### Table of Contents

<table>
<thead>
<tr>
<th>Publications of San Diego State University</th>
<th>Inside Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Calendar</td>
<td>5</td>
</tr>
<tr>
<td>Academic Calendar</td>
<td>6</td>
</tr>
<tr>
<td>Schedule of Fees</td>
<td>7</td>
</tr>
<tr>
<td>Student Services Fee</td>
<td>9</td>
</tr>
<tr>
<td>Debts Owed to the Institution</td>
<td>10</td>
</tr>
</tbody>
</table>

#### Organization and Administration

- The California State University and Colleges...
- Costs and Sources of Funds...
- Board of Trustees...
- Office of the Chancellor...
- Campus Locations...
- Advisory Board...
- Administration...
- Colleges, Schools, Departments...

#### General Information

- General Information...
- San Diego State University...
- Library...
- Accreditation...
- Degrees and Curricula...

#### Imperial Valley Campus

- Faculty...
- Location and Function...
- Program...
- Registration and Commencement...
- Physical Facilities...
- Placement, Employment, and Information...

### Special Programs and Services

- Teaching and Learning Council...
- Summer Sessions and External Programs...
- Academic Programs...
- International Programs...
- Graduate Degree Programs...
- Conferences and Professional Programs...
- Special Sessions and Travel Study Programs...
- Research Bureaus...
- Computer Center...
- San Diego State University Foundation...
- Audiovisual Center...
- San Diego State Press...

#### Financial Aid

- Cost of Living...
- Financial Aid...
- Applying for Aid...
- Alan Patten Scholarship...

---

### Table of Contents

<table>
<thead>
<tr>
<th>Student Services</th>
<th>39</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Counseling Center</td>
<td>39</td>
</tr>
<tr>
<td>Health Services</td>
<td>39</td>
</tr>
<tr>
<td>Career Planning and Placement Center</td>
<td>39</td>
</tr>
<tr>
<td>Vocational Rehabilitation</td>
<td>40</td>
</tr>
<tr>
<td>Audiology Diagnostic Center</td>
<td>40</td>
</tr>
<tr>
<td>Speech and Hearing Clinic</td>
<td>40</td>
</tr>
<tr>
<td>Clinical Training Clinic</td>
<td>40</td>
</tr>
<tr>
<td>Student Activities</td>
<td>40</td>
</tr>
<tr>
<td>Student Centers</td>
<td>41</td>
</tr>
<tr>
<td>Child Care Center Program</td>
<td>41</td>
</tr>
<tr>
<td>Aztec Shops</td>
<td>42</td>
</tr>
<tr>
<td>Alumni Association</td>
<td>42</td>
</tr>
<tr>
<td>University Housing Services</td>
<td>42</td>
</tr>
<tr>
<td>Residence Halls</td>
<td>42</td>
</tr>
<tr>
<td>Off-Campus Housing</td>
<td>43</td>
</tr>
<tr>
<td>Greek Letter Groups</td>
<td>43</td>
</tr>
<tr>
<td>Transportation and Parking</td>
<td>43</td>
</tr>
<tr>
<td>Educational Opportunities Program</td>
<td>43</td>
</tr>
<tr>
<td>Veterans</td>
<td>43</td>
</tr>
<tr>
<td>Disabled Students</td>
<td>43</td>
</tr>
</tbody>
</table>

#### Regulations

- Admissions and Registration...
- Admission to the Campus...
- Undergraduate Application Procedures...
- Quotas and Impacted Programs...
- Postbaccalaureate Application...
- Application Filing Periods...
- Space Reservations...
- Hardship Petitions...
- Filing of Records...
- Completion of Required Tests...
- Undergraduate Admissions...
- Eligibility Index...
- Undergraduate Transfers...
- Evaluations of Transfer Credits...
- Other Applicants...
- Admission of Postbaccalaureate and Graduate Students...
- Postbaccalaureate Standing (unclassified)...
- Postbaccalaureate Standing (classified)...
- Graduate Standing (conditionally classified)...
- Graduate Standing (classified)...
- International Students Admissions...
- Limitation of Enrollment...
- Registration...
- Determination of Residence...
- Advising...

#### General Regulations

- Responsibility for Catalog...
- Information...
- Grades...
- Courses...
- Final Examination...
- Credit Through Examination...
- Academic Credit for Military Service...
- Student Classification...
- Student Program and Records...
- Withdrawals, Leave of Absence...
- Readmission, and Evaluation...
- Credit and Study List Limits...
- Scholastic Probation and Disqualification...
- Student Discipline and Grievances...

#### Graduation Requirements

- Unit Requirements...
- Grade Point Average Requirement...
- Competency Requirements...
- Foreign Language Requirement...
- Physical Activities Requirement...
- Major and Minor...
- American Institution...
- General Education Requirements...
- Application for Graduation...
- Graduation with Honors and Distinction...
- Second Bachelor's Degree...

#### Curricula

- Summary of Curricula Offered...
- Majors and Degrees...
- Special Curriculums...
- Teaching Credential...
- Minors...

#### Interdisciplinary Programs

- African Studies...
- Child Development...
- Jewish Studies...
- Liberal Studies...
- Middle East Studies...
- Native American Studies...
- Russian and East European Studies...

#### University College

- Objectives and Functions...
- Coordinated Freshman Studies...
- Honors Program...
- Study Skills Center...
- Test Office...

#### Graduate Division

- Organization and Administration...
- Graduate Membership...
- Degrees Offered...
- Admission Procedures...
- Withdrawal and Reinstatement...
- Advanced Degree Curriculums...
- Graduate Bulletin...

#### Nondegree Curriculums

- Preprofessional Programs...

#### Professional Curriculums

- School of Business Administration...
- School of Education...
- School of Engineering...
- School of Social Work...

