregular
Four lectures and six hours of laboratory. Prerequisites: Bachelor's degree in Nursing; Nursing 400. Primary health care of school age children. Emphasis on the physical assessment.

401B, School Nurse Practitioner (4) Irregular
Two lectures and six hours of laboratory. Prerequisites: Nursing 401A. Theory and supervised practice of assessing the health-illness of children in the school system.

496, Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

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

In the College of Arts and Letters

Faculty
Chairman: Weissman
Professors: Crawford, Friedman, Howard, Koppelman, Lauer, McClurg, Nelson, O'Reilly, Rula,
Shields, Snyder, Warren, Weissman
Associate Professors: Carella, Feenberg, Rosenstein, Troxell
Assistant Professor: Wastor
Lecturers: Manheimer, Sherover

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.

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 on page 63 of this catalog.
A minor is not required with this major.
Preparation for the major. Nine 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 "Graduation Requirements" on page 67.
Major. A minimum of 24 upper division units in philosophy to include Philosophy 301 and either
Philosophy 303, 502, or 504, or Philosophy 523, 525 and 528.

Philosophy Minor
The minor in philosophy consists of a minimum of 15 units in philosophy, nine units of which must
be in upper division courses. Philosophy 301 is recommended.
Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES
101. (1) 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. (2) 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. (3) Historical Introduction to Philosophy (3) I, II
Introduction to philosophical inquiry through study of the works of major philosophers in their
historical contexts.
120. (20) 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.
209. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable
to a bachelor's degree in courses under this number of which no more than three units may be
applicable to general education requirements.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

301. (101) History of Philosophy I (3) I, II
Prerequisite: Three units of philosophy.
Thales through Marcus Aurelius.
302. (102) History of Philosophy II (3) I, II
Prerequisite: Philosophy 301. Recommended: Philosophy 502.
Nicholas of Cusa through Kant.
320. (129) Social Ethics (3)
Prerequisite: Philosophy 101. 102 or 103.
Ethical issues of contemporary life. Individualism vs. collectivism; democracy vs. dictatorship; ethical problems arising in law, medicine, business, government and interpersonal relationships.
334. (134) Philosophy of Literature (3)
Prerequisite: Six units of philosophy.
Study of literature of philosophical significance, and of philosophical problems of literature.
336. (136) Jewish Philosophy (3)
Prerequisite: Three units of philosophy.
Outstanding men and movements, e.g., Biblical ethics and law, Philo of Alexandria, the rabbinical
tradition, the Kabbala, Moses ben Maimon, Moses Mendelssohn and Martin Buber.
496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable
to a bachelor's degree in courses under this number of which no more than three units may be
applicable to general education requirements.
499. (199) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Twelve upper division units in philosophy and consent of instructor.

UPPER DIVISION COURSES

502. (102) History of Philosophy III (3)
Prerequisite: Philosophy 301. Recommended: Philosophy 502.
Plato through William of Occam.
504. (104) History of Philosophy IV (3)
Prerequisite: Philosophy 303.
Fichte through Royce.
505A-505B. (105A-105B) Twentieth Century Philosophy (3-3)
Prerequisite: Six units of philosophy.
Historical treatment of major philosophical issues, movements and figures in American and
European philosophy. Semester I: Emphasis on Great Britain and the United States. Semester II:
Emphasis on continental Europe.
508. (108) 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. (109) 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. (110) Philosophy of Law (3)
Prerequisite: Three units of philosophy and three units of political science.
The nature of law and the logic of legal reasoning. An exploration of certain key legal concepts
such as causation, responsibility, personality and property.
512. (112) Political Philosophy (3)
Prerequisite: Philosophy 101, 102 or 103.
Selected aspects of the political structures within which we live, such as law, power, sovereignty,
justice, liberty, welfare.
521. (121) 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.

Assistant Professor: Weston
Associate Professors: Carella, Feenberg, Rosenstein, Troxell
Professors: Crawford, Friedman, Howard, Koppelman, Lauer, McClurg, Nelson, O'Reilly, Rula,
Shields, Snyder, Warren, Weissman

Assistant Professor: Weastor
Lecturers: Manheimer, Sherover

Major of Arts degree in philosophy.
Major in philosophy with the A.B. degree in liberal arts and sciences.
Minor in philosophy.

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 on page 63 of this catalog.
A minor is not required with this major.
Preparation for the major. Nine 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 "Graduation Requirements" on page 67.
Major. A minimum of 24 upper division units in philosophy to include Philosophy 301 and either
Philosophy 303, 502, or 504 or Philosophy 523, 525 and 528.

Philosophy Minor
The minor in philosophy consists of a minimum of 15 units in philosophy, nine units of which must
be in upper division courses. Philosophy 301 is recommended.
Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES
101. (1) 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. (2) 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. (3) Historical Introduction to Philosophy (3) I, II
Introduction to philosophical inquiry through study of the works of major philosophers in their
historical contexts.
120. (20) 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.
209. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable
to a bachelor's degree in courses under this number of which no more than three units may be
applicable to general education requirements.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

502. (102) History of Philosophy II (3)
Prerequisite: Philosophy 301.
Plato through William of Occam.
504. (104) History of Philosophy IV (3)
Prerequisite: Philosophy 303.
Fichte through Royce.
505A-505B. (105A-105B) Twentieth Century Philosophy (3-3)
Prerequisite: Six units of philosophy.
Historical treatment of major philosophical issues, movements and figures in American and
European philosophy. Semester I: Emphasis on Great Britain and the United States. Semester II:
Emphasis on continental Europe.
508. (108) 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. (109) 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. (110) Philosophy of Law (3)
Prerequisite: Three units of philosophy and three units of political science.
The nature of law and the logic of legal reasoning. An exploration of certain key legal concepts
such as causation, responsibility, personality and property.
512. (112) Political Philosophy (3)
Prerequisite: Philosophy 101, 102 or 103.
Selected aspects of the political structures within which we live, such as law, power, sovereignty,
justice, liberty, welfare.
521. (121) 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. (122.) Inductive Logic (3)
Prerequisite: Philosophy 120.

523. (123.) Theory of Knowledge (3)
Prerequisite: Six units of philosophy.
The major theoretical traditions: positivism, realism, naturalism, materialism and idealism, teleology and determinism.

524. (124.) Values and Social Science (3)
Prerequisite: Six units of philosophy.
Analysis and discussion of the nature of values and value-judgment with particular reference to the social sciences. Among relevant issues: the naturalistic fallacy, facts and values, authoritarianism, emotivism, objective relativism, the individual and the community.

525. (125.) Metaphysics (3)
Prerequisite: Six units of philosophy.
Prominent theories of reality, e.g., realism and nominalism, materialism and idealism, teleology and determinism.

526. (126.) Values and Social Science (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.

527. (127.) Philosophy of Language (3)
Prerequisite: Six units of philosophy.
A systematic study of the major philosophical traditions in the field.

528. (128.) 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.

529. (129.) 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.

530. (130.) Philosophy of Religion (3)
Prerequisite: Six units of philosophy.
Philosophical examination of issues raised by the religious impulse in man.

531. (131.) 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.

532. (132.) History of Aesthetics (3)
Prerequisite: Philosophy 101, 102 or 103.
Major documents in the history of aesthetics.

533. (133.) 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.

534. (134.) American Philosophy (3)
Prerequisite: Six units of philosophy.
A systematic and critical study of the work of American philosophers from the Puritans through the Pragmatists. Major emphasis is placed on Peirce, James, Royce, Santayana, Dewey and Whitehead.

535. (135.) A Major Philosopher (3)
Prerequisite: Philosophy 301.
The writings of one major philosopher. May be repeated with new content. Maximum credit six units applicable to the major. Maximum credit six units applicable on a master’s degree.

595. (195.) 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. Maximum credit six units applicable toward the major in philosophy. Maximum credit six units for both 595 and 795 applicable on a master’s degree.

596. (196.) 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, Ganchi. Maximum credit six units with three units applicable on a master’s degree.

GRADUATE COURSES
Refer to the Graduate Catalog.
Physical Education

in the College of Professional Studies

FacultY
Emeritus: Schutte, Schwob, Shannon, Sportman, Terry, Tollersten
Chairman: Wells
Professors: Andrus, Benton, Carter, Cullen, Fox, Governali, Howell, M., Kasch, Lockman, Murphy,
Olson, A., Olson, L., Phillips, Scott, Zieglenflus
Associate Professors: Barone, Broadbent, Cave, Franz, Friedman, Moore, Selder, Suecc, Wells, Williamson, Willis
Assistant Professors: Aufesser, Freischlager, Gutowski, Holyfield, Howell, R., Lamke, Landis,
Quinn, Smith, Whitby, Wilhelm
Lecturers: Ivenson, Lee, Toney

Offered by the Department
Master of Arts degree in physical education.
Major in physical education with the A.B. degree in liberal arts and sciences.
Major in physical education with the A.B. degree in applied arts and sciences.
Teaching major in physical education for the single subject teaching credential.
Minor in physical education.
Minor in dance.

Physical Education Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the requirements listed on page 63 of this catalog.

Preparation for the major. Biology 362; Physical Education 141, 175, 190; Psychology 101; Zoology 108. (17 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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units in physical education to include 12 units from Physical Education 371, 375, 380, 560, 561, 570, 585 and 12 units selected with the approval of the adviser.

Physical Education Major
With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the requirements listed on page 63 of this catalog.

Emphasis in Dance
Preparation for the major. Physical Education 150A-150B, 152, 153, 154; one unit selected from Physical Education 133A-133B and 134A-134B; Biology 109; and 16 units selected from Art 101, 105, 107, 201, 202, 258, 259, Drama 105, 130, 231, 235, 250; Music 110A, 115, 116, Speech Communication 111A. (28 units.)

Major. A minimum of 24 upper division units in physical education to include four units from Physical Education 3450, 3451, 3452, 350, 351, 352, 353, 354A, 354B, and two units of upper division electives to be selected with the approval of the dance adviser. In addition to course requirements, the student must be a member of the Dance-Theater group and must participate in a minimum of four semesters of dance programs, preferably in the junior and senior years. Substitution for such participation will require departmental approval. This emphasis does not meet the teaching credential requirements.

Physical Education Minor
The minor in physical education, planned in consultation with an adviser, consists of a minimum of 15 units in physical education, nine units of which must be in upper division courses. Courses in the minor may not be counted toward the major.

Dance Minor
The minor in dance consists of Physical Education 133B, 134B, 150A-150B, 153, 154; six units selected from Physical Education 350, 351, 352 or 555A, 556; and three upper division units selected from the areas of art, drama and music with the approval of the adviser in dance. (17 units.) Courses in the minor may not be counted toward the major.

Physical Education Major
For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education. This major may be used by students as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Biology 362; Physical Education 141, 175, 190; Psychology 101; Zoology 108. (17 units.) Competency tests must be passed in three team sports, three individual or dual sports, one dance, one gymnastics, one swimming, one physical fitness, one track and field (women), one combatives (men).

Major. A minimum of 35 upper division units to include Physical Education 371, 375, 380, 560, 561, 570, 585; two units from each of the following groups for a total of 14 units: Physical fitness (345A); team sports (345L-men: 345C, 345M or 345N-women); individual sports (345I-men: 345J or 345J-women); dance (women) (341B, 345D, 345E or 345F); coaching (men) (331A, 331B, 331C or 331D); and six units from Physical Education 322, 331, 341 or 345.

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 courses is planned to give each student an opportunity to participate in many activities of carryover value, developmental nature and recreational interest. An opportunity is afforded students to participate in competitive sports in the extramural and intramural programs.

LOWER DIVISION COURSES
Courses offered for one unit credit meet two hours per week or equivalent. "A" signifies a beginning class; "B" intermediate.

101A. (1A.) Physical Fitness and Figure Control (1)
102A-102B. (2A-2B.) Conditioning (1-1)
103A-103B. (3A-3B.) Jogging (1-1)
104A-104B. (4A-4B.) Weight Training (1-1)
105. (5A.) 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. (8A-8B.) Basketball (1-1)
109A-109B. (9A-9B.) Soccer (1-1)
110A-110B. (10A-10B.) Volleyball (1-1)
111A-111B. (11A-11B.) Softball (1-1)
112A-112B. (12A-12B.) Field Hockey (1-1)
113A-113B. (13A-13B.) Flag Football (1-1)
114A-114B. (14A-14B.) Wrestling (1-1)
115A-115B. (15A-15B.) Track and Field (1-1)
116A-116B. (16A-16B.) Golf (1-1)
117A-117B. (17A-17B.) Archery (1-1)
118A-118B. (18A-18B.) Tennis (1-1)
119A-119B. (19A-19B.) Bowling (1-1)
120A-120B. (20A-20B.) Badminton (1-1)
121A-121B. (21A-21B.) Handball (1-1)
122A-122B. (22A-22B.) Fencing (1-1)
I. Percussion accompaniment: writing of percussion scores applied to all movement activities, dance ceremonies, and their contributions to the development of contemporary trends. A motivation body design, rhythm, and dynamics using several creative approaches. Emphasis on composition procedures in dance. 

2. (52.) Advanced Skill Techniques in Dance (1-1)

3. (53.) Introduction to Dance (2)

4. (54.) 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.

5. (60A-60B.) Rhythmic Gymnastics (1-1)

6. (64A-64B.) Modern Dance (1-1)

7. (65A-65B.) Synchronized Swimming (1-1)

8. (66A-66B.) Modern Dance (1-1)


10. (75.) Sociocultural Foundations of Physical Activity (3)

Integrated approach to the understanding of the historical, philosophical, and sociological forces shaping the development of physical education and sport.

11. (90.) 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.

12. (98a-98b.) Selected Activities (1)

May be repeated with new activity for additional credit. See class schedule for semester offerings.

13. (99a-99b.) Women's and Coed Teams (1)

Meets more than three hours per week. Maximum credit four units.

B. Badminton
C. Basketball
D. Field Hockey
E. Golf
F. Gymnastics
G. Softball

14. (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.

15. (145.) Dance (Men) (2)

Four hours of activity. Competency development in dance. Emphasis on skills, movements, facilities and organizational procedures in dance.

16. (147a-147b.) Officiating Women's Sports (1-1)

Two hours of activity. Prerequisite: Consent of instructor. Practice in officiating techniques in women's sports leading to official's ratings:

A. Volleyball
B. Softball, Basketball. May be repeated once with new content.

17. (150a-150b.) Advanced Modern Dance (1-1)

Two hours of activity. Prerequisite: Physical Education 134B. Skill techniques. Compositional factors and devices. Materials of design, rhythm, and dynamics in group compositions. The use of percussion and various forms of accompaniment.

18. (152.) Advanced Skill Techniques in Dance (1)

Two hours of activity. Prerequisite: Consent of instructor. Progressively difficult dance techniques using several creative approaches. Emphasis on motivation, body design, rhythm, and dynamics.

19. (153.) Introduction to Dance (2)

Dance as an art form with emphasis on the development of contemporary trends; American dance personalities and their contributions.

20. (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.
activity in modern American society. The role and significance of sport and physical
362. (162.) Exercise Physiology Laboratory (1)
353. (153.) Dance Production (3)
352. (152,) Workshop In Dance (1-2)
351. (151.) Dance Composition (Modern Forms) (3)
350. (150.) Dance Composition (Preclassic Forms) (3)
349. (149.) Special Study (1-3)
348. (148.) Supervised Field Experience (1-3)
347. (147.) Workshop In Physical Education (1-2)
346. Experimental Topics (1-4)
345. (145.) Practicum: Physical Education Activities for Secondary Schools (2)
4. Combatives (Men)
K. Speedball, Softball, Touch Football (Men)
J. Tennis.
H. Gymnastics (Women)
G. Gymnastics (Men)
F. Modern Dance
E. Ballroom Dance
D. Folk Dance
C. Track and Field, Softball (Women)
B. Track and Field (Men)
A. Weight Training, Physical Fitness
Programs in the public schools. Includes curriculum development, program content, legal bases, materials, facilities and constraints in the discipline of physical education.
382A-382B. (182A-182B.) Administration of Interscholastic Sports and
Extracurricular Activities (3-3)
381. (151.) Dance Composition (Modern Forms) (3)
Two lectures and two hours of activity.
Prerequisites: Physical Education 152 and 154.
Compositions based on a study of preclassical dance forms as a contribution to form in
temporary dance. Study of the music of the period. Critical evaluation of group and individual
compositions.
380. (150.) 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.
Prerequisites: Biology 362 and Zoology 108.
379. (157.) Contemporary Socio-cultural Aspects of Physical Activity (3)
Curriculum and social factors influencing the role and significance of sport and physical
activity in modern American society.
378. (155.) Modern Dance Lab
377. (154.) Applied Anatomy and Kinesiology (3)
Prerequisites: Biology 362 and Zoology 108.
Anthropology, sociocultural and environment, with emphasis on movement analysis. Muscle groups
and their functional relationships. Application of simple mechanical principles to movement analysis.
376. (153.) Biomechanics of Human Movement (2)
Prerequisite: Zoology 108.
Mechanical principles as applied to movement; analysis and application to selected motor skills.
375. (152.) Prevention and Rehabilitation of Injuries to Athletes (2)
One lecture and three hours of laboratory.
Prerequisites: Physical Education 560 and 561.
P7. Prevention and care of athletic injuries. Sports safety and effects of environment on health and
welfare of the athlete. First aid, use of prescribed modalities.
587. (167.) Adapted and Special Physical Education (2)
Prerequisites: Physical Education 560 and 561.
Adaptation of programs for physically handicapped individuals, including prescribed exercises, activities and evaluation.

570. (170.) Psychological Bases of Physical Education (3)
Prerequisite: Psychology 101.
Psychological parameters related to physical performance and the acquisition of motor skills.

585. (185.) Measurement and Evaluation in Physical Education (3)
Two lectures and two hours of activity.
Elements of statistical techniques applicable to physical education criteria for test selection, construction and evaluation of tests; and the administration of a testing program in physical education.

GRADUATE COURSES
Refer to the Graduate Catalog.

Physical Science
In the College of Sciences

Faculty
Emeritus: Watson
Chairman: Shull
Professors: Dessel, Merzberger, Metzger, Shull
Associate Professors: Dowler, Feher, Ingman, Pieger, Springer, Wallace
Assistant Professors: May, Thompson

Offered by the Department
Master of Arts degree in physical sciences for teaching.
Teaching major in the physical sciences for the single subject teaching credential.
Minor in physical science.

Physical Science for the Single Subject Teaching Credential
The requirements for the single subject teaching credential in physical sciences are in the process of being revised. For further information consult the department.

Physical Science Minor
The minor in physical science consists of a minimum of 15 units selected from astronomy, chemistry, geology, physical science and physics with the approval of the department adviser. Nine of the 15 units must be in upper division courses, six units of which must be taken in physical science. Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

100A-100B. (24-29) Physical Science (3-3) I, II
Introduction to concepts and processes in science intended to show why science is essential to a liberal education by recognizing relationship with other areas of knowledge such as philosophy, literature, fine arts, economics. See class schedule for emphasis which varies with instructor. Physical Science 100A not open to students with credit in Physical Science 102 or 210A.

102. (1.) Physical Science with Laboratory (4) I, II
Six hours of lecture and laboratory.
Description same as Physical Science 100A except that laboratory activity is fully integrated with lecture material. Experiments and observations are done when relevant to the subject discussed. Satisfies general education requirement in physical science including laboratory. Not open to students with credit in Physical Science 100A or 210A.