#### Announcements of Courses

- Courses and Curricula...
- Aerospace Studies...
- Afro-American Studies...
- American Studies...
- Anthropology...
- Arabic...
- Art...
- Asian Studies...
- Astronomy...
- Athletics...
- Biology...
- Botany...
- Business Administration...
- Chemistry...
- Chinese...
- Classical and Near Eastern Languages...
- Classics...
- Comparative Literature...
- Criminal Justice Administration...
- Drama...
- Economics...
- Education...
- Engineering...
- English...
- European Studies...
- Family Studies and Consumer Sciences...
- French...
- General College...
- Geography...
- Geology...
- German...
- Greek...
- Health Science and Safety...
- Hebrew...
- History...
- Humanities...
- Industrial Arts...
- Industrial Technology...
- Italian...
- Japanese...
- Journalism...
- Latin...
- Latin American Studies...
- Linguistics...
- Mathematics...
- Mexican-American Studies...
- Microbiology...
- Music...
- Nursing...
- Oceanography...
Table of Contents

- Philosophy
- Physical Education
- Physical Science
- Physics
- Political Science
- Portuguese
- Psychology
- Public Administration and Urban Studies
- Recreation
- Religious Studies
- Russian
- Social Science (Emphasis in): Africa and the Middle East, Environment
- Spanish
- Speech Communication
- Speech Pathology and Audiology
- Study Skills
- Telecommunications and Film
- Women's Studies
- Zoology

Addenda

- Faculty Directory
- Index

Social Welfare
Social Work
Sociology
Spanish
Speech Communication
Speech Pathology and Audiology
Study Skills
Telecommunications and Film
Women's Studies
Zoology

Annual Calendar

1975

JANUARY
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M
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F
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1
2
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11
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10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

Addenda

- Faculty Directory
- Index
1975-1976 Academic Calendar

**Summer Sessions, 1975**
- June 2-20
- June 23-August 1
- August 4-22
- Fall Semester, 1975
- August 1-31
- August 13, 15, 19, 22, 26, 27
- August 18-29
- August 25
- September 1
- September 2
- September 16, 17, 25, 26, October 15 and 16, November 5 and 6
- September 15
- September 16
- September 19, 22, 27 and November 14
- September 19
- September 29
- October 10
- November 1-30
- November 11
- November 27-30
- December 1
- December 12
- December 13
- December 22
- December 31
- Spring Semester, 1976
- August 1-31
- January 8, 14, 16, 19 and 20
- January 12-23
- January 12
- January 26
- January 27

**Term I summer session (3 weeks).**
- Applications for admission or readmission to San Diego State University for the Spring semester 1976. Accepted after this date only until enrollment quotas are met.
- Chemistry placement examinations for students planning to enter Chemistry 200A or 204A.
- Mathematics placement examinations for students planning to enroll in Mathematics 103, 104, 119, 120, 121, 140, 150; or Economics 142.
- Testing, advising and registration.
- Opening date of the academic year.
- Holiday—Labor Day.
- First day of classes.

**Term I summer session (3 weeks).**
- Reading Comprehension test for transfer students entering elementary or kindergarten-primary education.
- Last day to apply for refunds.
- File application for admission to elementary teacher education assembly.

**Term I summer session (3 weeks).**
- English Proficiency Examination for students entering secondary education.
- Last day to file application for bachelor's degree for mid-year graduation.
- Last day to withdraw from class or change program.
- Holiday—Columbus Day.
- Application for admission or readmission to San Diego State University for the Fall semester 1976. Accepted after this date only until enrollment quotas are met.
- Holiday—Veterans Day.
- Thanksgiving Recess.
- Last day to file application for the bachelor's degree for June or summer graduation.
- Last day of classes before final examination.
- First day of final examinations.
- Winter recess begins.
- Grades due. Last day of fall semester.

**Spring Sessions, 1976**
- June 1-18
- June 21-July 30
- July 5
- August 2-20

**Term I summer session (3 weeks).**
- Applications for admission or readmission to San Diego State University for the Spring semester 1976. Accepted after this date only until enrollment quotas are met.
- Chemistry placement examinations for students planning to enter Chemistry 200A or 204A.
- Mathematics placement examinations for students planning to enroll in Mathematics 103, 104, 119, 120, 121, 140, 150; or Economics 142.
- Testing, advising and registration.
- First day of classes.
- File application for admission to elementary teacher education assembly.

**Term II summer session (6 weeks).**
- Term III summer session (3 weeks).
Schedule of Fees

Fees are subject to change by The Trustees of the California State University and Colleges. Fees MUST BE PAID AT TIME OF REGISTRATION. CHECKS ACCEPTED FOR EXACT AMOUNT OF FEES. (IF YOUR CHECK IS RETURNED BY THE BANK FOR ANY REASON, YOUR REGISTRATION WILL BE CANCELED AND YOU WILL BE BILLED $15.00.)

Fees for Student Services—All Students: on basis of units carried. (Auditors pay same fees as students carrying courses for credits.)

<table>
<thead>
<tr>
<th>Units</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$73.00</td>
</tr>
<tr>
<td>4</td>
<td>$79.00</td>
</tr>
<tr>
<td>8</td>
<td>$85.00</td>
</tr>
<tr>
<td>12 or more</td>
<td>$94.00</td>
</tr>
</tbody>
</table>

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)

1. In addition to student services and activity fees.
2. Nonresident student enrolled for 15 units or more: $650.00
3. Nonresident student enrolled for less than 15 units or fraction thereof: per unit $43.00
4. Health Insurance (mandatory for foreign students) approximately $33.00

Parking Fees

Nonreserved parking space, per semester: $15.00

Miscellaneous Fees (Fees payable when service is rendered).

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application for admission or readmission (nonrefundable)</td>
<td>$20.00</td>
</tr>
<tr>
<td>Late registration (Refer to class schedule for dates when this fee will be assessed)</td>
<td>$5.00</td>
</tr>
<tr>
<td>Photo-Identification Card (One-time cost to new students at time of registration)</td>
<td>$2.00</td>
</tr>
<tr>
<td>Lost Identification Cards/Stickers Card only</td>
<td>$2.00</td>
</tr>
<tr>
<td>Registration sticker only Card and sticker</td>
<td>$2.00</td>
</tr>
<tr>
<td>Transcript of record R.O.T.C. deposit (unexpended portion is refundable)</td>
<td>$1.00</td>
</tr>
<tr>
<td>Check returned for any cause</td>
<td>$5.00</td>
</tr>
<tr>
<td>Loss of equipment or library books</td>
<td>$1.00</td>
</tr>
<tr>
<td>Graduation Fee</td>
<td>$6.00</td>
</tr>
<tr>
<td>Credential Fee</td>
<td>$20.00</td>
</tr>
</tbody>
</table>

Bank American Cards

Students may use California Bank American cards (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 Cashier's Office in CLS-108.

REGULAR SESSION FEE REFUNDS

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 $15.00 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>(1) Before or during the first week of the semester</td>
<td>100 percent of fee</td>
</tr>
<tr>
<td>(2) During the second week of the semester</td>
<td>90 percent of fee</td>
</tr>
<tr>
<td>(3) During the third week of the semester</td>
<td>70 percent of fee</td>
</tr>
<tr>
<td>(4) During the fourth week of the semester</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>(5) During the fifth week of the semester</td>
<td>30 percent of fee</td>
</tr>
<tr>
<td>(6) 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.