103. (3) Experimental Methods in Physical Science (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physical Science 100A.
Methods in physical science as illustrated by the use of significant examples from the various disciplines. The technique of observation, measurement and discovery of relationships. Fuills the general education laboratory requirement in the natural science area.

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.

120. (55) Technology and Human Values (3) I, II
Prerequisite: Physical Science 102.
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.
**UPPER DIVISION COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites/Restrictions</th>
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<tr>
<td>305-310</td>
<td>Modern Physical Science</td>
<td>3</td>
<td>At least one college-level course in the physical sciences or life sciences.</td>
</tr>
<tr>
<td>310-315</td>
<td>Contemporary Problems in Physical Science</td>
<td>3-4</td>
<td>Prerequisites: At least one college-level course in the physical sciences or life sciences.</td>
</tr>
<tr>
<td>311-315</td>
<td>History of Science</td>
<td>3</td>
<td>Prerequisites: Completion of minimum general education requirements in science and six units of history.</td>
</tr>
<tr>
<td>316</td>
<td>History of Science</td>
<td>3</td>
<td>Prerequisite: Physical Science 315.</td>
</tr>
<tr>
<td>317</td>
<td>Development of Scientific Thought</td>
<td>3</td>
<td>Prerequisites: Six units from astronomy, chemistry, geological sciences, physical science, or physics, and Mathematics 121.</td>
</tr>
<tr>
<td>318</td>
<td>Physical Oceanography</td>
<td>3</td>
<td>Prerequisites: Chemistry 200, 200L, Mathematics 140; Physics 115A or 124A.</td>
</tr>
<tr>
<td>400</td>
<td>Seminar</td>
<td>2-3</td>
<td>A directed study of a topic to be chosen by instructor and announced in class schedule.</td>
</tr>
<tr>
<td>412A-412B</td>
<td>Processes and Inquiry in Physical Science</td>
<td>3-4</td>
<td>Three lectures and two hours of activity.</td>
</tr>
<tr>
<td>422A-422B</td>
<td>Curricula in Physical Science</td>
<td>3-3</td>
<td>Two lectures and three hours of laboratory.</td>
</tr>
</tbody>
</table>

**GRADUATE COURSES**

Refer to the Graduate Catalog.
Chemical Physics Major

With the B.S. Degree in Applied Arts and Sciences

Preparation for the major. Chemistry 200, 200L, 201, 201L, or 204A-204B, 231, 231L, and 251; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L. (43 units.)


Physics Minor

The minor in physics consists of a minimum of 15 units in physics, six units of which must be in upper division courses.

Courses in the minor may not be counted toward the major.

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 School of Education.

The requirements for the single subject teaching credential in physical sciences which includes the area of physics are being revised. For further information consult the department.

LOWER DIVISION COURSES


107. (5.) Introductory Physics (3) I, II

Prerequisite: Concurrent registration in Physics 107L.

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, 124A-124B, 195, 195L, 196, 196L, 197, 197L, or 198, 198L.

107L. Introductory Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Concurrent registration in Physics 107. Physics 107 and 107L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

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. (1A-1B.) 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. Not open to students who have had high school physics.

This course is for students in those liberal arts and preprofessional courses not requiring physics with calculus. Physics 115A is not open to students with credit in 124A or 195, 195L; 115B is not open to students with credit in 124B, 196, 196L, 197, 197L, or 198, 198L.

124A-124B. (2A-2B.) General Physics (3-3) I, II

Prerequisites: Completion of high school physics. Physics 124A is prerequisite to 124B.

Recommended. For Physics 124A, concurrent registration in 125A; for Physics 124B, concurrent registration in 125B.

This course is for students in those liberal arts and preprofessional courses not requiring physics with calculus. Physics 124A is not open to students with credit in 115A or 195, 195L; 124B not open to students with credit in 115B, 196, 196L, 197, 197L, or 198, 198L.
125A-125B. (3A-3B) Physical Measurements (1-1) I, II
Three hours of laboratory.
Prerequisite for 125A: Credit or concurrent registration in Physics 124A.
Prerequisite for 125B: Physics 125A and credit or concurrent registration in Physics 124B.
A laboratory course to accompany Physics 124A-124B. Semester I: Properties of matter, mechanics, heat and sound. Semester II: Electricity, magnetism and light. Physics 125A is not open to students with credit in 115A or 195, 195L; 125B not open to students with credit in 115B, 196, 196L or 197, 197L.

149. (11.) Special Topics in Physics (1-2) I, II
Prerequisite: Credit or concurrent registration in Physics 115B, 124B, or 196, 196L, or credit in Physics 107, 107L. 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.

194A-194B. Fundamentals of Physics (3-3) I, II
Prerequisite: Completion of high school physics and credit or concurrent registration in Mathematics 122 or 150.
Course provides a thorough basis in mechanics, heat, electricity, magnetism, optics, and modern physics in a two-semester calculus-based sequence.

195. (4A.) Principles of Physics (3) I, II
Prerequisites: Completion of high school physics and credit or concurrent registration in Mathematics 150; Concurrent registration in Physics 195L. Certain students may, with consent of the Department, substitute credit in Mathematics 122 for the indicated Mathematics courses.
This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics, wave motion, heat, electricity and light. (Formerly numbered Physics 195A.)

195L. Principles of Physics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Physics 195. Physics 195 and 195L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

196. (4B.) Principles of Physics (3) I, II
Prerequisites: Physics 195, 195L and credit or concurrent registration in Mathematics 151; Concurrent registration in Physics 196L. Certain students may, with consent of the Department, substitute credit in Mathematics 122 for the indicated Mathematics course.
This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics, wave motion, heat, electricity and light. (Formerly numbered Physics 196B.)

196L. Principles of Physics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Physics 196. Physics 196 and 196L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

197. (4C.) Principles of Physics (3) I, II
Prerequisites: Physics 196, 196L, or 196, 198L, and credit or concurrent registration in Mathematics 152; Concurrent registration in Physics 197L. Certain students may, with consent of the Department, substitute credit in Mathematics 122 for the indicated Mathematics course.
This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics, wave motion, heat, electricity and light. (Formerly numbered Physics 197C.)

197L. Principles of Physics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Physics 197, Physics 197L and 197L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

198. (4E.) Principles of Physics for Engineers (3)
Prerequisites: Completion of high school physics or equivalent and credit or concurrent registration in Engineering Mechanics 200; Concurrent registration in Physics 198.
Designed to prepare the engineering student for Physics 197 without duplication of the material on mechanics present in the engineering curriculum. Open only to engineering majors. Not open to students with credit in Physics 196, 195L, or 196, 196L. (Formerly numbered Physics 198E.)

198L. Principles of Physics for Engineers Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Physics 198. Physics 198 and 198L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

205. (73.) Introductory Electronics (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Physics 115B, or 124B and 125B, or 196, 196L, and Mathematics 122.
Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 311.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

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

302. (118.) Nuclear Energy (2)
Prerequisite: Physics 107, 107L or 115B, or 124B and 125B, or 197, 197L.
Nuclear sources of energy, introduction to nuclear reactors, radiation problems associated with nuclear reactors and devices, plowshare, radioactivity in the environment.

303. (121.) Radiation Physics (3)
One lecture and six hours of laboratory.
Prerequisite: Physics 115B, or 124B and 125B.
X-rays, radioactivity, interaction of radiation with matter, and methods of measurement. May not be used in the physics major.

304. (111.) Concepts in Modern Physics (3) I, II
Prerequisites: Physics 107, 107L, 115B, or 124B.
Modern developments in physics for nonphysics majors, including relativity, introductory quantum theory, and atomic, nuclear and solid state physics.

305. (102.) Optics (3)
Prerequisite: Mathematics 340A.
Reflection, refraction, dispersion, interference, diffraction, double refraction and polarization, with applications to optical instruments, wave propagation, radiation, spectra and the nature of light.

307. (107.) Optical Design (3)
Prerequisite: Physics 197, 197L.
Ray tracing, aberrations, matrix methods, optical instrumentation.

311. (103.) Electronics for Scientists (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Physics 115B, or 124B and 125B, or 196, 196L; and Mathematics 122; and upper division standing in one of the physical or life sciences.
Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 215.

313. (104.) Advanced Electronics (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Physics 215 or 311.
Conventional and operational amplifiers, oscillators, pulse and digital electronics, with emphasis on their use in the modern physics laboratory.

315. (123.) Methods of Electronic Instrumentation (2)
Six hours of laboratory.
Prerequisite: Physics 115B, or 124B and 125B, or 196, 196L.
AC and DC circuits, diodes, transistors, operational amplifiers, digital electronics, and detection systems (including nuclear counting). Designed to introduce science majors to modern electronic instrumentation. May not be used in the physics major.
350A-350B. **Classical Physics (3-3)** I, II
Prerequisites: Physics 197, 197L and credit or concurrent registration in Mathematics 340A.
Semester I: Newtonian mechanics and wave motion. Semester II: Electromagnetics and statistical mechanics.

354A-354B. **Modern Physics (3-3)** I, II
Prerequisites: Physics 197, 197L. Physics 354A is prerequisite to 354B.
Semester I: Atomic and molecular physics, solid state physics, atomic spectroscopy and introductory quantum mechanics. Semester II: Kinetic theory, classical and quantum statistics, and thermal radiation.

357. **Advanced Physical Measurements (3)**
One lecture and six hours of laboratory.
Prerequisites: Physics 197, 197L, and credit or concurrent registration in Physics 215 or 311. A course stressing laboratory experiments and measurements chosen from the major areas of physics.

400. **Electromagnetic Theory (3)** I, II
Prerequisites: Mathematics 340B, Physics 350B and 354B.

408. **Advanced Mechanics (3)** I
Prerequisites: Mathematics 340B and Physics 350B.
Special theory of relativity, generalized coordinates, Lagrangian and Hamiltonian formulations, normal coordinates, theory of vibrations and introduction to continuum mechanics.

413. **Electronic Instrumentation (2)** I
Six hours of laboratory.
Prerequisites: Physics 313 and credit or concurrent registration in Physics 512.
Transducers, clocks and counters, active and digital filters, look-in detection, analog-to-digital (A/D) and digital-to-analog (D/A) conversion, digital readout devices with emphasis on their use in modern laboratories.

415. **Techniques of Scientific Instrumentation (3)** II
One lecture and six hours of laboratory.
Prerequisites: Physics 197, 197L, Nuclear and optical instrumentation, low temperature and high vacuum techniques, magnet technology.

416. **Theory of Scientific Instrumentation (3)** I
Prerequisites: Physics 215 or 311, and Mathematics 152.
Transducers, noise, signal-to-noise ratio improvement, lock-in detection, signal averaging, time-domain/frequency-domain analysis, the discrete Fourier Transform, digital filtering and processing of experimental data.

418. **Microcomputer interfacing (3)** II
Two lectures and three hours of laboratory.
Prerequisites: Physics 313.
Theory and practice of microcomputer control and interfacing techniques. Elementary machine language programming, computer control of experiments, basics of ADC and DAC, information theory, and microcomputer architecture will be covered.

431A-431B. **PSSC and PPC Physics (4-4)**
Three lectures and discussions and three hours of laboratory.
Prerequisite: Physics 115B, or 124B and 125B.
A new approach to the study 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.

496. **Advanced Physics (1-4)** I, II
Prerequisites: Consent of instructor. Selected topics in classical and modern physics. May be repeated with the consent of the instructor. Maximum credit six units.

498A. **Senior Research (1)** I, II
One discussion period and two additional hours per week to be arranged.
Prerequisites: Senior standing in physics and an acceptable plan for graduation within one year. Selection and design of individual research project. Oral and written progress reports.

498B. **Senior Research (2)** I, II
Two discussion periods and four additional hours per week to be arranged.
Prerequisites: Physics 498A with grade of C or better. Laboratory work, progress reports, oral and written final reports.

499. **Special Study (1-3)** I, II
Individual study or laboratory work on a special problem in physics selected by the student. Each student will be assigned a member of the staff who will supervise his work. Credit, hours and topics to be arranged in each case. Maximum credit six units.

**UPPER DIVISION COURSES**

(Also Acceptable for Advanced Degrees in the Major Area)

510. **Introductory Quantum Mechanics (3)** I, II
Prerequisites: Mathematics 340B, Physics 350B and 354B.
The physical basis of the quantum theory and its mathematical formulation in terms of Schroedinger's wave equation.

532. **Solid State Physics (3)** II
Prerequisites: Mathematics 340B, Physics 350B and 354B.
Elastic, thermal, electric, magnetic and optical properties of solids. Introduction to the energy band theory of solids, with applications to dielectrics, semiconductors and metals.

541. **Senior Physics Laboratory (2)** I, II
Six hours of laboratory.
Prerequisite: Physics 357.
Advanced experimental measurements in the field of classical and modern physics, in one of the following areas: acoustics, nuclear physics, heat and thermodynamics, advanced electronics, electricity and magnetism, microwaves and solid state physics. Combinations to two areas in one semester may be taken with the consent of the instructor. May be repeated with new content. Maximum credit four units.

542. **Acoustics (3)** I
Prerequisites: Physics 350B and 357.

552. **Modern Optics (3)** I
Prerequisites: Mathematics 340B and 354B.
Optics of solids, coherence and partial coherence theory. Fourier optics, holography.

553. **Modern Optics Laboratory (2)** I, II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Physics 552.
Experiments in various fields of modern optics such as holography, Fourier spectroscopy, spatial filtering, nonlinear effects and coherence measurements. May be repeated with new content with the approval of the instructor for a maximum of four units.

561. **Nuclear Physics Laboratory (3)** I
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.

564. **Nuclear Physics (3)** I, II
Prerequisite: Physics 510.
Nuclear Phenomena, theory of the nucleus, cosmic rays, and high-energy reactions of particles.

570. **Relativity (3)**
Prerequisites: Mathematics 149 or 520, 531 or 340B, and Physics 350B and 354B.
Relative coordinates, Lorentz transformation, covariant formation of the laws of physics, applications of special relativity, introduction to curved space time, cosmology.

**GRADUATE COURSES**

Refer to the Graduate Catalog.
Political Science

In the College of Arts and Letters

Faculty
Emeritus: Leffer
Chairman: Terrell
Professors: Andrain, Crain, Feinerbend, Generales, Gripp, Janssen, Johns, Kahng, Miles, Nesvoid, Patgott, Schultze

Associate Professors: Anderson, Conniff, Funston, Hobs, Lawin, Terrell

Assistant Professors: Fairlie, Jones, Keiser, Loweman, Soule

Lecturers: Binion, Dunkle, Goldstein, Heck, Kasper, Strand

Offered by the Department

Master of Arts degree in political science.

Minor in political science.

Political 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 on page 63 of this catalog.

Students majoring in political science must complete a minor in another field to be approved by the chairman of the major department.

Preparation for the major: Political Science 110, 120, 130 and three units of either statistics or logic. (12 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 "Graduation Requirements" on page 67.

Major: A minimum of 24 upper division units to include (a) three units in Political Science 340 or 497, and (b) 21 upper division units in political science distributed among at least four of the groups listed below, provided that at least three units shall be taken in Group I.

- Group I: Political Theory. Courses numbered 302 to 310 and 501A to 514.
- Group II: Research Methods. Courses numbered 515A-515B.
- Group III: Politics. Courses numbered 320 to 344 and 522 to 543-S.
- Group IV: Public Law. Courses numbered 345 to 354 and 546 and 547A-547B.
- Group V: Comparative Government. Courses numbered 370 and 374 and 555 to 571.
- Group VI: International Relations. Courses numbered 575A to 594 and 576 to 595.

Political Science Minor

The minor in political science consists of a minimum of 15 units of political science, to include Political Science 110, and 120 or 130, and nine units in upper division courses. Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

110. (1.) Introduction to Political Science (3) I, II
Basic concepts of political science including an introduction to the scope of the discipline and representative methods of acquiring political knowledge. Illustrative materials drawn primarily from the American experience.
Completion of both Political Science 110 and 120 will meet all requirements in American institutions.

120. (2.) Introduction to American Government and Politics (3) I, II
The origin and development, structure and operation of the government of the United States, national, state and local.
Completion of both Political Science 110 and 120 will meet all requirements in American institutions. Political Science 120 will meet the requirements in U.S. Constitution and California government.

130. (3.) Introduction to Comparative Government (3) I, II
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.

140. (4.) Elementary Statistics for Political Science (3)
Prerequisites: Political Science 110 and 120, and Mathematics 103 or qualification on 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.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Resolved Primarily for Undergraduates)

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

395-S. (195-S) Institute of Public Affairs (1-3) S
Study of selected phases of American or Comparative Government. May be repeated with new content and consent of instructor. Maximum credit six units.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

497. (197.) Investigation and Report (3) I, II
Analysis of special topics. Admission by permission of instructor.

499. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisites: Twelve upper division units in political science and consent of the instructor.

Political Theory (Group I)

302. (112.) Modern Political Thought (3) I, II
Major writers of political thought in the last two centuries, including Burke, J.S. Mill, Freud, Marx, Weber and Sarhe. The following topics may be covered: conservatism, liberalism, utilitarianism, socialism, fascism, positivism and existentialism.

303. (103.) Socialist Political Thought (3) I, II
Prerequisites: Political Science 110 or 120, and 302 or 501B.
Socialist thought from an historical perspective.

310. (110.) Politics and the Arts (3) I, II
Prerequisites: Political Science 110 and 120.
The contribution of the artistic media to the activity and understanding of politics. This course does not meet the departmental requirements for majors of a course from Group I.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

501A-501B. (111A-111B) Theory of the State (3-3)
Prerequisite: Political Science 501A is prerequisite to 501B.
The nature of the state, its organization and activities, and its relation to the individual and other states.

504. (104.) Socialist Political Thought (3) I, II
Prerequisites: Political Science 110 or 120, and 501B or 302.
Selected topics in socialist thought.

505. (105.) American Political Thought (3) I, II
The development of American ideas concerning political authority from the period of colonial foundation to the present time.

513. (113.) The Theory of Political Inquiry (3)
Prerequisites: Political Science 110, 120 and 130.
Philosophical bases of science with reference to political science: Concepts, concept formation, theory-building and verification.
514. (114) Problems in Political Theory (3)
Prerequisite: Six upper division units in political theory.
Research methods in political theory; intensive development of selected issues.

Research Methods (Group II)

515A-515B. (100A-100B) Research Methods in Political Science (3-3) I, II
Prerequisite: Political Science 140. 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.

Politics (Group III)

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

320. (115) American Institutions (3) I, II
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 505, 321 or 522, will also meet requirements in American history, institutions and ideals.
Not open to students with credit in Political Science 120.

321. (117) State Politics (3) I, II
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.

325. (121) Political Behavior (3) I, II
Prerequisite: Political Science 140.
Social and attitudinal variables in political behavior. Quantitative research data as used in electoral
studies.

326. (122) Political Communication (3) I, II
Prerequisite: Political Science 120.
Communication as a political process; the effects of political communications on individuals and
groups.

332. (132) Minority Political Thought and Politics in the United States (3) I, II
Political attitudes, behavior and thought of selected minority groups.

335. (130) Government and Public Policy (3)
Prerequisite: Political Science 120.
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 policy.