<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 refund application is obtained from the Cashier's Office, CL-108.

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

SUMMER SESSION FEES

Tuition, each session: $30.00 (per unit)

Activity Fee

Term I: 1.00
Term II: 2.00
Term III: 3.00

Student Union Fee

Term I: 2.00
Term II: 3.00
Term III: 3.00

Parking Fees (nonreserved spaces):

<table>
<thead>
<tr>
<th>Period</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire summer</td>
<td>$10.00</td>
</tr>
<tr>
<td>Six-week session</td>
<td>$6.00</td>
</tr>
<tr>
<td>Three-week session</td>
<td>$4.00</td>
</tr>
</tbody>
</table>

EXTENSION COURSE FEES

Lecture or discussion course: $28.00 (per unit)

EXEMPTIONS

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

No fee of any kind shall be required of or collected from those individuals who qualify for such exemption under the provisions of the Allan Patten Scholarship Act.

STUDENT SERVICES Fee

The Student Services Fee for 1975-76 was recently established by the Trustees of The California State University and Colleges in lieu of the Material and Services 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.
The California State University
and Colleges
Board of Trustees
San Diego State University
Advisory Board Administration
Colleges, Schools, Departments

Organization and Administration
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 1974 totaled approximately 292,000 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 465,000 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 1974-75 year, the total cost of operation is $603 million, which provides continuing support for 231,295 full-time equivalent (FTE) students. This results in an average cost per FTE student of $2,608 per year. Of this amount, the average student pays $254. Included in this average student payment is the amount paid by nonresident students. The amount, or $2,354 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:

1974-75 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>$488,163,528</td>
<td>$2,111</td>
<td>81.0</td>
</tr>
<tr>
<td>State Funding (Capital Outlay)**</td>
<td>28,615,000</td>
<td>124</td>
<td>4.8</td>
</tr>
<tr>
<td>Student Charges</td>
<td>58,806,800</td>
<td>254***</td>
<td>9.7</td>
</tr>
<tr>
<td>Federal (Financial Aids)</td>
<td>27,456,316</td>
<td>119</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>$603,041,644</td>
<td>$2,608</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* For budgetary purposes, full-time equivalent (FTE) translates total head counts 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 more than 14,000 acres of land and the wide range of facilities and equipment on the 19 campuses are currently valued at approximately $1.7 billion. Amortized over a 40-year period, they are valued at $125 per FTE student.

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Trustees of The California State University and Colleges

Ex Officio Trustees
Hon. Edmund G. Brown, Jr. .................................................. State Capitol
Governor of California ....................................................... Sacramento 95814
Hon. Mervyn Dymally .......................................................... State Capitol
Lt. Governor of California .................................................. Sacramento 95814
Hon. Leo McCarthy ............................................................ State Capitol
Speaker of the Assembly ..................................................... Sacramento 95814
Hon. Wilson C. Riles .......................................................... 721 Capitol Mall
State Superintendent of Public Instruction ............................ Sacramento 95814
Dr. Glen S. Dumke ............................................................. 5670 Wilshire Blvd.
Chancellor of The California State University and Colleges

Appointed Trustees
Appointments are for a term of eight years expiring March 1 of the years in parentheses. Names are listed in order of appointment to the Board.

Charles Luckman (1982)
9200 Sunset Blvd., Los Angeles 90069
Daniel H. Ridder (1975)
604 Pine Ave., Long Beach 90801
Karl L. Wente (1976)
5565 Tesla Road, Livermore 94550
W. O. Weisssch (1977)
1299 4th St., San Rafael 94901
Rovert A. Hornby (1978)
810 South Flower St., Los Angeles 90017
Wendell W. Witter (1979)
45 Montgomery St., San Francisco 94106
Mrs. Winfred H. Lancaster (1977)
P.O. Drawer JJ, Santa Barbara 93102
Gene M. Benedetti (1978)
8990 Poplar Ave., Corte Madera 94925
Robert F. Beaver (1976)
254 East 27th St., Los Angeles 90011
Roy T. Brophy (1980)
2160 Royale Rd., Suite 20, Sacramento 95815
Mrs. C. Stewart Ritchie (1980)
1064 Creek Dr., Menlo Park 94025
Frank P. Adams (1981)
235 Montgomery St., San Francisco 94104
Richard A. Garcia (1979)
P.O. Box 2073, Glendale 91209
Dean S. Lesher (1981)
P.O. Box 5166, Walnut Creek 94596
Dr. Claudia H. Hampton (1982)
450 North Grand, Rm. 2533, Los Angeles 90012
Mrs. Yvonne W. Larsen (1975)
1405 Savoy Circle, San Diego 92107

Officers of the Trustees
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President ................................................................. Chairman
William O. Weisssch ....................................................... Chancellor Glenn S. Dumke
Vice Chairman ............................................................. Secretary-Treasurer
Principal Officers of Administration

President: Brage Golding
Vice President for Academic Affairs: Trevor Colbourn
Vice President for Planning and External Affairs: Ernest B. O'Byrne
Dean of Student Affairs: Daniel B. Nowak
Director of Business Affairs: William L. Erickson

Administration

Office of the President
Executive Assistant to the President: Robert McCoy

Office of the Vice President for Academic Affairs
Associate Vice President for Academic Affairs: Ned V. Joy
Dean of Academic Administration: George C. Gross
Dean of Academic Planning: Adrian J. Kochanski
Assistant Vice President for Academic Affairs: Shirley Anne Rush
Curriculum Assistant to the Vice President for Academic Affairs: Jane K. Smith
Dean of Continuing Education: William P. Locke
Director of Community Services: Marilyn R. Petteys
Director of External Academic Programs: Lawrence A. Clinger
Director of Summer Programs and Education Services: Larry G. Cobb
Director of Audiovisual Services: E. Glen Fulkerson
Director of Library Services: Louis A. Kenney
Coordinator of Affirmative Action: Joseph M. Samuels

Office of the Vice President for Planning and External Affairs
Public Affairs Director: Gordon F. Lee
Manager, KPBS-TV/FM: Paul J. Steen
Assistant to the Vice President for Planning and External Affairs: George N. Sorenson
Coordinator for Alumni Affairs: Robert R. Nardelli
Director of International Projects: L. Floyd Kendall
Coordinator, Brazilian Project: Emery J. Cummins
Chairman of the Senate (Faculty): Donald F. Harder