338. (125) The Legislative Process (3) I, II
A detailed analysis of legislatures. Special attention will be devoted to the impact of dynamic
factors on formal procedures.

340. (128) Internship in Politics (2-6) I, II, S
Prerequisite: Three upper division units within Group 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.

341. (133) Advanced Field Research (3) I, II
Prerequisite: Consent of instructor and Political Science 335 or previous experience in field
research.
Students will design and organize field research projects.

344. (131) Special Problems in American Politics (3) I, II
Prerequisite: Political Science 110 and 120 and three upper division units within Group III.
Intensive exploration of selected issues in the field of American politics.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

522. (118) Urban Politics (3)
Prerequisite: Political Science 110 or 120.
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. (119) Community Political Behavior (3)
Prerequisite: Political Science 110 or 120.
The studies 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. (120) Political Parties (3) I, II
Prerequisite: Political Science 120 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. (126) Political Groups and Movements (3) I, II
Prerequisite: Political Science 110 or 120.
Pressure group activity; lobbies, mass movements; factors which explain origins and motivations of
group behavior, votes, money, information, protest as political resources; theories of pluralism, power
elite and mass society; class and ethnic politics.

536. (124) The American Presidency (3) I, II
Prerequisites: Political Science 110 and 120.
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. (129) The Politics of Bureaucracy (3) I, II
Prerequisites: Political Science 110 and 120.
An analysis of the bureaucracy as an actor in the political system.

543-S. (123-S) Contemporary American Politics (3) S
A consideration of a selected group of current major political problems in terms of their possible
future implications and of their relationship to established American democratic principles and ideals.

Public Law (Group IV)

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

345. (136) Constitutional Government (3) I, II
Prerequisites: Political Science 110 and 120.
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. (155) The Supreme Court and Contemporary Issues (3) I, II
Recent decisions of the Supreme Court of the United States and their relationship to contemporary
political and social issues.

354. (137) Special Problems in Public Law (3) I, II
Prerequisites: Political Science 110 and 120, and three upper division units within Group IV.
Intensive exploration of selected issues in the field of constitutional law.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

546. (138) 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. (139A-139B.) 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) I, II
Prerequisite: Political Science 110 or 120 or three upper division units within Group IV.
Theoretical foundations of law; relationship between legal and political philosophy; development of law and legal systems.

Comparative Government (Group V)
(Extended Primarily for Undergraduates)

370. (162.) Political Violence (3)
Prerequisite: Political Science 110, 120 or 130.
Underlying conditions, expressions and consequences of violence within political systems.

374. (186.) Special Problems in Comparative Politics (3) I, II
Prerequisites: Political Science 110, 120, 130 and three upper division units within Group V.
Intensive exploration of selected issues in the field of comparative politics.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

555. (180.) Comparative Political Systems (3) I, II
Prerequisite: Political Science 130.
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. (185.) Governments of Continental Europe (3) I, II
The political systems of countries of western continental Europe.

559. (181.) Government of the Soviet Union (3) I
Theory and practice of government in the Soviet Union, with some attention to foreign affairs.

561. (191.) Governments and Politics of the Developing Areas (3) I, II
Prerequisite: Political Science 110 or 130.
Internal political systems, governmental structures and the foreign policies of developing nations.

562. (187.) Governments and Politics of the Far East (3)
The internal political structure and foreign policies of China, Japan, and Korea.

563. (189.) Government 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.

564. (192.) Political Change in Contemporary Africa (3) I, II
General pattern of nationalism in Africa south of the Sahara. Theories of social change and general features of contemporary African political development.

565. (188.) Governments and Politics of the African States (3) I
Domestic and international politics of specific African states.

566. (194.) Political Change in Latin America (3)
Prerequisite: Political Science 110 or 130.
General pattern of politics and political development in Latin America with an emphasis on those features which condition domestic and foreign policy making.

567. (195.) Political Systems of Latin America (3)
Prerequisite: Political Science 566.
Domestic and international politics of selected Latin American states.
Portuguese

In the College of Arts and Letters

Faculty
Chairman: Segade
Lecturers: Pickslay, Silverman

Offered by the Department of Spanish and Portuguese Languages and Literatures
Minor in Portuguese.
Courses in Portuguese.
Major work 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 552A-552B.
Courses in the minor may not be counted towards the major.

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 as the equivalent of Portuguese 102; and four years as the equivalent of Portuguese 203. 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 Portuguese will not receive credit for taking lower division courses in Portuguese except with advance approval from the department.

101. (1.) Elementary (4)
Four lectures and one hour of laboratory.
Pronunciation, oral practice, reading on Luso-Brazilian culture and civilization, essentials of grammar.

102. (2.) Elementary (4)
Four lectures and one hour of laboratory.
Prerequisite: Portuguese 101.
Continuation of Portuguese 101.

203. (3.) Intermediate (4)
Prerequisite: Portuguese 102.
A practical application of the fundamental principles of grammar. Reading in Portuguese of cultural material, short stories, novels or plays; oral practice.

204. (4) Intermediate (4)
Prerequisite: Portuguese 203.
Continuation of Portuguese 203.

210. (10.) Conversation (2)
Prerequisite: Portuguese 102.
Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays.

211. (11.) Conversation (2)
Prerequisite: Portuguese 210.
Continuation of Portuguese 210.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor’s degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Intended Primarily for Undergraduates)

301A-301B. (101A-101B.) Advanced Oral and Written Composition (3-3)
Prerequisite: Portuguese 204.
Oral and written composition in Portuguese, based on models from modern Portuguese and Brazilian literature.

485. (185.) Selected Studies (3)
Topics in Luso-Brazilian language, literature, culture and linguistics.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor’s degree in courses under this number of which no more than three units may be applicable to general education requirements.

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

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

534. (134.) Portuguese Literature (3)
A study of important movements, authors and works in the literature of Portugal from its beginnings to the present.

535. (135.) 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, McColm, Paffter, Steinmetz, Treat, Turner, Voeks
Chairman: Grossberg
Associate Professors: Bzysyn, D., Dafran, Fanzini, Graham, Hornbeck, Litownik, Lynn, Mollenauer, Plotnik, Poxams, Rodin, Sand, Smith
Assistant Professors: Ferson, Kaplan, R., McCardick, Price, Saccuzzo, Spinetta
Lecturers: Borges, Brown, Bryson, R., Buchanan, Hillyard, Howe, Scolay, Van Kreveld

Offered by the Department
Master of Arts degree in psychology.
Master of Science degree in psychology.
Minor in psychology.

Psychology Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 63 of this catalog.
A minor is not required with this major.

Two plans are provided for the major in psychology: Plan A for those students who wish to extend their liberal arts education in the field of psychology; and Plan B for those students expecting to pursue the study of psychology beyond the A.B. degree.

Plan A

Plan A is for a nonprofessional major in psychology and is designed to provide the student with a greater understanding of human behavior as the emphasis in his liberal arts education. The recommended pattern of courses for this program is not designed to facilitate graduate and professional study in psychology.

Preparation for the major, Psychology 101, 210 and 260, (9 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 "Graduation Requirements" on page 67.

Major, A minimum of 24 upper division units in psychology to include Psychology 330, 340, 350 and 351. It is expected that each student under Plan A will select, with the assistance of his adviser, a pattern of courses in line with his particular objectives in pursuing Plan A.

To facilitate the purpose of Plan A the following courses in other departments are recommended as electives: Biology 350, 549; Economics 330; and courses in family studies and consumer sciences.

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 "Graduation Requirements" on page 67.

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 or 418; and ten units selected from courses in consultation with the departmental adviser.

Psychology Minor

The minor in psychology consists of a minimum of 15 units in psychology, nine units of which must be in upper division courses.
Courses in the minor may not be counted toward the major.

Approved Courses for Liberal Studies Majors (Group B)

Lower Division Courses: Psychology 101, 110, 210 and 260.
Upper Division Courses: Psychology 330, 340, 350, 351 and 454.

LOWER DIVISION COURSES

101. (10.) Introductory Psychology (3) I, II
Prerequisite: Psychology 101.

110. (10.) The Evaluation of Psychological Literature (3) I, II
Designed to increase the nonpsychologist's ability to evaluate psychological and quasi-psychological writings. Topics include methods of generating information, concept of controlled observations, interpretation of data, pitfalls in decision making and aids to critical thinking. Practical experience in evaluation will be obtained through the criticism of current articles and other activities.

150. (12.) Psychology of Individual Adjustment (3) I, II
Prerequisite: Psychology 101.
An examination and interpretation of the factors which go into the making of the person as he adapts himself to the social world about him. The development of the normal personality.

210. (40.) Principles of Learning and Perception (3) I, II
Prerequisite: Psychology 101.
The nature of psychological inquiry. Emphasis on principles and basic experimental data of learning and perception.

260. (50.) Introduction to Physiological Psychology (3) I, II
Prerequisite: Psychology 101.
Physiological mechanisms underlying the psychological phenomena of sensation, perception, emotion, motivation, learning and psychosomatic disorders.

270. (70.) Statistical Methods in Psychology (3) I, II
Prerequisites: Psychology 101, and Mathematics 103 or qualification on the mathematics placement examination.
Quantitative methods in psychology. Measures of central tendency and variability, graphic methods and percentiles, linear correlation, applications of the normal probability curve, chi-square, and an introduction to statistical inference.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Added Primarily for Undergraduates)

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

301-S. (180-S) Contemporary Problems in Psychology (1) S
Lectures open to the public.
A series of six weekly lectures by visiting psychologists on topics related to current research problems. Reading and reports required of students enrolled for credit. Maximum credit three units.

316. Operant Behavior (3)
Prerequisite: Psychology 210.
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.

317. Psychology of Verbal Behavior and Learning (3)
Prerequisite: Psychology 101 and consent of instructor.
Analysis of linguistic and cognitive processes within the context of social behavior.
320. (120.) Personnel and Industrial Psychology (3) I, II
Prerequisite: Psychology 101, and 270 or statistics in another field.
Psychological principles applied to industrial problems of selection, placement and training.

321. (123.) Organizational Psychology (3) I, II
Prerequisite: Six units of psychology.
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. (120.) Consumer Psychology (4)
Two lectures and six hours of laboratory.
Prerequisite: Three units of psychology, 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.

324. (124.) Engineering Psychology (3)
Survey of origin and basic data of engineering psychology.

325. (125.) Human Factors Psychology (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 101 and consent of instructor.
Experimental techniques and procedures in the application of synthetic behavioral criteria to the design, development, operation and maintenance of man-machine-environmental systems.
Government and industry job requirements, routines and practices.

326. (133.) Principles of Personal Interviewing (3)
Prerequisite: Psychology 101.
Psychological factors in interviewing; interviewing techniques. Supervised practice in interviewing for purposes of personnel selection, appraisal and development.

330. (106.) 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. Not open to students with credit in Elementary Education 372 and Family Studies and Consumer Sciences 270.

335. (107.) Psychology of Later Maturity (3) II
Prerequisite: Psychology 101.
The psychological, physiological, and sociological factors influencing behavior in the later years of life.

340. (145.) 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. (122.) Public Opinion Measurement (3) I
(Same course as Journalism 507)
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. (147.) Psychology of Contemporary Social Problems (3)
Prerequisite: Psychology 101.
Discussion of social issues and problems of importance to the contemporary world, from the point of view of psychological theory, method and knowledge.

350. (150.) Abnormal Psychology (3) I, II
Prerequisite: Six units of psychology.
The causes, symptoms, and modification of behavior disorders with emphasis on neurosis, psychosis, and personality disorder.

351. (131.) Psychology of Personality (3) I, II
Prerequisite: Six units of psychology.
Principles of personality functioning and adaptation.
432. (108.) Advanced Developmental Psychology (3) I, II
Prerequisite: Psychology 330.
Selected topics in the areas of infancy, childhood and adolescence.

446. (146.) Advanced Topics in Social Psychology (3)
Prerequisites: Psychology 210 and 340.
An intensive exploration of selected areas within social psychology. May be repeated with new content. Maximum credit six units.

451. (151.) Introduction to Clinical Psychology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350 and 405.
History and current status of the profession; professional ethics and interprofessional concerns; clinical assessment and prediction; theory and practice of behavior change.

452. (152.) Introduction to Counseling and Therapy (3) I, II
Two lectures and two hours of activity.
Prerequisites: Twelve upper division units in psychology to include Psychology 351 or 386 and 350.
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. (153.) 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 psychopharmacology.

454. (109.) Mental Deficiency (3) I, II
Prerequisite: One of the following: Psychology 330, Elementary Education 362 and Secondary Education 411, 412, or equivalents.
The nature and causes of mental retardation, including the psychological effects of brain injury. Characteristics of the mentally defective.

455. (155.) Psychology of Human Sexual Behavior (3)
Prerequisites: Psychology 330 and 350.
Evaluation of behavioral and physiological data of normal, aberrant, and dysfunctional human sexual behavior, including description of available treatment methods.

460. (142.) Physiological Psychology (3) I, II
Prerequisites: Psychology 210 and 260 and three units of biology; or nine units of biology.
An evolutionary approach to the development of complex behavior in higher organisms and man. The neurophysiology of emotion, sleep, bodily needs, instinctive patterns of behavior, and of learning, brain and behavior disorders.

461. (141.) Neural Bases of Behavior (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 260 or six units in the biological sciences. Elements of neurology and psychobiology with emphasis on sensory, central, and motor mechanisms.

470. (170.) Advanced Statistics (3) I, II
Prerequisite: Psychology 270.
A 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.

471. (171.) Intermediate Correlational Analysis (3)
Prerequisite: Psychology 270.
Quantitative methods in psychology with emphasis on methods of correlation, multiple correlation, partial correlation, and factor analysis.

480. (177.) History of Psychology (3) I, II
Limited to psychology majors with senior standing.
The historical background of modern psychology.

481. (179.) Philosophical Issues in Psychology (3) II
Prerequisite: Twelve units of psychology.
Modern empiricism and the philosophy of science as related to issues in contemporary psychology.
Public Administration and Urban Studies

In the College of Professional Studies

Public Administration and Urban Studies is a member of the National Association of Schools of Public Affairs and Administration

Faculty
Emeritus: Love
Chairman: Kitchen
Professors: Bigger, Gazell, Gilbreath, Kitchen
Associate Professors: Boostrom, Clapp, Gitchell, Hamilton
Assistant Professors: Rea, Smith, Stock, Thompson, Walshok
Lecturers: Corso, Franklin

Offered by Public Administration and Urban Studies
- Master of City Planning degree.
- Master of Public Administration degree.
- Master of Science degree in criminal justice administration.
- Major in criminal justice administration with the B.S. degree in applied arts and sciences. (Refer to this section of the catalog on Criminal Justice Administration.)
- Major in public administration with the A.B. degree in applied arts and sciences.
- Minor in public administration.

Public Administration Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 63 of this catalog. A minor is not required with this major.

Preparation for the major. Nine units of social science, a three-unit course in statistics (May be taken in upper division), and Business Administration 180. (15 units.)

Major. A minimum of 36 upper division units to include Public Administration 301, 330 or 340, 341, 407 or 498, 550; and additional upper division courses selected with approval of the departmental adviser, including a three-unit course in statistics if not taken in the lower division. Within this program, students may elect to specialize in urban management. Interested students should seek guidance from an adviser in public administration.

Public Administration Minor

The minor in public administration consists of a minimum of 15 units, to include either a course in statistics or Business Administration 180, Public Administration 301 and three other upper division public administration courses selected with the guidance of an adviser in public administration.

Courses in the minor may not be counted toward the major.

Certificate in Public Administration

This certificate is designed primarily for persons who hold administrative or managerial positions or for those who seek to prepare for such responsibilities. Previous academic experience is not a prerequisite; nor need the program be accompanied by work toward a degree. Candidacy will be established by the director of the program. The awarding of the certificate requires completion of an approved pattern of eight courses with a minimum grade point average of 2.5 (C+).

For further information, consult the director, 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, 530 and 531.
2. **Public administration.** Most relevant are courses numbered Public Administration 301, 305, 310, 312, 330, 340, 341, 400, 402, 470, 530, 531, 540 and 580.
3. **Urban studies.** Most relevant are courses numbered Public Administration 320, 510, 512 and 520.

LOWER DIVISION COURSES

200. (90) The Urban Scene (3)
- Urban society as an environment in which people interact with such public institutions as municipal and county administrations, school districts, and special authorities; community control over institutions within the urban conglomerate; improving urban life styles.

299. (99) Experimental Topics (1-4)
- Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

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

301. (140) 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. (141) 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 with consent of instructor.

310. (143) 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. (142) Management of State Governments (3) I, II
- Administrative and constitutional problems of state management in the American federal system. Emphasis on California.

315. (153) 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. (160) Principles of Planning (3) I, II
- Plan, including its purposes, contents, and method of adoption.

330. (144) 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. (145) Administrative Behavior (3) I
- Social, psychological, and behavioral theories of organization; concepts of administrative leadership; organization and the individual; emphasis on governmental organizations.

341. (152) Administrative Management (3) I, II
- Prerequisite: Public Administration 301.
- 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.

415. (161) Field Studies in Government (3) II, S
- Prerequisite: Public Administration 301.
- Study of organization, policies and functions of selected government agencies. Discussion by responsible officers and inspection of work operations and facilities in government, public safety, responsibility and inspection of work operations and facilities in government, public safety, responsible officers and inspection of work operations and facilities in government, public safety, responsible officers and inspection of work operations and facilities in government, public safety.

441. Mathematical Notation in Public Administration (3) I, II
- Prerequisite: Public Administration 301.
- Mathematics and mathematical notation for analysis of public administration systems. Use of public administration literature to define and illustrate utilization of mathematical forms and expressions.

460. (147) Administration and Public Policy Development (3) I, II
- Process of formulating public policy with emphasis on the role of public agencies.
462. (135.) Selected Topics in Public Affairs (3)
Selected topics in the administration of public policy and problems of public administrative organization.

470. (136.) Administrative Law (3) II
The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

497. (197,) Investigation and Report (3) I, II
Analysis of special topics. Admission by permission of instructor.

498. (198,) Internship in Public Administration (2-6) I, II
Prerequisites: Public Administration 301, 341 and all lower division required courses; credit or concurrent registration in Public Administration 330 or 340 and 550; 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. (199,) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisites: Twelve upper division units in public administration and consent of instructor.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

510. (154.) 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. (148,) 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. (150,) Decision Making in the Urban Community (3) I, II
Prerequisite: Public Administration 310.
Processes of decision making in the management of urban communities.

530. (114.) 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. (115,) Governmental Employer-Employee Relations (3) I, II
Prerequisite: Public Administration 330.
Historical development, legal basis and organizational implications of governmental employer-employee relations; emphasis on California local government.

540. (156,) Public Administrative Systems Analysis (3)
Prerequisites: Public Administration 301 and a statistics course.
Systems and organization analysis; work standards and units; procedures analysis; administrative planning.

550. (162,) Fiscal and Budgetary Policy (3) I, II
Prerequisite: 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.

580. (149,) 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.
Recreation

in the College of Professional Studies

Faculty
Chairman: Peterson
Professors: Butler, Hanson
Associate Professor: Peterson
Assistant Professor: Duncan, Hutchinson, Namba
Lecturers: Geba, Hatcher, Olson, Ramos

Offered by the Department
Major in recreation administration with the A.B. degree in applied arts and sciences. Minor in recreation.

A cooperative education program is available on a selective basis, whereby a student alternates semesters of study and full-time, paid work experience during the final two years of college. This program normally results in a one-year delay in date of graduation. Students in the program profit from approximately one and one-half years of full-time work experience prior to graduation. Inquiries and applications should be directed to the Department Chairman.

Recreation Administration Major
With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 63 of this catalog. The major in recreation administration may be planned with an emphasis in one of the following four areas: (1) Leisure Agency Leadership, (2) Outdoor Recreation, (3) Park and Recreation Management, or (4) Recreation Rehabilitation. A minor is not required with this major.

Emphasis in Leisure Agency Leadership
Preparation for the major. Recreation 101, 104, 107, 110, 284; Music 102, Physical Education 141, 145; Psychology 101; Sociology 101. (28 units.)

Major. A minimum of 37 upper division units to include Recreation 340, 465 and 484 or 498; Industrial Arts 301; Journalism 480; Psychology 330. Nine units selected from Psychology 340, 347, 361, 454; Sociology 513, 514, 525, 557; eight units selected from Recreation 351; 475, 485; Art 587; Drama 310; History 540; Industrial Arts 402; Music 344, 345; Physical Education 322, 345.

Emphasis in Outdoor Recreation
Preparation for the major. Recreation 101, 104, 110; Biology 100, 100L; Botany 100; Economics 120; Geography 101; and six or more units selected from Anthropology 101; Engineering 150; Geological Sciences 100, 101; Zoology 150, 160. (28 units.)

Major. A minimum of 36 upper division units to include Recreation 465, 475, 485; Biology 420; Geography 370, 371, 575; Health Science and Safety 330; 12 units selected from Anthropology 541; Botany 312; Business Administration 350, 351; History 540; Industrial Arts 301; Journalism 480; Psychology 340; Sociology 550; Zoology 314, 350, 510, 515, 516, 517, 518 and 570.

Emphasis in Park and Recreation Management
Preparation for the major. Recreation 101, 104, 107, 110, 284; Psychology 101; Sociology 101; and four units selected from Art 101; Business Administration 210A, 290; Economics 120; Music 102; Physical Education 132A, 133A, 133B; Political Science 130; Speech Communication 191. (25 units.)

Major. A minimum of 38-46 upper division units to include Recreation 340, 465, 475, and 484 or 498; Industrial Arts 301; Journalism 480; Public Administration 301, 310; and nine units selected from Health Science and Safety 330; Psychology 330; Public Administration 320, 330, 341, 550; Sociology 514, 525, 557; and six units selected from Recreation 350, 351, 448, 449, 485; Botany 312; Geography 370, 371; History 540. (38-47 units.)

Recreation Minor
The minor in recreation consists of a minimum of 19 or 20 units to include two lower division units in art, dance, drama, or music. Recreation 101, 107, 110, 465, 484; and Drama 310 or Recreation 340. Recommended: Industrial Arts 301; Physical Education 322, 3450; Psychology 330; Public Administration 330 and Recreation 330. Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

101. (60) Community Recreation (3) I, II
Scope of community recreation; basic philosophy of leisure time agencies; organizations for youth; program planning, playground practices; basic systems of organizational and policy formation.

104. (40) Challenges of Leisure (3) I, II
Study of leisure and its impact on contemporary life; issues affecting recreation in today's urbanized society.

107. (70) Recreation Leadership (3) I, II
Two lectures and three hours of laboratory. Plan and conduct programs in social recreation, recreational dramatics, song leading, handicrafts and low-organized games. Principles of group leadership.

110. (60) Camp Leadership (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 for all aspects of organized youth camping. Required attendance at two week-end outings.

284. (94) Supervised Field Work (3) I, II Cr/NrC
Prerequisites: Credit or concurrent enrollment in Recreation 107 and 275 hours experience in recreation leadership. Observation and participation in community recreation leadership. Practical, volunteer experience in a variety of recreational settings. Minimum of one hour per week in class plus eight hours per week at an agency.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Identified Primarily for Undergraduates)

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

340. (140) Conduct of Recreational Sports (2) I, II
Two lectures plus outside practical experience in the conduct of recreational sports programs.

350. (150) Recreation in Medical Settings (3) I, II
Recreation activities to meet the needs of handicapped confined to private, State and Federal treatment centers. Designed for social welfare students, nurses, special education teachers, and physical recreationists.

351. (151) Recreation for Special Groups (3) I, II
Developing community recreation programs for special groups, such as aging, corrections, mentally handicapped, physically handicapped, disabled and/or others. Field observations may be required.
498. (198.) Internship in Recreation Administration (6) I, II, S Cr.....C

Prerequisite: Recreation 200. One lecture and eight hours of supervised activity. Minimum of 20-40 laboratory hours per week. Must be assigned to various governmental and private recreation agencies. Conducting recreation services, maintaining of recreational lands, waters, and structures. Use of natural and man-made resources in the environment.

499. (199.) Special Study (1-3) I, II

Individual study. Maximum credit twelve units. Prerequisite: Consent of special study adviser. Refer to the Graduate Catalog.
361. (106.) Honors Course (1-3) I, II
Prerequisite: Three units of religious studies.
A critical exploration of the relation of science to religious conceptions of human nature and destiny.

365. (116.) Religion and Ethical Problems (3)
Prerequisite: Religious Studies 301 or 306.
A critical exploration of the modern understanding of scriptural traditions in relation to individual and social ethical concerns.

480. Ways of Spiritual Transformation (3)
Doctrines and practices of metaphysical self-transformation; studies in readings selected from various world religions.

486. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

498. Senior Project (3)
Prerequisites: Twelve upper division units in religious studies with at least three units from Group I, three units from Group II, and three units from Group III. Individual conference and project plus seminar workshop in the comparative study of religious practices, doctrines, themes (such as religious ethics, mysticism), phenomenological studies in religions, etc.

499. (130.) Special Study (1-3) I, II
Prerequisite: Twelve upper division units in religious studies.
UPPER DIVISION COURSES

(A Also Acceptable for Advanced Degrees in the Major Area)

501. (121A.) Religions of India (3)
Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of India, especially Hinduism and Buddhism.

503. (121B.) 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.

506. (126A.) Scriptures of India (3)
Prerequisite: Religious Studies 200, 501 or 503; or six units of philosophy.
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.

508. (126B.) Scriptures of Far Eastern Traditions (3)
Prerequisite: Religious Studies 200, 501 or 503; or six units of philosophy.
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. (140.) The Oracular Tradition (3)
Prerequisites: Religious Studies 200 and 360, 361, 501, 503, 506 or 508.
Oracular traditions of East and West, with special attention to the I Ching and the Tarot.

520. (150.) 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.

522. (151.) Religion in America (3)
Prerequisite: Religious Studies 520.
Selected topics in religion in America, such as Desirn, transcendentallsm, pragmatism, church-state relations, Jewish identity, etc. May be repeated with new content. Maximum credit six units.

580. (180.) A Major Figure (3) I, II
Prerequisites: Religious Studies 100 or 200, and three upper division units in religious studies.
The major figure in the American religious tradition. May be repeated with new content. Maximum credit six units.
376 / Religious Studies

581. A Metaphysical Doctrine (3) I, II
Prerequisites: Philosophy 102, Religious Studies 100 or 200, and three upper division units in 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. Maximum credit six units.

377 / Russian

In the College of Arts and Letters

Faculty
Chairman: 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.
Minor in Russian.
Teaching major in Russian for the single subject teaching credential in foreign languages.

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 on page 63 of this catalog. 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 (or 105 in lieu of 101 and 102), 203, 204, 210, and 211. (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 301A-301B, 311A-311B, and 12 units in period literature excluding Russian 490A-490B, 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 204 and six units of upper division courses.
Courses in the minor may not be counted toward the major.

Russian Major

For the Single Subject Teaching Credential in Foreign Languages
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.
This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in Russian is required for the degree.

Preparation for the major. Russian 101, 102 (or 105 in lieu of 101 and 102), 203, 204, 210, and 211. (20 units.)

Teaching major. A minimum of 30 upper division units in Russian to include 301A-301B, 311A-311B, 570, 580, 581; six units of electives in Russian; and European Studies 330 or 331.

Proficiency Examination: Before taking a student teaching assignment in Russian, the candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of Germanic and Slavic Languages and Literatures. The candidate must consult with the chairman of the Department of Germanic and Slavic Languages and Literatures concerning this examination.

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 Russian may be counted as the equivalent of Russian 101; three years the equivalent of Russian 102, and four years the equivalent of Russian 203. 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 Russian will not receive credit for taking lower division courses in Russian except with advance approval from the department.

101. (1) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Russian 101.
Continuation of Russian 101. Not open to students who have completed three years of high school Russian.

102. (2) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Russian 101.
Continuation of Russian 101. Not open to students who have completed three years of high school Russian.

105. Elementary (8)
Eight lectures and two hours of laboratory.
The elements of Russian; oral emphasis. A one-year course concentrated in one semester. Primarily for credential candidates in Russian.

203. (3) Intermediate (4) I
Prerequisite: Russian 102 or 105, or three years of high school Russian.
Practical application of the basic principles of the language. Oral practice, reading in Russian of cultural material.

204. (4) Intermediate (4) II
Prerequisite: Russian 102 or 105, or three years of high school Russian.
Practical application of the basic principles of the language. Oral practice, reading in Russian of cultural material.

210. (10) Conversation (2) I
Prerequisite: Russian 102 or 105, or three years of high school Russian.
Practice in the spoken language with emphasis on the articulation of Russian sounds; practical vocabulary; conversation on everyday cultural topics.

211. (11) Conversation (2) II
Prerequisite: Russian 203 or 210, or four years of high school Russian.
Continuation of Russian 210.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

555A-555B. (105A-105B) 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. (110A-110B) The Russian Novel of the Nineteenth Century (3-3)
Development of the Russian novel of the nineteenth century.

563. (111) Russian Literature of the Twentieth Century (3)
Poetry, prose and drama of the twentieth century.

570. Slavic Linguistics (3)
Prerequisite: Russian 204 and 211.
Structural and comparative Slavic linguistics.

580. (130) Russian Syntax and Stylistics (3)
Prerequisite: Russian 301A-301B.
The structure of contemporary Russian.

581. (131) Russian Phonetics and Morphology (3)
Prerequisite: Russian 204 and 211.
The sounds and forms of contemporary Russian.

GRADUATE COURSES

Refer to the Graduate Catalog.
Social Science

The adviser for this emphasis is Dr. Warren A. Johnson, Department of Geography.

Preparation for the major. Biology 100 and 100C, Chemistry 101A; a six-unit sequence in each of the following fields: (1) anthropology, (2) economics, (3) geography, (4) history, (5) political science, and (6) sociology. Six units recommended for these sequences are as follows: Anthropology 100 and 101, Economics 120 and 121, Geography 101 and 102, History 105A-105B or 115A-115B, Political Science 110 and 112, Sociology 110 and 111. Additional recommended courses include Chemistry 101B, 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 "Graduation Requirements" on page 102.

Major. A minimum of 30 upper division units to include 12 units selected from Economics 453 or 458, Geography 370 or 499, Political Science 335 or 523, and 18 units selected from Anthropology 526, 527, 528, 531; Economics 320, 321, 401, 499, 525, Geography 354, 358, 371, 555, 556, 559, 573, 574, 575, 576; History 540, Political Science 321, 338, 520, 522; Sociology 440, 550, 557, Anthropology 574, 575, 576. Recommended: Biology 361 or 420.

Social Science Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements on page 63 of this catalog.

Preparation for the major. Mathematics 119 or other statistics course offered by a social science department; a six-unit sequence in each of the following fields to be selected from the courses indicated: (1) Anthropology 100, 101; (2) Economics 120 and 121, or 103 (for students not using economics as a field of concentration); (3) Geography 101, 102, (4) History 105A-105B, 115A-115B; (5) Political Science 110, 120, 130, (6) Sociology 110, 111, (7) Mexican-American Studies 110A-110B, 115, 120A-120B. Social Science 158 may be substituted for one of the three-unit courses except in the area of upper division concentration. Statistics courses taken in a social science department may not be used in fulfillment of that department's six-unit sequence.

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 "Graduation Requirements" on page 67.

Spanish is recommended for those planning to work in this part of the United States.

Major. A minimum of 30 upper division units to include 15 units in one of the departments listed above, six units in each of two other departments or social science courses, three units in a fourth field. Courses covering four fields must be completed.

A maximum of six units in one of the following fields may be selected from the courses listed above: Anthropology 302, 303, 304, 305, 306, 320, 376, 380A-380B, 480, 483, Psychology 320, 321, 322, 330, 340, 342, 347, 350, 351, 452, 453, 454, 455, Religious Studies 301, 305, 312, 314, 316, 318, 330, 340, 351, 353A-353B, 360, 361, 363, 365, 501, 503, 520, 522, 580. The lower division prerequisites required for any of the above courses in psychology and religious studies will count in the maximum total of six units allowed.

Emphasis in African and the Middle East

The adviser for this emphasis is Dr. Issa J. Khalil, Department of Religious Studies.

Preparation for the major. History 105A-105B, Humanities 157 and/or 158, and three to six units selected from Anthropology 100, 101; Comparative Literature 270A, 270B, 272A; Economics 120, 121; 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.

Major. A minimum of 30 upper division units to include 15 units in one of the fields listed above; six units in each of two or three other or social science courses; three units in a fourth field. Courses covering four fields must be completed.

A maximum of 6 units in one of the following fields may be selected from the courses listed above: Anthropology 302, 303, 304, 305, 306, 320, 376, 380A-380B, 480, 483, Psychology 320, 321, 322, 330, 340, 342, 347, 350, 351, 452, 453, 454, 455; Religious Studies 301, 305, 312, 314, 316, 318, 330, 340, 351, 353A-353B, 360, 361, 363, 365, 501, 503, 520, 522, 580. The lower division prerequisites required for any of the above courses in psychology and religious studies will count in the maximum total of six units allowed.

Emphasis in Middle Eastern Studies

The adviser for this emphasis is Dr. Issa J. Khalil, Department of Religious Studies.

Preparation for the major. History 105A-105B, Humanities 157 and/or 158, and three to six units selected from Anthropology 100, 101; Comparative Literature 270A, 270B, 272A; Economics 120, 121; 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. Arabic 101, 202, 303 and 304 or French 101, 102 and 201 or Hebrew 101, 102 and 203 or Portuguese 101, 102 and 203. 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 not required with the major. Students may wish to take 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 349 or 354; Economics 349; Comparative Literature 353; Economics 365, 489; Geography 505, 539A-539B, Religious Science 561, 561A, Religious Studies 312, 330, 340.
UPPER DIVISION COURSE
(Intended Primarily for Undergraduates)

498. Senior Seminar (3)
Advanced reading and independent research on selected topic integrating at least two of the social science disciplines. Usually taught by two instructors representing two of the six social science disciplines of anthropology, economics, geography, history, political science and sociology.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees in the Major Area)

580. Topics (3)
Special topics appropriate to an interdisciplinary approach. Reading, observation and evaluation of research material and current scholarship in topic under consideration. Wherever possible taught by team of instructors representing two of six social science disciplines of anthropology, economics, geography, history, political science and sociology. Maximum credit six units. Social Science 580 may be used in fulfillment of major requirements but not in 15-unit area of concentration.

GRADUATE COURSES
Refer to the Graduate Catalog.

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**Social Science**

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees in the Major Area)

580. Topics (3)
Special topics appropriate to an interdisciplinary approach. Reading, observation and evaluation of research material and current scholarship in topic under consideration. Wherever possible taught by team of instructors representing two of six social science disciplines of anthropology, economics, geography, history, political science and sociology. Maximum credit six units. Social Science 580 may be used in fulfillment of major requirements but not in 15-unit area of concentration.

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**School of Social Work**

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: Witte
- Dean: Butler
- Professors: Griffin, Haworth, Ishikawa, Kahn, Kelley, Kukkonen, Lee, Maxwell (Assoc. Dean), Morgan, O'Neil, Pitcher, Reichert, Stanford, Stumpf, Tebor
- Associate Professors: Anderson, Clay, Guidry, Herman, Pantoja, Pepper, Perry, Rubin, Sardinas, Valler
- Assistant Professors: Ajemian, Cohen, Raymer, Siman, Sucato, Watson

**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
- Master of Science in Social Work

The MSSW program is under review by the School of Social Work faculty and may not be offered again in the future.

**Program 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 Trustees of The California State University and Colleges in May 1963. Students with a bachelor's degree from an accredited college or university can be considered for admission to this program. The School also offers a program of professional education leading to the Master of Science in Social Work degree. Students who have completed the undergraduate social welfare major at San Diego State University, or another accredited equivalent, can be considered for admission to this program. The Chancellor's Office gave its approval for this degree program on February 12, 1970.

The objectives of the School of Social Work at San Diego State University are to equip 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 in developing a philosophy which recognizes individual human welfare as the purpose and goal of social policy; to acquire attitudes which will permit the development and maintenance of professional standards; to develop the discipline and self-awareness essential to the profession of social work; to attain a level of competence necessary for professional practice; to acquire knowledge in methods of research in social work; and to accept responsibility for the continued development of their competence in the practice of social work.

For detailed information regarding admission to the School and its graduate curriculum, see the Graduate Catalog.

**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 on page 63 of this catalog.

A minor is not required with this major.

The primary educational objective of this major is preparation for beginning social work practice. In addition, it serves broad educational purposes based on an understanding of contemporary social welfare programs and prepares for professional social work education at the graduate level. The major prepares immediate employment in those major social work positions which require professional social work education on a graduate level.

For detailed information regarding admission to the School and its graduate curriculum, see the Graduate Catalog.

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**School of Social Work**

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: Witte
- Dean: Butler
- Professors: Griffin, Haworth, Ishikawa, Kahn, Kelley, Kukkonen, Lee, Maxwell (Assoc. Dean), Morgan, O'Neil, Pitcher, Reichert, Stanford, Stumpf, Tebor
- Associate Professors: Anderson, Clay, Guidry, Herman, Pantoja, Pepper, Perry, Rubin, Sardinas, Valler
- Assistant Professors: Ajemian, Cohen, Raymer, Siman, Sucato, Watson

**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
- Master of Science in Social Work

The MSSW program is under review by the School of Social Work faculty and may not be offered again in the future.

**Program 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 Trustees of The California State University and Colleges in May 1963. Students with a bachelor's degree from an accredited college or university can be considered for admission to this program. The School also offers a program of professional education leading to the Master of Science in Social Work degree. Students who have completed the undergraduate social welfare major at San Diego State University, or another accredited equivalent, can be considered for admission to this program. The Chancellor's Office gave its approval for this degree program on February 12, 1970.

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For detailed information regarding admission to the School and its graduate curriculum, see the Graduate Catalog.
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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 "Graduation Requirements" on page 67.

Major (Undergraduate): A minimum of 44 upper division units, in a prescribed pattern to include Social Welfare 360A-360B, 370A-370B, 381 or 382, 482A-482B, 483A-483B, 486A-486B, 490A-490B, Sociology 440 or Psychology 340. Recommended: Biology 382 and 462L, Psychology 330, Sociology 422, and courses from anthropology, literature, history, philosophy, political science, economics, psychology and sociology. Students should consult with their advisor in social welfare for selection and arrangement of courses.