Office of the Dean of Student Affairs
Associate Dean: Donald F. Harder
Coordinator of Aztec Center: Carl F. Emerich
Coordinator of the Resource and Information Center: James B. Carruthers
Coordinator of Disabled Student Services: Louise Prante
Director of Veterans Affairs: Edward R. Mendez
General-Counselor of International Students: Winnie Yee
Dean of Admissions and Records: E. June Warren
Director of Admissions: Joseph A. Gasperetti
Admissions Officer: Robert E. Downen
Registrar: Elaine C. Volz
Director of Program Development: Dorothy Vails-Weber
Director of Counseling: Melinda Sprague
General Coordinator: Samuel J. Gange
Interim Director of Career Planning and Placement: George Reidenbach
Director of Educational Opportunity Programs: Augustine S. Chavez
Director of Financial Aid: Thomas R. Pearson
Scholarship Advisor: Cynthia Alexander
Director of Health Services: David L. Bearman, M.D.
Director of Housing: Michael B. Hector
Assistant Director of Housing: Hugh Terrell
Colleges, Schools and Departments

COLLEGE OF ARTS AND LETTERS
Associate Dean
Assistant Dean for Student Affairs

COLLEGE OF PROFESSIONAL STUDIES
Associate Dean
Assistant Dean for Student Affairs

Office of the Director of Business Affairs
Assistant Director of Business Affairs, Operations
Purchasing and Contract Officer
Business Services Officer
Assistant Director, Business Affairs, Personnel
Budget and Planning Officer
Controller

Drama
Athletics

Family Studies and Consumer Sciences

Auxiliary Organizations
San Diego State University Foundation
Manager

The Associated Students of San Diego State University
Business Manager

Business Manager

Assistant Director of Business Affairs, Personnel
Assistant Director of Business Affairs, Operations

20

21

Health Science and Safety
Industrial Studies
Journalism
Mexican-American Studies
Music
Nursing

Physical Education
Public Administration and Urban Studies
Recreation
Speech Communication
Speech Pathology and Audiology

Astronomy

Biology

Botany

Chemistry

Geological Sciences

Mathematics

Microbiology

Physical Science

Physics

Psychology

Zoology

OFFICE OF THE DEAN OF THE GRADUATE DIVISION AND RESEARCH
Associate Dean

SCHOOL OF BUSINESS ADMINISTRATION
Associate Dean
Assistant Dean for Graduate Studies
Assistant Dean for Student Affairs

SCHOOL OF EDUCATION
Associate Dean

SCHOOL OF ENGINEERING
Associate Dean

SCHOOL OF SOCIAL WORK

William C. Burgess
Harold L. Marsiers
Frank S. Holowach
J. Dayton Smith

Richard W. Wells
Diane D. Kitchen

Fred Sanders

Harriet G. Kopp
K. Charles Lamson

Albert W. Johnson, Dean

John D. Schopp

Saul L. Drohnies

Celia Marshik

Bart Nelson

William E. Hazen

David L. Rayle

Earl P. Wadsworth, Jr.

Gary L. Peterson

Peter W. Shaw

Henry A. Walch, Jr.

Charles M. Schull, Jr.

Jacques D. Tempin

Robert Penn

Roger E. Carpenter

Irving Alan Sparks

Robert P. Hungate, Dean

Maurice L. Crawford

Penny L. Wright

Robert A. Meier

Peter A. Vandenberg

William Spaulding

Richard D. Darley

Tomas A. Arciniega, Dean

Robert R. Nardelli

Sam S. Blanc

Guy Trujillo

Ramon Ross

John D. Chanley

Howard B. Holt

Patrick J. Harrison

James M. Katz

Clarence E. Fishburn

Robert D. Smith, Jr.

Doris A. Meek

Francis A. Ballantine

Mark P. Gapps, Dean

Frederick T. Quitt

Andrew J. Crooker

Robert D. Migchie

Frank E. Stratton

Shu-Yun Chan

Richard A. Fitz

Joseph B. Kelley, Acting Dean

20

21
General Information

General Information
Imperial Valley Campus
Special Programs and Services
Financial Aid
Student Services
San Diego State University

San Diego State University traces its antecedents to a two-year Normal School which was established 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 (1910-1935), 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 1933, the Legislature dropped the word “Teachers” from its name. The expansion of degree programs into areas other than teacher preparation Walter R. Hepner 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 College grew phenomenally, the personnel by the director of President Hepner and his successor, Malcolm A. Love (1952-1971), until it is now one of the three most populous campuses 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 for 1971-1972, and Brage Golding, President of Wright State University in Ohio, became the School'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 "Normal School" and "Teachers' College" primary emphasis. After a spirited campaign by the Alumni Association, legislation was passed in 1973 which changed the institution's title to that overwhelmingly preferred by the community: San Diego State University.

In recent years a number of new buildings have been added to accommodate the 30,000 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 have been budgeted for construction this year.

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 to be 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

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 three thousand readers 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 965,000 microfiche and microopaque cards, 38,000 reels of microfilm, 12,000 college catalogs, 61,000 items of curriculum materials, 25,000 scientific reports, 290,000 archival papers, and 1600 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 are business, medieval history, American history, Civil War history, 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 are the history of science, paleontology, biology, archeology, 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 non-governmental 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.

Among the conveniences provided the users of the library are location information desks in the main lobby, the periodical reading room, and the microforms and listening center; numerous inexpensive photocopiers, including one for microfiche and inexpensive multiple-copy duplicating machine; several typing rooms with coin-operated electric and manual typewriters; coin-operated electronic calculators; listening equipment for cassettes, open-reel tape, and phonographic records; and most of the required textbooks at the limited-loan (reserve) room of the library.

Accreditation

San Diego State University is a member of the following educational associations:

- American Assembly of Collegiate Schools of Business
- American Association of Colleges for Teacher Education
- American Association of Schools and Departments of Journalism
- American Home Economics Association
- Association for University Business and Economic Research
- Council of Graduate Schools in the United States
- Council on Social Work Education
- Engineers' Council for Professional Development
- National Association of Schools of Music
- National League for Nursing
- Western Association of Graduate Schools
- Western Association of Schools and Colleges

San Diego State University's accreditation is validated through membership in the above associations. San Diego State University is also accredited by the National Council for Accreditation of Teacher Education, the California Commission for Teacher Preparation and Licensing, and by the California State Board of Education. The journalism-news-editorial sequence is accredited by the American Council on Education. The clinical services area of speech pathology and audiology is accredited by the American Speech and Hearing Association. It is on the approved list of the American Chemical Society and is approved by the Veterans Administration.