Social Welfare Minor

The minor in social welfare consists of a minimum of 15 units in social welfare, nine units of which must be in upper division courses. Courses in the minor may not be counted toward the major.

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. (80.) 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. (30.) Contemporary Courtship and Marriage (3) I, II
Introduction to courtship and marriage, including various concepts, attitudes and value systems as they relate to contemporary courtship, marital and family relationships. Assist students in coping with interpersonal relationships. Not open to students with credit in Family Studies and Consumer Sciences 135 or other lower division course in courtship and marriage or marriage and the family.

295. (99.) Experimental Topics (1-4) Cr/NC
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES IN SOCIAL WELFARE

(384) Honors Course (1-3) I, II
Refer to Honors Program. May be repeated with new content. Maximum credit six units.

360A. (100A.) Perspectives on Human Behavior (3) I, II
Prerequisites: Psychology 101 and Sociology 101.
The nature of theories about human behavior and human societies and the utility and consequences of approaching human phenomena with various theoretical orientations and assumptions. For application to social work practice.

360B. (100B.) Perspectives on Deviant Behavior (3) I, II
Prerequisite: Social Welfare 360A.
Theoretical perspectives of deviancy, alienation, social problems and the institutionalization of impaired status in a cultural and subcultural context for application to social work practice.

Prerequisites: Social Welfare 110 or Sociology 110 or Mexican-American Studies 110A-110B; 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. (160B.) Social Provision and Program Evaluation (3) I, II
Prerequisite: Social Welfare 370A.
Issues and dilemmas related to the provision of social services, and analysis of social programs. Evaluating effectiveness and efficiency of social service programs and social work services.

Social Work / 385

381. (181.) Field Observation (2) I, II
Two lectures and four hours of field observation. Not open to students with credit or concurrent registration in Social Welfare 390B. (180B.)

382. Practice Skills Simulation (3) I, II
Six hours of simulation. Not open to students with credit or concurrent registration in Social Welfare 390B.

482A-482B. (182A-182B.) Social Work Practice (3-3) I, II
Prerequisites: Social Welfare 360A and 370B and a 3.00 Grade Point Average in all lower level social welfare courses required in the major; concurrent registration in Social Welfare 482A and 489A for 482A; concurrent registration in Social Welfare 483A and 489B for 482B.
The professional base, principles and interventional techniques of social work practice with individuals, families, groups and communities.

483A-483B. (183A-183B.) Integrating Seminar (2-2) I, II
Prerequisites: Social Welfare 360A and 370B and a 3.00 Grade Point Average in all lower level social welfare courses required in the major; concurrent registration in Social Welfare 482A and 489A for 482A; concurrent registration in Social Welfare 483A and 489B for 482B.
The integration of social work theory, principles and practice techniques.

Prerequisites: Social Welfare 360B and 370B and a 3.00 Grade Point Average in all lower level social welfare courses required in the major; concurrent registration in Social Welfare 482A and 489A for 482A; concurrent registration in Social Welfare 483A and 489B for 482B.
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 Chairman of Department.

490A-490B. (187.) Methods of Social Work Research (2-2) I, II
Prerequisites: Social Welfare 360B and 370B.
A laboratory and seminar on the formulation 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.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

497. (197.) Investigation and Report (3) I, II
Prerequisite: Consent of instructor.
Analysis of special topics in social welfare.

498. (199.) Special Study (1-3) I, II
Prerequisites: Consent of instructor.
Individual study. Maximum credit six units.

GRADUATE COURSES IN SOCIAL WORK

Refer to the Graduate Catalog.
Sociology

Faculty
Emirntus: Banhart. Kirby. Knap
Chairman: Johnson
Associate Professors: Bloomberg, Buck, Chandler, Cottrell, DeLora, J.S., Emerick, Kennedy, Scheck, Schulz, Werner
Assistant Professors: Halpert, Hohn. lma. Kirkpatrick, Kododi, Preston, Stephenson, Weeks
Lecturers: Biblarz, Clanton, Gogel, Hartman, Kirby, D., Labovitz, Richardson, Schmidt, Wojnusz, Wood

Offered by the Department
Master of Arts degree in sociology.
Major in sociology with the A.B. degree in liberal arts and sciences.
Minor in sociology.

Sociology 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 on page 63 of this catalog.
Students majoring in sociology must complete a minor in another field.
Preparation for the major. Sociology 101, 110 and 160. (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 "Graduation Requirements" on page 67.
Major. A minimum of 24 upper division units in sociology to include three units in theory (400, 401 or 403); three units in research methods (460, 464 or 465); three units in Social Psychology 440; and three units in Social Organization (404, 422, 424 or 432).

Sociology Minor
The minor in sociology consists of 15 units in sociology, nine of which must be in upper division courses.
Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

101. (1.) Introductory Sociology (3)
This course is prerequisite to all upper division courses in sociology.
Development and use of the concepts applied to sociological analysis; the effects of isolation and social contacts, interaction processes, forces, control, collective behavior and social progress.

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. (10.) Contemporary Social Problems (3)
Prerequisite: Sociology 101.
Modern social problems recognizing the sociological factors involved. Emphasis on the scientific method of approach. Analysis of various causes and solutions of problems. Not open to students with credit in Sociology 510 or Mexican-American Studies 115.

160. (60.) Elementary Social Statistics (3)
Prerequisites: Sociology 101 and Mathematics 103.
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 or concurrent registration in another course in statistics.

164. (64.) Sociological Analysis (3)
Prerequisite: Sociology 101.
Development and use of fundamental procedures of sociological investigation.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102; Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended Primarily for Undergraduates)

300. (160.) Honors Course (1-3)
Referto Honors Program.

400. (100.) History of Social Thought (3)
Prerequisite: Sociology 101.
Development of social thought prior to the appearance of sociology as a distinct scientific discipline. Major emphasis on European contributions.

401. (101.) Classical Sociological Theory (3)
Prerequisite: Sociology 101.
Theories of the major early European and American sociologists, including Marx, Weber, Durkheim, Pareto, Cooley, Mead and others.

403. (103.) Contemporary Sociological Theory (3)
Prerequisite: Sociology 101.
Types and trends of contemporary sociological theory. Selected theoretical works.

404. (104.) Social Change (3)
Prerequisite: Sociology 101.
Social change at the interpersonal, institutional and societal levels in a comparative perspective.

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.

422. (122.) Social Organization (3)
Prerequisite: Sociology 101.
Major forms of social organization such as institutions, associations, bureaucracy, primary groups and stratification. Study of underlying processes of development, social control and organizational change.

424. (124.) Social Stratification (3)
Prerequisite: Sociology 101.
Theories of stratification in society. Studies in the American stratification system and its implications in the other areas of life. Introduction to the study of mobility. Comparison with other selected societies.

432. (132.) Formal Organization (3)
Prerequisite: Sociology 101.
The structure and dynamics of various types of complex formal organization. Their development, internal structure and processes, external relations and functions in contemporary society.

440. (140.) Social Psychology: Sociological Approaches (3)
Prerequisite: Sociology 101.
The study of the major theoretical frameworks, problems and findings of sociology and social psychology concerning group behavior and group membership, the socialization of the individual, and the processes of social interaction. (Not open to students with credit in Psychology 340.)

460. (160.) Quantitative Methods in Social Research (3)
Prerequisite: Sociology 160.
The use of parametric and nonparametric techniques in the analysis of social research data. The use of parametric and nonparametric techniques in the analysis of social research data, including analysis of variance, covariance, multiple and partial correlational techniques.
464. (164) Survey and Experimental Research Methods  (3)
Prerequisite: Sociology 160.
Examination of the research process from research design through data processing, analysis and interpretation. Emphasis on quantitative research techniques including sample surveys, questionnaire construction, scaling techniques and experimental designs.

465. Qualitative Research Methods  (3)
Prerequisite: Sociology 160.
Examination of field research methods including interviewing, observation, participant observation and case studies. Problems in research design, gaining and maintaining rapport, and analysis and interpretation of data.

466. Experimental Topics  (1-4)
Prerequisite: Consent of the instructor.
Refer to the catalog statement on experimental topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

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

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

500. Modernization of Traditional Societies  (3)
Prerequisite: Sociology 101.
Examines sociological aspects of alternative futures and the role of contemporary behavior in creating those futures. Analysis of projections in selected areas such as family, technology, work and leisure.

510. (110) Sociology of Deviance  (3)
Prerequisite: Sociology 101.
Survey of many alleged abnormal phenomena in society as seen in society today in various forms of individual, family, community and world disorganization, such as crime, prostitution, extreme alcoholism, migratory workers, divorce, revolution, war, etc.

511. (111) Current Topics in Sociology  (3)
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. Maximum credit six units.

512. (112) Sociology of Conflict  (3)
Prerequisite: Sociology 101.
Conflict as a social process: background, forms and consequences at the interpersonal, intergroup, class and international levels from a sociological frame of reference. Major theories of social conflict.

513. (113) Criminology and Penology  (3)
Prerequisite: Sociology 101.
The extent and characteristics of crime; consideration of physical, mental, economic and sociological causes of crime; study of methods of penal discipline, prison labor, parole and probation; programs of prevention.

514. (114) Juvenile Delinquency  (3)
Prerequisite: Sociology 101.
The nature and extent of delinquency; the causative factors involved; methods of control and prevention, with special attention to the protective and remedial measures offered by the school, home, juvenile court, correctional institutions and camps, probation and parole, and recreational agencies.

518. Topics in Comparative Societies  (3)
Prerequisite: Sociology 101.
Analysis of contemporary social structure, the process of modernization and current social problems in selected areas of the world. May be repeated with new content. Maximum credit six units.

520. (120) Industrial Sociology  (3)
Prerequisite: Sociology 101.
Group relationships within economic organizations. Problems of leadership, morale and conflict. Some attention to the sociology of occupations and professions.

521. (121) Sociology of Occupations and Professions  (3)
Prerequisite: Sociology 101.
Division of labor, status ranking of occupations, authority structures, occupational and professional organization, occupational socialization; problems of identity and role conflict.

523. (123) The Sociology of Mental Illness  (3)
Prerequisite: Sociology 101.
The social definition, ecology and control of mental illness across various societies. The implications of social differentiation, stratification and urbanization upon the incidence, prevalence and control of mental illness and the use of these empirical problems for sociological research.

525. (125) Minority Group Relations  (3)
Prerequisite: Sociology 101.
Theories of ethnic prejudice. Analysis of racial and ethnic discrimination. Analytical inquiry into sources of friction and causes of conflict between majority and minority groups.

526. (126) Medical Sociology  (3)
Prerequisite: Sociology 101.
A sociological analysis of health and medical institutions. Cultural factors in conceptions of disease, 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. Not open to students with credit in Health Sciences and Safety 561.

527. Sociology of Aging  (3)
Prerequisite: Sociology 101.
Status and roles of men and women in the second half of the life cycle. Ethnic, sex and class variables in aging. Cross-cultural comparisons of occupational, educational, familial, recreational and political opportunities for the aging.

528. Sociology of Death  (3)
Prerequisite: Sociology 101.
Examines sociological concepts and theories of the process of dying. Comparative study of death and dying with emphasis on social, psychological and social organization approaches. Consideration of contemporary social-ethical issues surrounding dying in our society.

533. Sex Roles in Contemporary Societies  (3)
Prerequisite: Sociology 101.
Male-female relationships in occupational, educational and familial settings viewed historically and cross-culturally. Images of men and women in literature, in the mass media, and in law and judicial decisions.

534. Sexuality in Modern Society  (3)
Prerequisite: Sociology 101.
Analysis of contemporary dating, engagement, marriage, family, and other intimate relationships in the United States as they are affected by changes in culture.

535. (135) The American Family and Its Alternatives  (3)
Prerequisite: Sociology 101.
Analysis of contemporary dating, engagement, marriage, family, and other intimate relationships in the United States as they are affected by changes in culture, the United States as they are affected by changes in culture.

536. (136) The Family in Cross-Cultural Perspective  (3)
Prerequisite: Sociology 101. Recommended: Sociology 535.
Comparative study of selected family systems in the past and present. Family and parafamily, comparative study of selected family systems in the past and present.

538. Sociology of Work  (3)
Prerequisite: Sociology 101.
Analysis and evaluation of work factors in society. Determination of work and occupation in relation to the economy and society.

553. Family Studies and Consumer Sciences  (3)
Prerequisite: Sociology 101.
Analysis of contemporary dating, engagement, marriage, family, and other intimate relationships in the United States as they are affected by changes in culture, the United States as they are affected by changes in culture.
537. (137) Political Sociology (3)
Prerequisite: Sociology 422.
Social organization of political processes; power and authority, social class, primary groups, collective behavior, social change and other sociological factors considered in their relationships to political processes.

538. (138) Sociology of Religion (3)
Prerequisite: Sociology 101. Recommended: Sociology 401 and 548.
The role of religion in society as cut and institution, including primitive religion, modern sects and churches, ritual, secularization and religious movements.

539. (139) Sociology of Education (3)
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.

541. (141) Advanced Social Psychology; Sociological Approaches (3)
Prerequisite: Sociology 440 or Psychology 340. Recommended for majors only.
Sociological theories and approaches to the study of group behavior and membership, socialization of the individual, and processes of social interaction.

542. (142) Sociology of Mass Communication (3)
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.

543. (143) 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.

544. (144) Sociology of Social Movements (3)
Prerequisite: Sociology 101. Recommended: Sociology 440 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.

545. (145) 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. (150) Population Problems (3)
Prerequisite: Sociology 101.
Study of population variables including births, deaths and migration. Comparative analysis of theories, methods and techniques used in the study of population and ecological problems, processes and relationships.

551. (151) Urban Sociology (3)
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.

563. The Logic of Sociological Inquiry (3)
Prerequisite: Sociology 160.
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.

597. (197) Investigation and Report (3) I, II
Prerequisite: Fifteen units in sociology and consent of instructor.
Analysis of special topics in sociology. Maximum credit six units.

Spanish
In the College of Arts and Letters

Faculty
Emeritus: Baker, Brown, Sender
Chairman: Segade
Professors: Barrera, Case Head, Lernus, Walsh
Associate Professors: Christensen, Jimenez-Vera, Santalo, Segade, Talamantes, Weaver
Assistant Professors: O'Brien, Young
Lecturers: Silverman, Suarez-Radillo

Offered by the Department of Spanish and Portuguese Languages and Literatures

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 on page 63 of this catalog.
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, 203, 204, 210, and 211. (22 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, 311A-311B, and 12 units of upper division electives in Spanish, but not to exceed 3 units from Spanish 440, 441, and 442.

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.

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 School 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 Spanish is required for the degree; students seeking the credential only are not required to complete a minor.

Preparation for the major.
Spanish 101, 102, 203, 204, 210 and 211. (22 units.)

Major.
A minimum of 30 upper division units to include Spanish 301, 302, 311A-311B, 490, 548; two courses from 440, 441, or 442; and six units of electives from any of the departmental offerings.

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 203. The last year course taken by a student in the high school language sequence may be repeated in college for graduation credit.

Teaching major in Spanish for the single subject teaching credential in foreign languages. Minor in Spanish.
LOWER DIVISION COURSES

101. (11) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Spanish 101 or two years of high school Spanish.
Not open to students who have completed three years of high school Spanish.

102. (22) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: Spanish 101 or two years of high school Spanish.
Not open to students with credit for Spanish 301-Y.

203. (33) 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 practice; outside reading with oral and written reports.

Special sections available for the Spanish speaking.

204. (44) Intermediate (4) I, II
Prerequisite: Spanish 203 or four years of high school Spanish.
Continuation of Spanish 203. Special sections available for the Spanish speaking.

210. (10) Conversation and Writing (3)
Prerequisite: Spanish 102 or three years of high school Spanish.
Emphasis on the spoken language with a modicum of writing practice; practical vocabulary and useful phrases; conversation on assigned social, cultural or literary topics at an intermediate level; all class discussion conducted in Spanish. Not open to students with credit for Spanish 210-Y.

210-Y. Intermediate Conversation and Writing in Mexico (3)
Prerequisite: Spanish 102 or three years of high school Spanish.
Emphasis on the spoken language with a modicum of writing practice; practical vocabulary and useful phrases; conversation on assigned social, cultural or literary topics at an intermediate level; all class discussion conducted in Spanish; course arranged in tour fashion in Mexico during winter interim or pre-summer period. Not open to students with credit for Spanish 210.

211. (11) Writing and Conversation (3)
Prerequisite: Spanish 203 and 210 or four years of high school Spanish.
Emphasis on the written language with supporting practice in the written language; directed written composition on social, cultural or literary topics with stress on clarity and thoroughness of thought; all class discussion conducted in Spanish.

223. (23) Introduction to Literature (3)
Prerequisite: Spanish 204 and 211.
Selected readings from Spanish and Latin American prose. Oral and written reports and class discussions. Course conducted in Spanish.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

504A-504B. (104A-104B) Spanish-American Literature (3-3)
Prerequisite: Spanish 204 and 211.
Reading from representative Spanish-American authors during the colonial, revolutionary and modern periods. Lectures, class readings, collateral reading and reports.

510A-510B. (105A-105B) Modern Spanish Drama (3-3)
Prerequisite: Spanish 204 and 211.
The development of the drama of Spain from the beginning of the nineteenth century to the present time.

515A-515B. (106A-106B) Modern Mexican Literature (3-3)
Prerequisite: Spanish 204 and 211.
The development of the drama of Mexico from the beginning of the twentieth century to the present time.
520. (107) Caribbean Area Countries Literature (3) 
Prerequisites: Spanish 204 and 211. 
Literature of Caribbean Islands, Central America, Colombia and Venezuela, from colonial period to present. Special emphasis on contemporary era.

522. (108) Andean Countries Literature (3) 
Prerequisites: Spanish 204 and 211. 
Literature of Ecuador, Peru, Bolivia and Chile from the period immediately preceding the Spanish conquest to today.

524. (106) River Plate Literature (3) 
Prerequisites: Spanish 204 and 211. 
Literature of Argentina, Paraguay and Uruguay from colonial period to present.

530. (110) Nineteenth Century Spanish Novel and Short Story (3) 
Prerequisites: Spanish 204 and 211. 
The development of the novel and short story in Spain since 1826 and in the English language to the present.

532. (112) Twentieth Century Spanish Novel and Short Story (3) 
Prerequisites: Spanish 204 and 211. 
The development of the novel and short story in Spain to 1936, with emphasis on the novel of the generation of 1898.

533. (112) Contemporary Spanish Novel (3) 
Prerequisites: Spanish 204 and 211. 
The development of the novel and short story in Spain since 1936.

548. (149) Spanish Linguistics (3) 
Prerequisites: Spanish 204 and 211. 
Structural, historical and applied Spanish linguistics.

549. (150) Phonetics and Phonemics (3) II 
Prerequisites: Spanish 204 and 211 with a grade of C or better. 
The sounds of Spanish and of the Spanish phonemic system, 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 204 and 211. 
Major writers and works, concentrating on prose and lyric poetry.

560. Golden Age Literature II (3) 
Prerequisites: Spanish 204 and 211. 
Major writers and works, concentrating on drama.

570. (170) Spanish-American Poetry (3) 
Prerequisites: Spanish 204 and 211. 
Spanish-American poetry of the 19th and 20th centuries.

571. (171) Spanish-American Short Story (3) 
Prerequisites: Spanish 204 and 211. 
Principal Spanish-American short story writers.

572. (172) Spanish-American Theatre (3) 
Prerequisites: Spanish 204 and 211. 
Principal Spanish-American dramatists and movements.

580. (160) Modern Spanish Poetry (3) 
Prerequisites: Spanish 204 and 211. 
Spanish poetry of the 19th and 20th centuries.

GRADUATE COURSES
Refer to the Graduate Catalog.

Speech Communication
In the College of Professional Studies

Faculty
Emeritus: Ackley
Chairman: Sanders
Professors: Adams, Benjamin, Mills, Samovar
Associate Professors: King, Sanders
Assistant Professor: Weitzel

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/Spanish.
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 on page 63 of this catalog.
A minor is not required with this major.

Preparation for the major: Speech Communication 104, 105, 111A, 135 and 160. (15 units.)

Major: A minimum of 27 upper division units to include Speech Communication 350, 533 and 592. Twelve units selected from Speech Communication 300, 301, 309, 352, 384, 391, 392, 390, 400, 498, 499, 530, 545, 547, 597; or twelve units selected from Speech Communication 300, 309, 400, 498, 499, 530, 537, 575, 589; or twelve units selected from Speech Communication 300, 309, 361, 362, 382, 400, 506, 530, 540, 575, 589. In addition, six units of electives from departmental offerings.

Speech Communication Minor
The minor in speech communication consists of a minimum of 23 units in speech communication to include Speech Communication 103 or 104, 111A or 111B, 135, 160, and twelve units of upper division electives in speech communication.
Courses in the minor may not be counted toward the major.

Speech Communication Major
For the Single Subject Teaching Credential in English/Spanish
All candidates for a teaching credential must complete all requirements listed in this section of the catalog under the School 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 and 160. (15 units.)

Major: A minimum of 24 upper division units in speech communication to include Speech Communication 309 (Intercollegiate Forensic Experience, 1-3 units), 391, 392, 508, and 12 to 14 units of electives (Speech Communication 589 is recommended).

Credential requirements: Thirty units of which at least 24 units must be taken outside the Speech Communication Department including:
(A) Language: 9 units from Linguistics 100, 520, 524 or 550, 622 or Speech Communication 530.
(C) Composition: 9 to 12 units from English 200 and 500; Speech Communication 160 or 392, Journalism 120 or 320.
LOWER DIVISION COURSES

103. (3) 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 for Mexican-American studies 111A.

104. (4) Public Speaking (3) I, II
Practice in extemporaneous speaking on subjects of current interest, both national and local, with stress on organization and delivery. Speech Communication 103 or 104 recommended in general education. Not open to students with credit for Mexican-American studies 111A.

105. (5) 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. (11A) Fundamentals of Interpretation (3) I, II
Literature and principles of its oral presentation by the interpreter.

111B. (11B) Intermediate Interpretation (3)
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. (35) 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.

160. (50) Argumentation and Debate (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. (61) Intercollegiate Debate (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. (70) Group Discussion (3) I, II

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

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

301. (101) Management of Speech Activities (1) I, II
Two hours of activity. Planning, preparation, management, and supervision of speech tournaments and other interscholastic activities under the supervision of the speech communication staff. Maximum credit two units.

309. (109) Workshop in Speech (1-3)
Study of some problems in speech communication. Maximum credit six units.

350. (150) Classical Rhetorical Theory to 1700 (3)
Rhetorical theories from their origins to the Renaissance. Emphasis on the theories of Plato, Aristotle, Cicero and Quintilian, and the application of principles to rhetorical discourse.
540. (140.) Freedom and Responsibilities of Speech (3) I, II
Prerequisite: Speech Communication 160.
In-depth study of the major legal, ethical and political issues concerning communication and free speech in a democratic society.

575. (175.) 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.

589. (180.) Ethics of Speech Communication (3)
Prerequisite: Six upper division units in philosophy or speech communication.
Classical and modern ethical concepts applied to oral persuasion.

592. (192.) Persuasion (3) I, II
Prerequisite: Speech Communication 103 or 104.
Persuasion with emphasis on psychological principles. Research project on a significant problem.

GRADUATE COURSES
Refer to the Graduate Catalog.

Speech Pathology and Audiology
In the College of Professional Studies
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
Emeritus: Earnest, Pfaff
Chairman: Kopp
Professors: Kopp, Nichols, Riedman, Thile
Associate Professor: Allen
Assistant Professors: Ellis, Martin, Williams, Wood

Offered by the Department
Master of Arts degree in speech pathology and audiology.
Major in speech pathology and audiology with the A.B. degree in applied arts and sciences.
Minor in speech pathology and audiology.
Restricted Credential, Speech and Hearing Specialist (Plan II).

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 on page 63 of this catalog.
A minor is not required with the major.

Preparation for the major: Mathematics 103 (or qualification on the mathematics placement examination); Physics 107, 107L, Psychology 101, 260 and 270; Speech Communication 103 or 104; Speech Pathology and Audiology 104, 105 and 106. (26-27 units.)

Major: A minimum of 24 upper division units in speech pathology and audiology selected with the approval of the adviser. Those with an emphasis in the area of deaf education must include Special Education 475, 480E, 500, 501 and 502 to complete their credential.

Speech Pathology and Audiology Minor
The minor in speech pathology and audiology consists of a minimum of 18 units in speech pathology and audiology, ten units of which must be in upper division courses. The following are required: Speech Pathology and Audiology 104, 105, 106, 321, 340, 342; and three units selected from 320, 322, 324 or 551.
Courses in the minor may not be counted toward the major.

Restricted Credential: Speech and Hearing Specialist
The Restricted Credential is not available to students who cannot complete credential requirements by September 1978. The Restricted Credential is a five-year program leading to a credential which authorizes service in all grades in the area specified. It requires the same lower division courses as are required in the preparation for the major in speech pathology and audiology, a bachelor's degree, and completion of a specific pattern of courses. The following Speech Pathology and Audiology courses are required: 320, 321, 322, 323, 324, 326, 340, 527, 528, 529, 551; and 15 units chosen with approval of the adviser from Speech Pathology and Audiology 341, 342, 345, 346, 360, 530-S, 531, 532, 534, 547, 550, 552, 553, 599, 601, 602, 603, 604, 605, 606, 626, 638, and 654. Two courses may be elected from 356, 357, 640, 644, 645, 646, 649, 656, 657. Consult adviser for specific courses required outside of the department. A provisional credential is no longer offered, and there is no postponement of requirements prior to receiving the restricted credential.
Specialist Credential: Communicatively Handicapped
(Ryan Bill)
The Specialist Credential for the Communicatively Handicapped prepares students for an emphasis in one or more of the following areas of handicap:
- Deaf and Severely Hard of Hearing
- Deaf—Blind
- Severe Oral Language (including aphasia)

Speech and Hearing

The Specialist Credential for the Communicatively Handicapped specifies a sequence of speech pathology and audiology courses plus a sequence of education courses. This credential incorporates a standard classroom teaching credential for the communicatively handicapped and may be pursued in conjunction with the multiple subjects teaching credential or with the single subject teaching credential. Students may choose to:(1) major in liberal studies (offered by the School of Education) in conjunction with specified speech pathology and audiology courses; (2) pursue a departmental major; complete specified prerequisites for the School of Education; pass the National Teacher Examination prior to entering the School of Education curriculum. Consult the department office for further information.

Rehabilitative Services Credentials (Ryan Bill)
Assembly Bill 3150 provides for rehabilitative services credentials for the following areas:
- Language, Speech and Hearing
- Audiology

The department is in the process of developing specific sequences for each of the above areas. This credential program will not require the professional course sequence from the School of Education.

LOWER DIVISION COURSES

104. (4.) Voice and Articulation (3) I, II
Vocal and articulatory dynamics as bases of standard and nonstandard oral language patterns. Practice in recognition and recall of such patterns. Introduction to use of the International Phonetic Alphabet in broad transcription.

105. (5.) Survey of Audiology (2) I
Audiology in diagnosis and rehabilitation of hearing impairment, medical practice, hearing conservation and research. Fifteen hours of observation required.

106. (6.) Communicative Disorders (3) I, II
Orientation to the field of speech pathology and audiology. Survey of communicative disorders, covering all areas of exceptionalities. Normal growth and development as it relates to speech and language. Fifteen hours of observation or project required.

107. (7.) Management of Clinical Activities (1) I, II
Assisting in the operations of the speech and hearing clinic. Maximum credit two units.

108. (8.) Oral Communication Laboratory (1) I, II Cr/NC
Two hours of laboratory.

Individual laboratory training on specific speech problems. Student chosen through testing by Department of Speech Pathology and Audiology.

299. (99) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(299) Honors Course (1-3) I, II
Refer to Honors Program.
342. (142.) Techniques of Audiology (1-3) I, II
Three hours of laboratory per unit.
Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 340.
Provides the laboratory experience necessary for the California School Audiometrist Certificate when taken concurrently with 340. Duplicates classic auditory experiments when taken in conjunction with 543 or 644. Maximum credit three units.

345. (145.) Clinical Practice in Audiologic Assessment (1) I, II, S
Supervised procedures with pure tone, speech, and special audiologic testing. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for 326, 345, and 346. One unit represents 26 hours of direct clinical practice.

348. (148.) Clinical Practice with Hard of Hearing (1) I, II, S
Prerequisite: Speech Pathology and Audiology 351.
Supervised practice with hard-of-hearing clients. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for 326, 345, and 346. One unit represents 26 hours of direct clinical practice.

356. (157.) Clinical Practice with the Deaf (1) I, II
Two hours of credit plus one hour of staffing.
Prerequisite: Concurrent registration in Speech Pathology and Audiology 552 and 553. Admission to clinical practicum includes successful completion of competency examination.

355. (155.) Field Work 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 356.

358. (158.) Manual Communication for the Hearing Impaired (2) I, II Cr,NC
Prerequisite: Demonstrated professional need and consent of instructor.
Structure, vocabulary and syntax of manual communication including the development of competencies in manual communication and in the use of manual communication as a method of teaching the hearing impaired.

390. (190.) Workshop in Speech Pathology and Audiology (1-3) I, II
Study of some problem in speech pathology or audiology. Maximum credit six units.

433. (133.) Clinical Practice in Public Schools (4) I, II Cr,NC
Prerequisite: Speech Pathology and Audiology 329, 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.

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

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees in the Major Area)

527. (127.) Diagnostic Methods 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. (128.) Diagnostic Practicum in Speech Pathology (3) I, II
Prerequisite: Speech Pathology and Audiology 320, and passage of a competency examination.
Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment. Practicum minimum of six hours.

529. (129.) Orientation to Public School Practicum (3) I, II
Prerequisites: Speech Pathology and Audiology 324 and 527. Minimum of 50 hours of supervised clinical practicum. Prior to admission, applicants must receive departmental approval.
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 469E (severe oral language or speech and hearing emphasis). (Formerly numbered Speech Pathology and Audiology 329.)

530-S. (130-S) Family Communication Dynamics (3) S
Prerequisites: Speech Pathology and Audiology 326 and 328.
The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.

531. (131.) 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. (132.) Assessment of Language Disorders (3) I, II
Prerequisite: Speech Pathology and Audiology 531.

533. (130.) Speech, Hearing, and Language (3) II
Prerequisites: Speech Pathology and Audiology 321 and 340. Recommended: Speech Pathology and Audiology 332.
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. (143.) Hearing Amplification (1-3) I
Prerequisites: Speech Pathology and Audiology 341.
Specific application of amplification for rehabilitation of the impaired hearing mechanism; devices, methods for their evaluation, historical perspective and practical considerations.

547. (147.) Hearing Conservation (3) I
Prerequisite: Speech Pathology and Audiology 341.
Noise measurement, analysis and reduction and its effects on hearing and communication. Damage risk criteria and methods of hearing protection.

550. (150.) Education of Deaf Children (3) I
Educational programs, services and resources for hearing impaired; historical background, philosophy, sociological and psychological problems.

551. (151.) Speech Reading and Auditory Training (3) I, II
Prerequisites: Speech Pathology and Audiology 320 and 340.
Theory and methods of speech reading; auditory training techniques including survey of amplification systems. Twenty-six hours observation in programs for deaf and severely hard of hearing.

552. (152.) Articulation Disorders and Methods (3) I
Prerequisites: Speech Pathology and Audiology 321 and 551.
Significant theories and research in prevention and remediation of articulatory disorders. Includes emphasis on speech habilitation of hearing impaired, cognitive and motor processing.

553. (153.) Language Disorders and Methods (3) I
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.

596. (198.) Selected Topics in Speech Pathology and Audiology (1-4) I, II
Prerequisite: Twelve units in speech pathology and audiology. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Catalog.
Study Skills
Refer to section on University Studies.

Telecommunications and Film
In the College of Professional Studies

Faculty
Chairman: Jameson
Professors: Jameson, Jones, Lee, Madsen, Steen, Wylie
Associate Professors: Anderson, Heighton, Johnson, Martin, Meador
Assistant Professors: McKee, Masirowski

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 drama, with emphasis in design for television. See Drama.

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 on page 63 of this catalog.

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 broad areas as design for television and film, media communications theory, broadcast advertising, and the like.

A minor is required with this major.

Preparation for the major, Telecommunications and Film 100, 110, 120A-120B, 130, 160 and 280. (23 units.)

Major. A minimum of 36 upper division units in telecommunications and film to include (32 units) Telecommunications and Film 460, 500 or 505, and 560A-560B, and five to nine units of electives as required.

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 on page 63 of this catalog.

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, 120A-120B, 130, 160 and 280. (23 units.)

Major. A minimum of 36 upper division units to include Telecommunications and Film 460, a core professional sequence, and a minimum of six units in an allied professional sequence; five to nine units of electives as required.

Core Professional Sequences.
TV Production: Telecommunications and Film 500 or 505, 510, 520, 550, 580, 581. (21 units.)
Management: Telecommunications and Film 310, 500, 505, 530, 540, and Psychology 342. (18 units.)
Film: Telecommunications and Film 450, 510, 520, 550, 560A-560B, 562 or 563. (22 units.)

Allied Professional Sequences. (Courses taken in Core Professional Sequences cannot be counted toward the Allied Professional Sequence.)
Advertising: Telecommunications and Film 540, 541, Business Administration 370, 373, Journalism 460, 486, 480, and Psychology 322.
Art: Art 341, 440, 441, 590, and Industrial Arts 315.
Communication: Speech Communication 535, Journalism 500, 503, 508.
Criticism: Comparative Literature 562, Music 351, Philosophy 542, and Speech Communication 395.

Education: Telecommunications and Film 570, Education 383, Educational Technology and Librarianship 540, 541, 544, and Elementary Education 362, 372.
Industrial Arts: Industrial Arts 381, 462, 583.
Information Systems: Business Administration 380, 385, 480, 482.
International Media: Telecommunications and Film 363, 590, and Journalism 505.
Law and Government: Telecommunications and Film 505, Journalism 502, Political Science 335, 520, 546, 547A-547B.
Management: Telecommunications and Film 500, Business Administration 350, 351, 262, 453.
News: Telecommunications and Film 310, 505, and Journalism 474, 475, 502.
Performance: Telecommunications and Film 390, 391, Drama 531, 532, and Speech Communication 505.
Playwriting: Telecommunications and Film 510, Drama 520, 522, English 516, 561.
Scene Design: Telecommunications and Film 450, 550, Drama 540A, 548.

Radio-Television Minor
The minor in radio-television consists of a minimum of 15 units in telecommunications and film to include Telecommunications and Film 100 and at least six units in upper division courses. Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

100. (1) Backgrounds in Broadcasting (3) I, II
Theory and operation of the broadcasting industry to include the history and regulation of broadcasting in the U.S. and the social and economic study of American broadcasting and the organization of commercial and educational radio and television stations.

110. (10) Broadcast Writing (3) I, II
Two lectures and more than three hours scheduled activities.
Theory and practice in writing materials for oral presentation. Problems of timing and pacing, conversational expression and word color.

120A-120B. (2A-2B) Telecommunications Production (4-4) I, II
Two lectures and six hours of activity.
Prerequisite: Limited to telecommunications and film majors.
Technical practices and aesthetic considerations of visual and sound productions. Control room, studio and auxiliary equipment.

130. (30) Radio Production (3) I, II
Two lectures and more than three hours of activity.
Prerequisite: Telecommunications and Film 120A-120B.
Theory of radio production augmented by practice in program planning and production for KPBS-FM.

160. (67) Cinema as Art and Communication (3) I, II
Prerequisite: Sophomore standing.
An appreciative survey of film, with emphasis on the feature film. The development of historical and stylistic influences on the aesthetic values and social implications of cinema. Illustrated by screen examples.
### Upper Division Courses (Intended Primarily for Undergraduates)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>(165) Honors Course (1-3) I, II</td>
<td></td>
<td>Refer to Honors Program.</td>
</tr>
<tr>
<td>310</td>
<td>(112) Radio and Television News Writing and Editing (3) I, II</td>
<td></td>
<td>Gathering, writing and editing news in special forms required by radio and television.</td>
</tr>
<tr>
<td>315</td>
<td>(109) Theory and Criticism of Broadcasting and Film (3) II</td>
<td></td>
<td>Analysis of social, political, economic and aesthetic criticism of broadcasting and film.</td>
</tr>
<tr>
<td>320-S</td>
<td>(172-S) Workshop in Educational Television (6) S</td>
<td></td>
<td>Open to teachers and students interested in instruction by television.</td>
</tr>
<tr>
<td>360</td>
<td>(161) Film Applications in Super-8mm (3) I, II</td>
<td></td>
<td>Analysis of visualized motion through production of super-8mm motion pictures and filmic</td>
</tr>
<tr>
<td>363</td>
<td>(163) International Cinema (3) I</td>
<td></td>
<td>Not acceptable for credit in the telecommunications and film major.</td>
</tr>
<tr>
<td>370</td>
<td>(117) Broadcasting Practices (3) II</td>
<td></td>
<td>Planning and production of radio, TV and film programs. Particularly designed for students who</td>
</tr>
<tr>
<td>390</td>
<td>(140) Broadcast and Film Performance (3) I</td>
<td></td>
<td>Planning and delivery of materials before the microphone and camera. Practical experience in</td>
</tr>
<tr>
<td>391</td>
<td>(161) Acting for TV and Film (3) I, II</td>
<td></td>
<td>Intermrelationship between acting and the various media—radio, television, film. Experience in</td>
</tr>
<tr>
<td>450</td>
<td>(150) Lighting for Television and Film (3) I, II</td>
<td></td>
<td>Theory and application of such aspects as color, temperature, light sources and filmic</td>
</tr>
</tbody>
</table>

### Upper Division Courses (Also Acceptable for Advanced Degrees in the Major Area)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>(101) Broadcast Management (3) I, II</td>
<td></td>
<td>Administration and organization of radio and television, including radio and television as</td>
</tr>
<tr>
<td>505</td>
<td>(105) Regulation of Broadcasting (3) I, II</td>
<td></td>
<td>Sale and management of radio and television, including radio and television as mass media.</td>
</tr>
<tr>
<td>510</td>
<td>(110) Script Writing for Broadcasting and Film (3) I, II</td>
<td></td>
<td>Development of a single program and series ideas. Scripting of dramatic original and adaptation</td>
</tr>
<tr>
<td>520</td>
<td>(180) Directing Television and Film Drama (3) I, II</td>
<td></td>
<td>Two lectures and more than three hours of activity. 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.</td>
</tr>
<tr>
<td>530</td>
<td>(130) Radio Programming (3) II</td>
<td></td>
<td>Planning and execution of broadcast advertising and promotion campaigns.</td>
</tr>
<tr>
<td>540</td>
<td>(103) Broadcast Advertising (3) I</td>
<td></td>
<td>Planning and execution of broadcast advertising and promotion campaigns.</td>
</tr>
<tr>
<td>550</td>
<td>(156) Advanced Lighting and Staging for Television and Film (4) I, II</td>
<td></td>
<td>One lecture and more than nine hours of activity. Planned for lighting and staging techniques, art and graphics, design and scene decoration. Practical experience in University-sponsored productions.</td>
</tr>
</tbody>
</table>
560A-560B. (168A-168B) Film Production (3-3) I, II
One lecture and six hours of activity.
Prerequisite: Telecommunications and Film 460. Telecommunications and Film 560A is prerequisite to 560B.
Advanced practicum in film production. Studio and location work in the preparation of filmed materials, and complete nontheatrical films.