The university has four professional schools: business administration, education, engineering and social work. See the descriptions of their programs in the section, Professional Curricula.
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 66 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 Music
- Doctor of Philosophy in Chemistry
- Doctor of Philosophy in Education
- Doctor of Philosophy in Social Work
- Doctor of Philosophy in Urban Studies

San Diego State University offers the following types of curricula:
- Undergraduate Curricula
- Graduate Curricula
- Preprofessional and nondegree curricula

Types of Curricula Offered
San Diego State University offers the following types of curriculum:
- Undergraduate Curricula: Undergraduate curricula provide the following opportunities for study:
  1. Liberal arts and sciences: Curriculum in the academic major fields, leading to the Bachelor of Arts degree in liberal arts and sciences.
  2. Applied arts and sciences: Curriculum in major fields leading to the Bachelor of Science 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 Education offers the Bachelor of Science degree in engineering with specialization available 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. Preprofessional and nondegree curricula: Programs are offered in prenursing, prelegal, and premedical, leading to transfer to professional schools. Nondegree programs are offered in Public Administration and Urban Studies.
- Graduate Curricula: The Graduate Division offers curricula leading to the Master of Arts degree in a wide variety of fields, the Master of Science degree, the Master of Business Administration, the Master of Public Administration, the Master of Social Work, and joint-doctoral programs in chemistry, ecology, and genetics.

Imperial Valley Campus

Faculty
- Professors: Rodney (Dean), Baldwin (Associate Dean), Smith (Coordinator of Extended Services)
- Associate Professors: Ayala, Franklin, Harmon, Polich, J., Spencer, Wilson
- Lecturers: Banks, Brautigam, Buckner, Escalera, Farrar, Ferguson, Gutiérrez, Hubbard, Huerta, Jones, Kane, E., Kane, T., King, I., Maranon, Nagel, Najarian, H., Najarian, M., Rosenblum, Stuckey, Swanson, Van Werther, Williams, Wong

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 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 function 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 highway, bus, trains and airplane 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 dune buggying, water skiing in the nearby Salton Sea, Gulf of California, Colorado River and golfing and hiking the year around.

The full-time faculty and many of the part-time faculty are regular members of the San Diego State University instructional staff. 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 educators and practitioners 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 restricted to upper division and graduate students. The campus offers eleven majors leading to the bachelor's degree and also 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
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 at Calexico. In addition, the Graduate Record Examination, National Teachers Examination and other tests are scheduled in accordance with the nationally advertised test dates.

All tests required for the programs offered at Imperial Valley 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.

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

The campus consists of a cluster of eight large buildings set in an eight-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 in two faculty office buildings located north and south of the administration offices.

The student union is entirely separate from the office and classroom areas. The large six-room building is furnished with television, sofas, lounge chairs, small tables, and easily movable chairs for readily arranged conferences, meetings and study areas. Snack 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, paperback books on a variety of topics and supplies are available to students.

The Imperial Valley Campus library is housed in the south wing of the central building complex. It contains over 17,000 volumes, 200 periodical titles and a complete collection of California State approved texts. 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 for 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, comprised of five faculty members, three students, and two administrators, was established in 1973 by the Faculty Senate. Its mission is to stimulate and facilitate the development of innovative, integrative, and interdisciplinary learning experiences for students at all levels. The Council is authorized to grant temporary approval for new courses that fulfill this mission.

The Council also sponsors a Teaching Improvement Program for faculty and awards Presidential Mini-Grants to faculty members for the development of courses and programs which hold promise of improving teaching and learning. Many of these projects involve faculty and students working in close collaboration.

A variety of special projects related to its mission are supported by the Teaching and Learning Council including an Instructional Development Program, symposia and workshops, faculty lecture series, evaluative studies, and in-service opportunities for faculty professional development.

Summer Sessions and External Academic Programs

San Diego State University conducts three summer sessions which offer credit applicable to graduation and residence requirements. During the three-week Term I four semester units of credit may be earned; during the six-week Term II up to seven units of academic credit may be earned; during the three-week Term III four units of credit may be earned. Tuition for the summer sessions is based on the cost per semester unit. Write to the Dean of Continuing Education for information concerning the course offerings, special workshops, and requirements for admission. The Summer Sessions Bulletin is available in mid-March and is mailed free of charge upon request.

In order to serve the education needs of the community more adequately, a variety of special projects relating to the development of courses and programs is being arranged. The Faculty Senate is committed to the development of courses and programs which fulfill the needs of the community as expressed through the Office of Extended Education. The Council also sponsors a Teaching Improvement Program for faculty and awards Presidential Mini-Grants to faculty members for the development of courses and programs which hold promise of improving teaching and learning. Many of these projects involve faculty and students working in close collaboration.

For limitations on extension credit, see the section of this catalog on Credit for Extension Courses. Refer to the index for page number. For information on organization of classes, current offerings, and eligibility for registration, communicate with the Office of Continuing Education.

International Programs

An overseas study program 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. Cooperative universities abroad include the University of Provence, France; the Universities of Heidelberg and Tubingen, Germany; the University of Florence, Italy; the Universities of Granada and Madrid, Spain; the University of Uppsala, Sweden; Lincoln College and Massey University, New Zealand; and Waseda University, Japan. In the United Kingdom, cooperating universities, which may vary from year to year, include Aberdeen, Daventry, Bangor, Heriot-Watt, Leicester, 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 status during their academic year of participation, who have a 2.5 overall grade point average (3.0 for the United Kingdom program), who show ability to adapt to a new environment, and who, in the cases of France, Germany, 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 predeparture orientation, insurance, 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 vacation travel costs while abroad are also paid by the student. The Office of International Programs collects and administers funds for these items which the program must arrange or can negotiate more effectively, such as campus home fees, orientation costs, insurance, round-trip 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.

Applications for the 1976-77 academic year must be submitted before February 13, 1976 (except for New Zealand and United Kingdom applicants who must submit applications by May 16, 1975 and January 9, 1976, respectively). Applicants are notified of acceptance by April 1, 1976 (New Zealand by June 1, 1975). Detailed information may be obtained from the Office of Continuing Education or by writing to The California State University and Colleges International Programs, S670 Wilshire Boulevard, Los Angeles, California 90036.

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 students in the community without the requirement of matriculating in the University. At present two such degree programs are offered through the California State University: one is a Bachelor of Science degree in Criminal Justice Administration, offered through the School of Public Administration and Urban Studies. For further information, write Ms. June Kaiser, Department of Criminal Justice. The second one is "Integrated Master of Arts and Superintendent's Administrator Credential Program," reserved for the present for a selected group of potential school administrators in the state of Texas. Further information can be obtained from the Department of Educational Administration in the School of Education.

In addition, a master's degree program in public administration is available through the statewide University Consortium. For information, contact the Director of Public Administration and Urban Studies.

Conferences and Professional Programs

In order to provide a wide range of continuing education experiences for organizations, agencies, institutions, and professionals in many fields, the Office of Continuing Education will assist groups interested in planning and presenting educational programs on campus or in other convenient locations throughout San Diego or Imperial County.

Special Sessions and Travel Study Programs

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. In addition, the Office of Continuing Education sponsors a wide range of travel study experiences in foreign countries throughout the world. Travel/study programs earn academic credit and are available during the summer sessions and the wintersession.
Research Bureaus

Asian Studies
Alvin D. Cox, Director

The Center for Asian Studies is an interdisciplinary organization in the College of Arts and Letters. Drawing upon faculty members from many areas, it performs such services as (1) securing and administering grants and other support for research and development in Asian Studies; (2) coordinating and publicizing the activities of faculty engaged in Asian-centered Studies; (3) developing and administering the Asian Studies program and relevant curricula at the undergraduate and graduate levels; (4) responding to campus and community requests for information and services; (5) fostering campus and community interest in Asian Studies. The center's reading room and study facility, located in LE-469, contains Asian periodicals, books, pamphlets, dictionaries and maps.

Business and Economic Research
John B. McFall, 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 objectives 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 by the faculty and students; (3) seek cooperative arrangements with outside individuals and organizations for conducting specific research projects; (4) analyze and interpret local and regional data; (5) publish the results of its investigations and aid faculty in publication of their research.

Graduate students and faculty are encouraged to make use of bureau facilities. 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; fiscal matters are coordinated through the San Diego State University Foundation. The Center is designed to draw together faculty members from relevant disciplines such as anthropology, economics, education, psychology, social welfare, social work, sociology, and the University Counseling Center for such purposes as (1) securing and administering grants and other support for research and development in counselor education and guidance and (2) conducting programs or rendering services related to counselor education and guidance through contractual agreements with public or private agencies or organizations.

Economics Research Center
Robert Barkley, Director

The Economics Research Center collects research materials, publishes occasional monographs, and encourages research of special interest to faculty and students in economics and related areas. The Center's facilities are currently utilized by the Economics Department for faculty seminars and economics conferences, by the Center for Research in Economic Development, by the Institute of Labor Economics, and by the local chapter of Omicron Delta Epsilon.

Bureau of Educational Research and Evaluation
Lester A. Becklund, 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
Ernest 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. The laboratory room is open several hours each day for study and research by students and instructors in courses dealing with any aspect of European studies. The center also assists in the development of the university library's holdings in the European area and has created a special collection of library materials on European integration and unification which is being steadily and systematically expanded.

Institute of Labor Economics
Clinton Jencks, Director

The Institute of Labor Economics is a facility of the Department of Economics to encourage research by students and faculty in all phases of labor problems, collective bargaining, labor legislation and social security. The center is designed to complement the curricular and degree programs in the Department of Economics and to be of service to related disciplines. Publications are exchanged with 75 similar institutes at other universities. Research materials and facilities to assist research and publications in the area of labor economics are maintained in the Social Science Research Laboratory, located on the lower level of the West Commons. A technical assistant is available to help you from 8:30 A.M. - 4:30 P.M., Monday through Friday.

Latin American Studies
Philip F. Flemion, 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 programs and the Mexican Summer School programs. The Center sponsors a Latin American Lecture Series which provides the campus 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 of instructional, research, and public services aspects of the program, and to provide special supporting services to those involved. The Center is operated as a special unit of the College of Sciences. Supporting services sponsored by the Center include advising students concerning marine studies, assistance to faculty and students in research and publication, a boat operations program, and the University Diving Safety Program. The Center is administered by a director, associate directors, and an executive committee consisting of faculty members elected from participating departments in the College of Sciences, the College of Arts and Letters, the College of Professional Studies, the School of Business Administration, and the School of Engineering.

Paleobiology Council
Jason A. Lillegren, Chairman

An interdisciplinary research and teaching agency to explore the fossil record. Composed of faculty members from the departments of Geology, Physical Science and Zoology at San Diego State University in addition to professional paleontologists in other research and educational institutions in the greater San Diego area.
Public and Urban Affairs
W. Richard Bigger, Director

The Institute of Public and Urban Affairs is a part of Public Administration and Urban Studies, San Diego State University, organized to conduct research into community and governmental problems. It also sponsors institutes and conferences related to community and governmental activities. It is staffed by members of the faculty of San Diego State University. Closely associated with the institute is the Public Administration Center with a specialized and growing collection of research materials. The institute engages in cooperative or joint research efforts with the various departments of instruction, institutes, and research centers of the university.

Public Economics
George Bablot, Director

The Center for Public Economics is a facility of the Department of Economics to encourage research by students and faculty in all phases of nonmarket economic decision making, encompassing the following areas: (1) the functioning of federal, state, and local fiscal systems including the provision for and financing of public goods at each level; (2) the economic factors involved in environmental changes, in particular, their bearing on urban and local economic problems; (3) the economic dimensions of social decision making. The center is designed to complement the curricular and degree programs in the Department of Economics and to be of service to related disciplines. It maintains research materials and facilities to assist research and publications in the area of public economics. Fiscal matters are coordinated through the San Diego State University Foundation. Financial support in the form of student assistance is available for faculty research projects on subjects in public economics. The Center funds a number of student scholarships which are administered through the Scholarship Office. The Center for Public Economics is located in OL-307.

Regional Environmental Studies
Charles F. Cooper, Director

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

Research in Economic Development
Murugappa Madhavan, Director

The Center for Research in Economic Development is part of the Economics Department's effort to encourage research by students as part of their education and by the faculty. The Center, temporarily located in the Economics Research Center in SS-340, provides material and aid for research in problems related to less developed countries.

Social Research
Douglas Kirby, Director

The Social Research Center is a faculty of the Department of Sociology. It provides physical equipment and space for the planning and processing of sociological research in such areas of investigation as urban growth and development, demographic factors, and social surveys of social organization. The center is administered for the Department of Sociology by a director whose duties include consulting assistance in the designing 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 Economic Research Center, the Social Research Center, the Political Science Laboratory and the Map Library of the Geography sciences.

San Diego State University Foundation

Research in all academic areas is carried on at San Diego State University, consistent with the Master Plan for Higher Education. San Diego State University also engages in projects such as federal educational contracts and institutes (both on campus and in foreign countries) other projects related to community and national goals. Research and educational project activities at San Diego State University are administered through the San Diego State University Foundation. Under general policies set down by the administration, San Diego State University has successfully maintained the balance, as envisioned in the Master Plan, between teaching and research, each complementing the other.