582. (164.) Documentary and Propaganda Film (3) I
Two lectures and three hours of activity.
Prerequisite: Telecommunications and Film 160.
Viewing and analysis of the major conceptual forms and cinematic techniques of these genres from 1922 to the present.

583. (160.) Film Classics (3) I, II
Two lectures and three hours of activity.
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. (165.) Animated Film Techniques (3) I, II
Screening of representative examples and production of a filmograph or animated motion picture. Practical experience in University-sponsored productions.

570. (170.) Educational Telecommunications (3) I
Prerequisite: Telecommunications and Film 100.
The role of instructional and public broadcasting in the United States; utilization of telecommunication in the classroom and industrial training programs.

580. (163.) Advanced Programming and Development for Television (4) I, II
One lecture and more than nine hours of activity.
Prerequisites: Telecommunications and Film 460, 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. (164.) Advanced Television Directing (4) I, II
One lecture and more than nine hours of activity.
Prerequisites: Telecommunications and Film 100, 290, 460, 520 and consent of instructor.
Presentation techniques and individual projects in the direction and production of television programs. Practical experience in University-sponsored productions.

590. (108) International Broadcasting (3) II
Prerequisite: Telecommunications and Film 500 or 505.
Comparative study of broadcasting in various world areas; economic, social and political determinants of broadcasting patterns.

GRADUATE COURSES
Refer to the Graduate Catalog.

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. (99.) 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. Students interested in enrolling in University Studies 200 should contact the University College Office for information. Applications must be submitted to the University College Office 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.

201. Use of the Library (2) I, II
Resources and facilities of San Diego State University Library including interpretation and use of its principal information retrieval mechanisms.

UPPER DIVISION COURSE

(intended primarily for undergraduates)

400. (199.) Selected Activities (1-3) Cr/NC
Prerequisite: A minimum grade point average of 2.0. Supervised experience in college and/or community activities. Students interested in enrolling in University Studies 400 should contact the University College Office for information and applications. 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.

Innovative Courses

The Teaching and Learning Council sponsors University Studies courses (250, 350) among which are interdisciplinary courses and courses characterized by new methods of teaching and learning. These courses are proposed by faculty or by students acting through a faculty sponsor. After receiving approval from the departments and deans, proposals for such courses are submitted to the Teaching and Learning Council, 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 involved. Courses listed immediately after the University Studies number (250, 350) in the Class Schedule, general inquiries about University Studies courses (250, 350) as a whole should be directed to the chairperson of the Teaching and Learning Council.

Students interested in enrolling in University Studies 250 or 350 should contact the faculty advisor of the department(s) offering the course for further details. Decisions with regard to such matters as course prerequisites, application of the course to the student's major, grading policies, and locations will be made by the relevant departments.

250. Innovative Approaches to Teaching and Learning (1-6)

350. Innovative Approaches to Teaching and Learning (1-6)

Study Skills Courses

Faculty

Chairperson: Crafts
Assistant Professors: Crafts, Denman
Lecturers: Albance, Hallahan, Johns, Johnson, Kirkwood, Linthicum, McFall, McWilliams, O'Connor, Sanderlin, Smith, Solar, Sykes

Study Skills Courses

Faculty

Chairperson: Crafts
Assistant Professors: Crafts, Denman
Lecturers: Albance, Hallahan, Johns, Johnson, Kirkwood, Linthicum, McFall, McWilliams, O'Connor, Sanderlin, Smith, Solar, Sykes
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 this 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.

102. (SJ) Spelling (0) I, II Cr/NC

A remedial service for students wishing to improve their spelling through an intensive review of principles and practice. Open to students at any level of college work.

111. (R) Reading Development (3) I, II Cr/NC

Two lectures and three hours of laboratory.

131. 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 1.)

132. English for International or Bilingual Students (3) I, II Cr/NC

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 133. (Formerly numbered English 1.)

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

Asorted short courses which will meet three times 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.

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 designed lower division courses in selected disciplines. Students will learn concepts of the discipline and apply them to specific assignments.

150. (W) Writing Development (3) I, II Cr/NC

One lecture and four hours of laboratory.

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.

299. (99) Experimental Topics (1-4) Cr/NC

Refer to the catalog statement on Experimental Topics on page 102.

Women's Studies

Administered by the Dean of the College of Arts and Letters

Faculty

Chairperson: Boxer

Lecturers: Boxer, Huckle, Platt

Offered by 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 110 or 330, the remaining 15 units should include at least one course from three of the following groups. Group A: Experience of women in cultures or eras distinct from our own—Women's Studies 310, 340, 341A-341B; Group B: Biological and sociological determinants of women's personality and behavior—Women's Studies 320, 325, 360; Group C: Artistic expressions by and about women—Women's Studies 351, 352, 353; Group D: Participation of women in public affairs and impact of political philosophies, public institutions and public policy on women's lives—Women's Studies 370, 380, 390.

Students planning graduate work in women's studies should include Women's Studies 495. Courses in the minor may not be counted toward the major.

LOWER DIVISION COURSES

110. (10) Introduction to Women's Studies (3) I, II

Overview of the women's movement and women's studies program with emphasis on the relationship between students' personal experiences and their cultural context.

299. (99) Experimental Topics (1-4)

Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Linked Primarily for Undergraduates)

310. (100) Women in Comparative Cultures (3) I, II

Women from an anthropological perspective: economic, legal and ideological aspects of women's position in selected preindustrial or transitional communities compared with contemporary women.

320. (120) Socialization of Women (3) I, II

Theories of socialization; summary of studies in the impact of formal and informal social institutions on female development.

325. (125) Psychology of Women (3) I, II

Theories of the psychological development of women, investigation of biological and cultural factors influencing personality and behavior.

330. (130A-130B) Contemporary Issues in the Liberation of Women (3) I, II

A comprehensive study of the contemporary women's movement; feminist views of political, economic and social institutions which affect women's lives. (Formerly numbered Women's Studies 300A-330B.)

340. (140) Women in History (3) I, II

Social, cultural, economic and intellectual aspects of European women's history in selected periods. May be repeated with new content. Maximum credit: six units.

341A-341B. (141A-141B) 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. (151) Women in the Arts (3) I

Analyze the role of women in society as reflected in the plastic, graphic and performing arts; artistic contribution of women. May be repeated with new content. Maximum credit six units.
352. (150A) Women in Literature (3)

Definitions of women in society as reflected in literature and literary criticism. (Formerly numbered Women's Studies 350A.)

353. (150B) Women Writers (3)

Women writers as literary artists and social critics. (Formerly numbered Women's Studies 350B.)

360. (160) Human Sexuality (3) I, II

Biological criteria in sex role determination; the relationship of sexual mores and customs to a person's self-concept of sexuality; the relevance of current scientific investigations of the psychophysiology of human sexual response.

370. (170) Women and the Law (3) I, II

Legal factors affecting women in employment, education, health and welfare, property ownership and criminal justice, including investigation of public policy issues which affect women's lives.

380. (180) Women and Political Systems (3) I, II

Analysis of the place of women in various political theories, political and economic systems, and the processes which determine political power.

390. (190) Women and Education (3) I, II

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.

412/ Women's Studies Individual study. Maximum credit six units.

Prerequisites: Three upper division units in women's studies and consent of chairperson and instructor.

495. Seminar in Women's Studies (3)

Six upper division units in women's studies and consent of instructor. Directed research in women's studies. Field of investigation will vary with instructor. Methods of investigation, development of bibliography, presentation of paper based on original research.

497. Experimental Topics (1-4)

Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

498. (198) Field Experience (3) I, II

Prerequisite: One upper division course in women's studies.

Observation and analysis of public and private agencies in the San Diego area which deal primarily with women.

499. Special Study (1-3)

Individual study. Maximum credit six units.

Prerequisites: Three upper division units in women's studies and consent of the chairperson and instructor.

Zoology

in the College of Sciences

Faculty

Emeritus: Crouch, Harwood, Kasten
Chairman: Atkins

Professors: Akins, Bohnsack, Carpenter, Cohn, Dexter, Estes, Ethridge, Huffman, Hunsaker, McLean, Monroe, Norland, Olson, Wilson

Associate Professors: Chen, Coller, Cooper, Krekorian, Plymale

Assistant Professor: Avila

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 on page 53 of this catalog.

A minor is not required with this major.

Preparation for the major, Zoology 150 and 160 or 506; Biology 100, 100L, 215; Chemistry 200, 200L, 201, 211L, and 230, 230L or 231, 231L; Mathematics 121 or 140; Physics 115A-115B or 124A-124B (38-40 units). Recommended: Mathematics 122 or 150, and Physics 125A-125B if 124A-124B is taken.

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 "Graduation Requirements" on page 67.

Major. A minimum of 24 upper division units to include Biology 560 or Zoology 540; Biology 520 and 540; Botany 500 or 501 or 502 or 503, plus at least two upper division zoology courses with a laboratory.

Zoology Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 63 of this catalog.

A minor is not required with this major.

Preparation for the major, Zoology 150 and 160 or 506; Biology 100, 100L, 215; Chemistry 200, 200L, 201, 211L, and 230, 230L or 231, 231L; Mathematics 121 or 140; Physics 115A-115B or 124A-124B (38-40 units). Recommended: Mathematics 122 or 150, and Physics 125A-125B if 124A-124B is taken.

Major. A minimum of 36 upper division units, 28 of which must be in biology, botany, microbiology and zoology, to include the following: Biology 560 or Zoology 540; Biology 520 and 540; Botany 500 or 501 or 502 or 503, plus at least two upper division zoology courses with a laboratory. Units to complete the major must be selected with the approval of the adviser; at least eight upper division units can be in the major. Students wanting to emphasize entomology must take Zoology 521, 524, 525, 526 or 528; and 522 or 529. Zoology 523 is also recommended.
Zoology Minor
The zoology minor is intended to provide recognition for a reasonable amount of study related to zoology by students majoring in other fields. The minor consists of 15 units in the biological sciences of which at least nine units must be in upper division courses and six units must be in zoology. Students desiring a minor in zoology must obtain approval from the chairman of the Zoology Department prior to completion of nine of the required 15 units.

Courses in the minor may not be counted toward the major.

Zoology
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 School of Education.

The program described below is subject to the approval of the Commission on Teacher Preparation and Licensing. For the present time, the program is required for departmental recommendation to the student teaching program of the School of Education.

Candidates for the single subject teaching credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Preparation for the major. Zoology 150 and 160 or 506; Biology 100, 100L and 215; Chemistry 200, 200L, 201, 201L, and 230, 230L or 231, 231L; Mathematics 121 or 140; Physics 115A-115B or 124A-124B (34-40 units.) Recommended: Mathematics 122 or 150, Physics 125A-125B if 124A-124B is taken.

Major. A minimum of 36 upper division units to include Biology 410, 520, 540; Biology 560 or Zoology 540; Botany 500; Microbiology 310; at least two upper division zoology courses with a laboratory to include Zoology 503 or 510 or 521 or 535 or 570. Five units of electives must be selected with the permission of the Teaching Credential Adviser for the life sciences.

LOWER DIVISION COURSES

108. (12) 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 system of the human body.

150. (150) Invertebrate Zoology (4) I, II Two lectures and six hours of laboratory. Prerequisites: Biology 100 and 100L. Structure, function, relationships and significance of invertebrate animals as shown through a study of selected invertebrate types.

160. (60) Vertebrate Zoology (4) I, II Two lectures and six hours of laboratory. Prerequisites: Biology 100 and 100L. An introductory course in the biology of the vertebrates with emphasis on the vertebrate organism as a whole: anatomy, physiology, development and evolution.

299. (99) Experimental Topics (1-4) Refer to the catalog statement on Experimental Topics on page 102. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees in the Major Area)

502. (102) Invertebrate Embryology (3) Two lectures and three hours of laboratory. Prerequisite: Zoology 150. Description and experimental analysis of the development of invertebrates.

503. (103) Embryology (4) I, II Two lectures and six hours of laboratory. Prerequisite: Zoology 150 and 160, or 506. Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

506. (106) Comparative Anatomy of the Vertebrates (4) I, II Two lectures and six hours of laboratory. Prerequisites: Biology 100 and 100L. Dissection, study and comparison of organ systems of representative vertebrates.

508. (108) Histology (4) I, II Two lectures and six hours of laboratory. Prerequisites: Biology 100 and 100L. Recommended: Microbiology 310 or Zoology 108 or 160. Descriptive microscopic anatomy of cells, tissues and organs of mammals with special emphasis on humans.

510. (112) Marine Invertebrate Zoology (4) Two lectures and six hours of laboratory. Prerequisites: Biology 520 and Zoology 150. The ecology, morphology, and physiology of marine invertebrates. Frequent field trips to local marine environments.

515. (115) Ichthyology (4) Two lectures and six hours of laboratory. Prerequisite: Zoology 160 or 506. Identification, systematics, evolution, structure, physiology and ecology of fishes.
516. (116) Herpetology (4) I
Two lectures and six hours of laboratory.
Prerequisites: Consent of instructor.
The origin, evolution, distribution and systematics of amphibians and reptiles of the world.

517. (117) Ornithology (4) II
Two lectures, six hours of laboratory or field excursions, and a field project.
Prerequisites: Biology 100 and 100L and consent of instructor.
The study and identification of birds, especially those of the Pacific Coast and the San Diego region.

518. (118) Mammalogy (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 160 or 506.
The evolution, systematics, distribution and ecology of mammals of the world.

521. (121) General Entomology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
Structure, physiology, natural history and classification of insects.

522. (122) Special Topics in Entomology (3)
Two lectures and three hours of laboratory.
Prerequisite: Zoology 521.
Treatment of some aspect of entomology, such as biological control, microbial control or forest entomology, not covered in regularly scheduled courses. Maximum credit nine units. Maximum credit six units applicable on a master's degree.

523. (123) Immature Insects (3) II
Two lectures and three hours of laboratory.
Prerequisite: Zoology 521.
Collection, preservation, identification and biological study of the immature stages of the different insect orders. Course designed to meet the needs of students specializing in invertebrate zoology, agricultural and medical entomology, parasitology, and systematics.

524. (124) Insect Ecology (4) II
Two lectures and six hours of laboratory.
Prerequisites: Biology 502, and Botany 500 or 503. Recommended: Zoology 150 or 521.
Ecological principles as applied to insects, including consideration of crop ecosystems in relation to insect and mite outbreaks.

525. (125) Economic Entomology (4) II
Two lectures and six hours of laboratory.
Prerequisites: Zoology 150 or 521 (preferred), and Botany 503. Recommended: This course be followed by Zoology 527.
Course designed for students of agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Sanitary measures are also studied.

526. (126) Medical Entomology (4) I
Two lectures and six hours of laboratory.
Prerequisite: Zoology 150 or 160 or 521 (preferred), or Microbiology 310.
The role of insects and other arthropods in the transmission and causation of human diseases and the important diseases of domesticated animals.

527. (127) Insect Control (2) I
Prerequisites: Zoology 521, Botany 500 or 503, Recommended: Zoology 525 or 526.
A review of methods of reducing insect populations, including chemical, cultural, biological and legislative control.

528. (131) Insect Physiology (4) I
Two lectures and six hours of laboratory.
Prerequisites: Zoology 521 or an upper division course in physiology, and Chemistry 230, 230L or 231, 231L.
Description, theory and experimental analysis of all major physiological processes in insects.

529. (129) Principles of Pest Management (3) I
Two lectures and three hours of laboratory.
Prerequisites: Botany 500 or 503 or 562: Zoology 521 and 524. Recommended: Zoology 525.
Systematic analysis and synthesis of all suitable techniques known to reduce and maintain pest populations at levels below economically important injury in forestry and agriculture, based on firm ecological principles.

530. (130) Advanced Invertebrate Zoology (3)
One lecture and six hours of laboratory.
Prerequisite: Zoology 150.
Selected topics in advanced invertebrate zoology. May be repeated with new content. Maximum credit six units.

535. (128) Parasitology (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Zoology 150 or Microbiology 310.
Study 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.

540. (140) Physiological Zoology (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Zoology 160 or 506, and Chemistry 231, 231L.
A comparative and evolutionary study of the functions of organ systems and their environmental significance.

555. (154) Principles of Taxonomy, Systematics and Phylogeny (4) II
Two lectures and six hours of laboratory.
Prerequisite: Any one of the following: Zoology 150, 160, 506, Botany 501, 502, 503.
Basis for the classification of organisms. Modern concepts and their application in zoology. Specific problems in laboratory and field.

560. (160) 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. (161) 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. (170) Animal Behavior (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Zoology 150 and 160 or Psychology 210 and 260 and consent of instructor.
Prerequisites: Zoology 150 and 160 or Psychology 210 and 260 and consent of instructor.
Advanced studies in the ethological approach, including the evolution and adaptive significance of behavior.