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) engineering, 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.

San Diego State University Press

The San Diego State Press operates under supervision of a publications board composed of representatives from each school and college. Financial assistance is coordinated through the San Diego State Foundation. The Press publishes manuscripts and other works of both scholarly and practical educational value. In addition, it publishes syllabi prepared for specific classes.
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 simply and participate moderately in campus life on a modest budget. The following table is based on systemwide figures provided for the purpose of determining financial aid.

Estimated Expenses for the Academic Year

<table>
<thead>
<tr>
<th>Living on Campus</th>
<th>Commuting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials, service, student activity</td>
<td>$187</td>
</tr>
<tr>
<td>student union fee, facilities fee</td>
<td>180</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>450</td>
</tr>
<tr>
<td>Personal</td>
<td>1350</td>
</tr>
<tr>
<td>Room, board, health</td>
<td>-</td>
</tr>
<tr>
<td>Board, incidentals</td>
<td>-</td>
</tr>
<tr>
<td>Transportation, parking</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>$2167</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 $4250 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 1975-76” 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 Parents’ Confidential Statement (PCS) or a Student’s Financial Statement (SFS). The PCS form may be obtained from your school 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, too, should be filled as soon as possible in accordance with instructions therein.

Alan Pattee Scholarship

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.

Scholarships

The San Diego State University Scholarship Committee will administer approximately 350 scholarships for the 1975-76 academic year. The awards average about $300. These scholarships are donated by a number of individuals and organizations with the stipulation that the Scholarship Committee select the recipients. Selections are based on recommendations received from the various department chairmen and financial need. Information is available from the Scholarship Office, room 5G, Campus Laboratory School building. A similar program is anticipated for the 1976-77 academic year.

During the 1974-75 academic year about 650 students received scholarships, fellowships, grants or stipends totaling approximately $700,000 through the various departments, 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.

For the 1974-75 academic year about 400 students received scholarships from donors who made their own selections and asked the university to administer the funds. These scholarships are generally from clubs and organizations who wish to help students who are studying in areas of interest to the club or organization. Students should ask if a club or organization of which they or members of their family are members sponsor scholarships.

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

- Allstate Foundation
- Altrusa Women’s Club
- American Business Women
- American Institute of CPAs
- American Society of Military Comptrollers
- AMOCO Foundation
- Amsden Memorial
- Associated Students
- Aztec Shops
- Barofofsky, Dorothy Memorial
- Beintner, Brenda Memorial
- Biel, Martha S. Memorial
- Brooks, Baylor
- Brown, Dr. Leslie P.
- Burgener, Clair
- California Asn. for Childhood Education
- California Asn. of Teachers of Deaf & Hard of Hearing Children
- California Federation of Women’s Clubs
- California PTA
- California Society CPAs-Women’s Auxiliary
- California Student Association Emblem Clubs & Nevada-Hawaii Clubs
- Cap and Gown - May Finney Marcy
- Center for Public Economics (Anonymous)
- Chi Omega
- Cleater, Robert K.
- Cooper, Sam Dora Memorial
- Copley Newspapers
- Country Friends
- Creamer, Harry
- Crossley, Sharon A.
- Delta Delta Delta
- Delta Kappa Gamma
- Dorado Foundation
- Downtown Optimist Club
- Driver, Robert F. Co.
- Earnest, Dr. Sue
- East San Diego Club
- Ellis, George William Memorial
- Escobedo, R. J.
- Everson, Beatrice
- Fleet Foundation
- Fletcher Foundation
- Fontaine, Amelie Memorial
- Foster, Frank Memorial
- Fox Foundation
- Geldreich, Dr. Edward
- General Dynamics
- Gore, Bonnie Jean
- Hshininger, Dr. Edward Memorial-Sigma Nu
- Heartland Human Relations
- Hess, Robert C. Memorial
- Hodgetts, Mabel Memorial
- IEW, Women’s Auxiliary
- Institute on Government
- Intelcom Rad Tech
- Jones, Sybil Eliza
- KFMB
- Kappa Beta Nu
- KGTU
- Lake Park Women’s Club
- LaSalle, William Memorial
- Linkletter, Art
- Lodge, Catherine Yuhana
- Mogilner, Samuel E. Family Foundation
- Morrison, Alvin Memorial
- Mortar Board Alumni of San Diego
- National Council of Jewish Women
Part-time jobs.

university Counseling Center

Located at 5630 Hardy Avenue, the 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 educational experience at San Diego State. Among these are academic advising for students without a declared major, individual and group counseling on educational, vocational, personal or social matters.

In addition, counselors are involved in the teaching of courses, consultation with student groups, faculty and administration, and the supervision and training of graduate students in Counselor Education and Psychology.

The Center also offers experiences especially designed for various groups, for individuals having a difficult time with their studies, and for considering areas of special interest or concern.

Open 8:00 a.m. to 4:30 p.m. Monday through Friday, the Center provides immediate walk-in services or you may call for an appointment at 286-5218. Counseling is confidential and places a premium on understanding.

Counseling also is available on a walk-in basis at several locations around the campus as part of the decentralized focus on services. Among these locations are the residence halls and the Malcolm Love Library, Student Health Center, and selected academic departments.

Health Services

As a part of the program of student personnel 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 for consultation, treatment of minor physical conditions, emergencies and counsel as to follow-up procedures. Full-time nurses and technologists are also on duty when school is in regular session. Special clinics are conducted in Family Planning, Ear, Nose and Throat, Dermatology, Gynecology and Orthopedics.

As a part of the admissions procedure a health history is required of all students. On the reverse side of the health history is a physical examination form to be completed by the private physician. Careful attention is given to students undergoing private remedial treatment, and those for whom a modified study load or a limited participation in physical education activities seems advisable. The physical examination should be completed as a condition to matriculation in accordance with Title 5, California Administrative Code, Paragraph 41200. As a part of the program of student personnel 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 for consultation, treatment of minor physical conditions, emergencies and counsel as to follow-up procedures. Full-time nurses and technologists are also on duty when school is in regular session. Special clinics are conducted in Family Planning, Ear, Nose and Throat, Dermatology, Gynecology and Orthopedics.

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Career Planning and Placement Center

San Diego State University provides a centralized placement service in cooperation with the various departments of the institution. Students are aided in securing part-time, full-time and summer employment and cooperative education programs through this office.

Information concerning occupational trends is also provided. Counselors maintain constant liaison with schools, businesses and industries. These counselors, as well as special counselors to minority students, are available at the Career Planning and Placement Center.