571. Hormonal Aspects of Behavior (3)
Prerequisites: Zoology 540 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.

GRADUATE COURSES
Refer to the Graduate Catalog.
ADDENDA

Faculty and Administration
Index
Faculty and Administration 1975 – 1976

GOLDING, BRACE (1975)  President, Professor of Chemistry and Engineering
B.S., Ch.E., Ph.D., Purdue University
A.B., Sc.D., Chemistry, University of California, Los Angeles
A.B., Chemistry, Harvard University
ABBOTT, MITCHEL T. (1964)  Professor of Chemistry
B.S., Ph.D., University of California, Los Angeles
ABBOTT, PATRICK L. (1971)  Associate Professor of Geology
B.S., San Diego State College; M.A., Ph.D., University of Texas at Austin
ACKERLY, ROBERT S., JR. (1963)  Associate Dean of The University College
B.A., College of Wooster; M.A., Collegeville; Ed.D., Indiana University
ADAMS, EILEEN (M's H, 1, L)  Senior Assistant Librarian, Chairman of Education Resource Center
A.B., Williams College; B.S.L.S., University of Denver
ELLEN, ELISE B. (1951)  Associate Dean, College of Arts and Letters; Associate Professor of English
B.S., M.A., Ph.D., University of Oklahoma
ADAMS, WILLIAM J. (1965)  Professor of Speech Communication
B.S., Mckinney College; M.A., Northwestern University; Ph.D., Stanford University
ADORNO, WILLIAM (1975)  Lecturer in Cultural Pluralism
B.S., Ohio State University; M.A., California, Los Angeles; M.A., Middlebury College; Ph.D., United States International University
AJEAN, JAMES A. (1970)  Assistant Professor of Social Work
B.A., Harvard College; M.S., Columbia University; Ph.D., University of Michigan
ALEXANDER, CYNTHIA L. (1974)  Scholarship Adviser
B.S., M.A., Ball State University
ALEXANDER, JAMES V. (1967)  Assistant Professor of Botany
A.B., San Diego State University; M.S., Ph.D., University of California
ALFREDO F. JR. (1969)  Professor of Psychology
A.B., San Diego State University. Ph.D., University of Washington
ALLEN, CARL P. (1975)  Ph.D., University of Minnesota
B.A., M.S., Ball State University
ALLEN, ELIZABETH J. (1971)  Associate Professor of Speech, Pathology and Audiology
B.S., Seattle Pacific College; M.A., Ph.D., Louisiana State University
ALMOND, FRANK W. (1958)  Associate Professor of Music
B.S., San Diego State College; M.A., Ph.D., Indiana University, Los Angeles; Ph.D., University of Arizona
ALTAMURA, NICHOLAS C. (1967)  Assistant Professor of Secondary Education
B.S., Ithaca College; M.Ed., University of Arizona; Ph.D., Arizona State University
ANGIER, ELIZABETH H. (1954)  Counselor
B.A., California State; M.S., San Diego State University
AMBIEE, KAREL (1962)  Professor of Drama
B.A., Denison University; M.A., Ph.D., Northwestern University
ANDERES, EUGENIA A. (1968)  Professor of Microbiology
A.B., San Diego State University; Ph.D., Oregon State University
ANDERSON, ALLAN W. (1962)  Professor of Religious Studies
A.B., Whittier College; M.A., Trinity College; Ph.D., Columbia University, California
ANDERSON, DOROTHY G. (1959)  Associate Professor of Political Science
B.A., University of Montana; M.A., Ph.D., University of California, Berkeley
B.A., University of Montana; M.A., Ph.D., University of California, Berkeley
ANDERSON, GUSTAVO (1964)  Professor of Elementary Education
B.A., Gustavus Adolphus College; M.A., University of Minnesota; Ed.D., University of Denver
ANDERSON, GRAYDON K. (1948)  Professor of Economics
B.B., Willamette University; Ph.D., University of Wisconsin
ANDERSON, HAYES L. (1966)  Associate Professor of Telecommunications and Film
B.A., Oregon State University; M.A., Ph.D., Michigan State University
ANDERSON, NANCY (1972)  Psychologist
A.B., San Diego State University
ANDERSON, PAUL V. (1954)  Professor of Music
B.M., North Texas State College; M.M., University of Wisconsin
ANDERSON, W. CARL (1968)  Professor of Industrial Arts
B.S., Nebraska State Teachers College; M.A., Ph.D., University of Minnesota
ANDERSON, ZOE E. (1965)  Associate Professor of Family Studies and Consumer Sciences
B.S., Illinois Institute of Technology; M.S., Ph.D., University of Illinois
ANDRI, CHARLES P. (1954)  Associate Professor of Political Science
B.A., Whittier College; M.A., Ph.D., University of California
ANDRUS, RUTH (1962)  Professor of Physical Education
B.S., Utah State University; M.S., University of Oregon; Ph.D., State University of Iowa
ANGELONE, ROBERT J. (1963)  Associate Professor of Dairy Science
A.B., San Diego State University; Ph.D., University of Texas
ANNING, THOMAS (1967)  Associate Professor of English
A.B., M.A., Ph.D., University of California, Los Angeles
ANNIS, ALDEN M. (1970)  Associate Professor of Drama
A.B., University of Detroit; M.P.A., University of Texas
ANTHONY, SALLY M. (1965)  Associate Professor of Secondary Education
A.B., University of Los Angeles; Ed.M., Ed.D., Rutgers University;
ERICKSON, PAUL (1943). B.A., Arizona State University; M.A., Stanford University; Ed.D., University of Southern California. Professor of Secondary Education


ESSER, JANET B. (1969). B.S.F.A., University of Iowa; B.S., Kent State University; M.A., California State University, Long Beach. Assistant Professor of Art

ESTES, RICHARD D. (1979). B.A., M.A., Ph.D., University of California, Berkeley. Professor of Zoology


ETHERIDGE, RICHARD E. (1961). B.E., Talkeetna University; M.S., Ph.D., University of Michigan. Professor of Zoology

EZELL, PAUL H. (1956). B.S., Arizona State College; M.S., University of Illinois; Ed.D., University of Southern California. Professor of Anthropology


FABER, GEORGE (1969). B.A., University of California, Los Angeles; M.A., California State University; Los Angeles; Ph.D., University of California, Los Angeles. Associate Professor of English


FAHR, WILLIAM P. (1967). B.S., State University College, Pa., M.A., Ed.D., Arizona State University. Professor of Special Education

FEDDING, ANDREW L. (1969). B.S., University of Missouri; M.S., Ph.D., Columbia University. Associate Professor of Philosophy


FERRE, ELSA (Mrs. G.) (1971). B.A., M.A., Columbus State College; Ph.D., Boston University.

FERRADOUR, ROSELINDA M. (Mrs. T.) (1954). B.A., Southampton College. Associate Professor of Health Science and Safety

FERRIS, ARLINE M. (1961). B.A., University of New Mexico; M.S., Colorado State College; Ed.D., Boston University. Assistant Professor of Psychology


FETE, ELA N. A. (1964). B.S., University of Utah; M.S., Ph.D., University of California.

FILNER, ROBERT R. (1970). B.A., Cornell University; M.A., Teheran; Ph.D., Cornell University. Assistant Professor of History

FINCH, WILLIAM A. JR. (1961). B.A., East Carolina College; M.A., University of Oklahoma; Ph.D., University of Illinois. Professor of Geography

FISCH, ARLENE (1961). B.S., Bradbury University; M.A., University of Illinois. Professor of Art


FISHER, RICHARD P. (1973). B.S., Baldwin-Wallace College; M.S. (Ch.E.), Ph.D., Ohio State University. Professor of Mechanical Engineering

FISCHER, HORACE H. (1950). B.A., University of Utah; M.A., Stanford University; Ph.D., University of Southern California. Associate Professor of Finance

FISHER, J. GODFREY (1962). B.S., Bethany College; M.A., Teachers College, Columbia University; Ph.D., University of Pittsburgh.

FISHER, ROBERT R. (1966). B.S., M.S., Ed.D., Indiana University; Ph.D., University of Southern California. Professor of Mathematics

FISCHER, ROBERT G. (1973). B.S., Long Island University, M.D., Marietta School of Medicine. M.D., Health Services

FITZ, RICHARD A. (1959). B.S., Baldwin-Wallace College; M.S. (Ph.E.), Ph.D., Ohio State University. Professor of Mechanical Engineering

FLETCHER, GERRIT (1965). B.A., Harvard College; Ph.D., University of California.


FLAGG, JOAN M. (Mrs. D. E.) (1966). B.S.N. University of Iowa; M.S., University of California, San Francisco. Assistant Professor of Nursing

FLANNAGAN, FRANCIS JAMES (1973). B.S., St. Peter's College; Ph.D., University of Berkeley. Assistant Professor of Mathematics

FLEMING, JESSE E. STODDART (Mrs. F. P.) (1961). B.A., Carol College; M.S., University of Nebraska; Ph.D., University of California. Assistant Professor of History

FLEMING, PHILIP (1968). B.A., R.E., M.A., Ohio State University; Ph.D., University of Florida.

FLINT, GLENNA A. (1970). A.B., M.A., University of California; Ph.D., University of Michigan. Associate Professor of Music


FONTELLA, LEONARD (1949). B.A., Brooklyn College; M.A. State University of New York.

FORBES, SHIRLEY A. (1960). A.B., M.S., San Diego State University; Ed.D., University of Southern California. Associate Professor of Special Education

FOSTER, FRANCES S. (Mrs. O.) (1972). B.S., Hamilton College, M.S., Pennsylvania State University; Ph.D., University of Wisconsin. Associate Professor of Geology

FREDEKSEN, NORMAN O. (1959). B.A., Cornell University; M.A., University of Illinois; Ph.D., University of Wisconsin. Associate Professor of Geology

FREIDRICH, BARBARA S. (1972). B.A., University of Wisconsin; M.A., University of California, Los Angeles. Assistant Professor of Physical Education

FRESCHLAG, JERRY A. (1974). B.S., M.S., Illinois College, M.A., Stanford University; Ph.D., Ronda State University. Professor of Linguistics


FRIEDMANN, ELIZABETH (1969). B.A., University of Dayton; M.A., Ph.D., Marquette University. Associate Professor of Art

FRIEDMAN, ARTHUR M. (1960). B.A., University of Chicago; M.A., Ph.D., University of California. Associate Professor of Physical Education

FRIEDMAN, ABRAHAM M. (1960). B.A., Springfield College, Massachusetts; graduate study, Columbia University; School of Social Work, M.A., San Diego State College; Ph.D., University of Southern California. Associate Professor of Religious Studies, Philosophy and Comparative Literature

FRIEDMAN, MAURICE STANLEY (1973). B.A., University of California; M.A., Ohio State University; Ph.D., University of Chicago, L.L.D., University of Vermont. Associate Professor of Secondary Education

FRIEDRICH, KURT (1949). B.A., University College, M.A., Columbia University, Ed.D., Teachers College, Columbia University. Assistant Professor of Psychology, Professor of Family Studies and Consumer Sciences

FROST, DAVID M. (1973). B.A., Macalester College; M.A., University of Minnesota; Ph.D., Northwestern University. Assistant Professor of Psychology

FUELHAI, JENNIFER L. (1954). B.E., Southern Illinois University; M.A., University of California, Los Angeles. Associate Professor of Political Science

FUNK, RICHARD Y. (1970). B.A., M.A., Ph.D., University of California, Los Angeles. Associate Professor of Biology

FUTCH, DAVID G. (1967). B.S., University of North Carolina; M.A., Ph.D., University of Texas.


GALLO, PHILIP, S. JR. (1953). B.A., M.A., California University, Santa Barbara; Ph.D., University of California, Los Angeles.

GALLO, WILLIAM H. (1952). B.A., M.A., California University, Santa Barbara; Ph.D., University of California. Professor of Botany

GANUS, WILLIAM (1962). B.S., M.A., San Diego State University; Ph.D., University of Michigan.


GANNON, JOHN O. (1957). B.S., San Juan's University; M.A., Catholic University of America; M.S., Manhattanville College; M.S., San Diego State College. Assistant Professor of Geology

GARLAND, WILLIAM J. (1972). B.S., University of Texas; Austin; M.S., Ph.D., University of Arizona.

GARDNER, EVELYN K. (1957). B.S., Illinois College; B.A., Bowing Green State University; M.A., Ohio State University; Ph.D., Oregon State University. Associate Professor of Physics

GARDNER, JESSE E. (1960). B.A., M.A., University of California; Los Angeles; Ph.D., University of California. School Relations Officer


GAST, DAVID K. (1953). B.S., University of California, Berkeley.


GATES, GERALD F. (1956). B.A., Occidental College; M.A., University of Colorado, M.A., University of Denver. Assistant Professor of Marketing

GATES, GREGORY M. (1975). B.A., Occidental College; M.S., University of Michigan; Ph.D., Arizona State University.
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KITCHEN, JAMES D. (1957) ........................................... Professor of Public Administration and Urban Studies B.A., M.A., Ph.D., University of California, Los Angeles.

KLAAS, CORNHED F. (1962) ........................................... Assistant Professor of Elementary Education B.A., Western Washington College, M.A., Teachers College, Columbia University.

KLEE, GARY A. (1974) ........................................... Lecturer in Geography B.A., California State University, San Francisco; Ph.D., University of Oregon.

KOCHANGKI, ADRIAN J. (1969) ........................................... Dean of Academic Planning, Professor of Public Administration A.B., M.A., M.P.A. (Theology), St. Louis University; Ph.D., University of Chicago.


KOLER, RICHARD C. (1969) ........................................... Associate Professor of English B.A., Colorado State University, M.A., Ph.D., University of California, Los Angeles.

KOLAR, JANET M. (1970) ........................................... Assistant Professor of Music B.M., University of Montana, M.A., Columbia University.

KOLK, ANDREW J. (1974) ........................................... Assistant Professor of Educational Technology and Library Science A.B., Wabash College, M.S., Indiana University.

KOLDU, BOBIAN (1974) ........................................... Assistant Professor of Sociology B.S., Clemson University, M.A., Bowling Green State University, Ph.D., University of Oregon.


KOPP, ROBERT P. (1966) ........................................... Associate Professor of Mathematics B.S., University of Chicago, M.S., University of Illinois, Ph.D., University of Michigan.

KORPELI, CHRISTOS L. (1969) ........................................... Professor of Psychology B.S., City College of New York; J.D., New York University, Ph.D., Columbia University.

KOPPIMAN, JERRY W. (1963) ........................................... Professor of Psychology B.S., University of Kentucky, M.A., Ph.D., Illinois University.

KORVEA, PIA R. (Mrs. J.) (1971) ........................................... Assistant Professor of Mathematics B.A., M.A., Ph.D., University of Texas.

KOZLOK, LIEUD A. (1965) ........................................... Professor of Russian B.A., M.A., Ph.D., University of Texas.

KRAMER, PETER, CAPTAIN (1970) ........................................... Assistant Professor of Aerospace Studies B.A., George Washington University, University of California, Los Angeles; M.A., University of North Carolina.

KREGG, CHARLES O. (1970) ........................................... Associate Professor of Zoology A.B., M.A., Cal State University, Los Angeles; Ph.D., University of Toronto.

KRISHNAMURTHY, GOVINDARAJU (1969) ........................................... Associate Professor of Biology B.S., University of Illinois; M.S., U.C.L.A.; Ph.D., Illinois Institute of Technology.

KRAMER, HOWARD (1968) ........................................... Professor of Sociology B.S., Brooklyn College; B.A., Brooklyn College, Ph.D., University of New Mexico.

KUKKEN, RUTH M. (1973) ........................................... Senior Professor of Social Work B.A., Wayne State University, M.S.W., University of Michigan.

KUMPKER, JOCHEN (1973) ........................................... Professor of Botany, University of Maritz, Dr., wet., Ph.D., nat., University of Tusingen.

KWALL, MARY J. (Mrs. B. J. 1969) ........................................... Assistant Professor of Family Studies and Consumer Sciences B.S., Kent State University, M.S., Ohio State University, Ph.D., University of Oregon.

LABOITZ, EUGENE B. (1964) ........................................... Lecturer in Sociology B.A., California State University, Northridge, M.A., University of California, Santa Barbara; Ph.D., University of Southern California.

LAIRO, ETHEL E. (1964) ........................................... Associate Professor of Nursing Diploma, Mount Zion Hospital School of Nursing, San Francisco; A.B., San Francisco State University, M.S., University of Michigan.

LAM, ALMA S. (Mrs. G. F.) (1963) ........................................... Assistant Librarian B.S., University of Arizona.

LAMBERT, ARTHUR A. (1960) ........................................... Professor of Music B.S., M.A., M.F.A., Ph.D., Iowa, University.

LAMKE, GENE G. (1973) ........................................... Assistant Professor of Political Science B.A., San Diego State University.

LAMONICA, GRACE (Mrs. J. J.) (1966) ........................................... Professor of Nursing R.N., St. Francis School of Nursing, B.S., University of Connecticut; B.S., University of California, M.S. (Public Health), University of California, Los Angeles.

LANDIS, JEAN (1969) ........................................... Assistant Professor of Physical Education B.A., San Diego State University; M.S., Wesley College; additional graduate study, University of Delaware.

LANS, VINCENT J. (1964) ........................................... Professor of Chemistry B.A., M.A., Montana State University, Ed.D., University of California, Los Angeles.


LANGLEY, NANCY B. (1969) ........................................... Financial Aid Counselor B.A., West Virginia University; M.A., Ohio State University.

LA PRAT, MARGARET H. (1959) ........................................... Professor of Elementary Education B.S., M.A., Montana State University, Ph.D., Cornell University.

LASITER, CARL W., LT. COL. (1976) ........................................... Professor of Aerospace Studies M.S., University of Dayton; M.A., Ph.D., University of North Dakota.


LaUGAN, ROSELYN S. (1969) ........................................... Professor of Philosophy B.A., University of Dayton; M.A., Ph.D., St. Louis University.

LAURENCE, VINCENT R. (1966) ........................................... Professor of Electrical Engineering B.S., University of California, Ph.D., Stanford University.

LEUKER, J. ERIC (1975) ........................................... Professor of Economics B.A., University of New Mexico; M.A., Princeton University.

LEBLOH, HERBERT G. (1975) ........................................... Professor of Psychology B.A., M.A., San Francisco State University, Ph.D., University of Washington.

LECKEY, GEORGE (1964) ........................................... Professor of Psychology B.S., San Francisco State University; D.W.S., University of California.

LEWIN, RUTH E. (1964) ........................................... Professor of Social Work B.A., Iowa State Teachers College; M.A., University of Denver.

LEWIS, GEORGE (1968) ........................................... Associate Professor of Spanish Study at the Universidad Nacionales de Mexico; B.A., M.A., Ph.D., University of Texas.

LEPAPOLLO, JEAN R. (1973) ........................................... Associate Professor of Computer Education B.A., University of Oregon; M.A., Ph.D., University of California, Berkeley.

LESLIE, FRANK G. (1970) ........................................... Associate Professor of Mathematics B.A., Stanford University, M.A., Ph.D., University of California, San Diego.

LESLIE, NORMAN C. (1959) ........................................... Assistant Professor of Nursing B.A., Rockford State Hospital; B.S., California State University, Long Beach; M.N., University of California, Los Angeles.

LEWIS, MARVIN J. (1969) ........................................... Associate Professor of Drama B.A., University of Utah; M.A., University of Minnesota; Ph.D., University of Utah.

LEVINES, FRANCES (1959) ........................................... Professor of Psychology B.S., University of Florida; M.S., Northwestern University; Ph.D., University of Washington.

LEVINE, JOSEPH R. (1965) ........................................... Professor of Psychology B.A., University of California, M.A., Ph.D., Michigan State University.

LEWIS, HARLAN J. (1967) ........................................... Professor of Political Science B.A., UC Berkeley; M.A., Ph.D., University of California.

LINDENBERG, DAVID A. (1959) ........................................... Professor of Educational Administration B.S., South Dakota State College; M.A., University of Illinois; M.S., University of Wisconsin.

LINDENBERG, PAUL A. (1957) ........................................... Professor of Art B.A., University of California, Santa Barbara; M.A., University of California.


LIPPOLO, JOHN C. (1969) ........................................... Professor of Anthropology B.A., M.S. Ph.D., University of Wisconsin, Madison.

LITTMAN, ALAN J. (1971) ........................................... Associate Professor of Political Science B.A., University of California, Los Angeles; M.A., Ph.D., University of Illinois.

LITTLE, RICHARD D. (1974) ........................................... Professor of Political Science B.A., M.A., California State University, Berkeley; M.A., Ph.D., University of Los Angeles; Dean of Continuing Education.

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