Students should seek out the counselor appropriate to their academic and vocational goals early in their college careers. Credit courses relating to career planning are offered by the Center.

Going to college is regarded as a full-time job. Students are normally expected to spend in class and study a total of three hours a week for each unit of college work. A normal 15-unit load, therefore, represents a 45-hour week. Students should consider this before accepting part-time jobs.
Speech, hearing and language pathology techniques: speech, lipreading, auditory training and
practitioners. These services include vocational counseling and guidance, training and job placement. He may qualify also for financial assistance for educational and medical needs and so meet living expenses for self.

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 facility 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 minimal fee is charged for diagnostic evaluations. This center operates throughout the school year. Referrals may be made through health professionals, agencies, school districts or as self-rereferrals.

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 and language development for the hard of hearing and deaf. Tutoring services are available for hearing impaired students during the school year. The clinic operates through the school year and Summer Session II. The clinic serves those with speech, hearing and language problems at all age levels. Because of limitations of staff, not all who apply can be admitted. A minimal fee is charged for diagnostic evaluation and therapy for outpatients but not for students enrolled at San Diego State University. Referrals may be made through agencies, school districts, health professionals, or as self-refererrals.

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' physiological and psychological 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 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 achievement, speech, hearing, educational and vocational planning, and school adjustment. Referrals are ordinarily made by parents, or individuals, by referring agencies, or individuals. Parents, for example, may make a referral either directly to the Center or through their child's school. In general, preference would be given to the child who might profit best by specialized help and who meets the needs of training college students. There are specific criteria of selection of children for each strand of the total 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 set aside a permanent portion 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, it is a nonprofit, 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, complimented by Scripps Park.
- Aquatics Center: Located on Santa Clara Point, Mission Bay. Classes (noncredited) 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, 5828 Hardy Avenue (just adjacent to campus). 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 5:30 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 $60 per hour based on family income, plus a small snacks and milk fee for those children scheduled during mealtimes and a diaper fee for those children not yet toilet trained.

The program is staffed by four paid employees, volunteers, and parent participants. Parents make a weekly contribution of time as teachers in the program and a monthly contribution to a working parents 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.

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.

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 this 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 administration as a sounding board to collect information or opinions from the alumni regarding programs and policies.

The association publishes a monthly Alumni News and the biannual El Campanario magazine to distribute news and information about the University to its members.

Membership in the association is open to any former student who was in regular attendance for at least a semester, as well as to past and present members of the faculty. Alumni House, at 5721 Lindo Paseo, is attractively furnished and has a garden area for outdoor events. Alumni and campus related groups are invited to use its facilities.

University Housing Services

Residence Halls

Accommodations for 1,669 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 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 staff in each of the halls recommend standards for halls behavior in the residence halls. Each of the residence halls is staffed by personnel reporting to the Director of Housing.

Currently, the cost for room, including linen, is approximately $300 to $400 per semester. Three food service plans (19-, 14- and 10-meal plans) are offered. The Commons provides meals for an additional charge ranging from approximately $230 to $310 per semester, on an optional 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 date order as the demand exceeds the number of spaces on this campus. To apply for housing, the student should send a self-addressed, stamped envelope to the University Housing Service. When the application is completed, it should be accompanied with a $20 deposit, mailed to the Cashier's Office in the Campus Laboratory School. If you request a space is confirmed, you will receive a notification to contact the office as soon as possible. Those who want to take advantage of the advanced placement must contact this office at least two months prior to the beginning of the semester.

Veterans

The campus Veterans Affairs Office assists veterans and dependents with all matters pertaining to Veterans Administration educational benefits. Services include counseling, academic and personal, tutorial assistance, job placement, and referral to appropriate campus departments. Other services are assistance with enrollment and applying for Veterans Administration benefits. All eligible veterans and dependents who wish to receive benefits are urged to contact the office as soon as possible. Those who want to take advantage of the advanced placement must contact this office at least two months prior to the beginning of the semester.

Disabled Students

The Disabled Students Services Office is located in the Campus Laboratory School, room 1108; phone number is 286-6473. DSAs acts as a liaison office for disabled students on campus at San Diego State University. The goal is to provide counseling, academic and personal, and vocational assistance as students need it. A disabled student, as well as a student assisting him, has the right to preregister for classes. He may get on the preregistration list by contacting the Disabled Students Services Office and should also give the name of the student who will be assisting him. DSAs acts as a referral service for attendants, housing, readers, notetakers and students.
If there are problems with class schedules or classes assigned to rooms that are inaccessible, the DSS will help the student make arrangements to have the class rescheduled in an accessible classroom. A transportation service offered through the DSS consists of three specially modified vans to enable students who are unable to drive to get to and from campus and field work. A golf cart is also available for those students who need help in mobility around the campus. Special parking facilities (authorized by the Disabled Students Services and the Health Services) is among services offered. For further information concerning special orientation to campus, special maps, accessible restrooms or information about inaccessible classrooms, please contact the Disabled Students Services, CL-110B; phone number, 286-6473.
Admission and Registration

Admission to the Campus
Requirements for admission to San Diego State University are in accordance with Title 5, Chapter I, Subchapter 1 of the California Administrative Code. A prospective applicant who is unsure of his status under these requirements is encouraged to consult a high school or college counselor or the Admissions Office. Applications may be obtained from the Admissions Office at any of the campuses of The California State University and Colleges or at any California high school or community college.

Undergraduate Application Procedures
Prospective undergraduates, whether applying for part-time or full-time programs of study, in day or evening classes, must file a complete application including all the required forms and fees as described in the application booklet. The $20 nonrefundable application fee should be in the form of a check or money order payable to The California State University and Colleges. Undergraduate applicants may file only at their first choice campus. Alternate choice campuses and majors may be indicated on the application, but an applicant should list all alternate campuses on the first choice campus of The California State University and Colleges that he will attend if his first choice campus cannot accommodate him. Generally, alternate degree majors will be considered at the first choice campus before an application is redirected to an alternate choice campus. Applicants will be considered at alternate choice campuses if their first choice campus cannot accommodate them. Transcripts and other supporting documents should not be submitted until requested by the campus.

Category Quotas and Systemwide Impacted Programs
Application category quotas have been established by some campuses, in some majors, where the number of applicants is expected to exceed campus resources. All applications received in the initial filing period will receive equal consideration for such categories. A small number of programs are impacted throughout the 19-campus system, and applicants to such programs are expected to meet supplementary admission criteria for admission to these programs. These programs are identified and announced each fall. Applicants will receive from the campuses further information about the supplementary admission criteria to be used and how and when applicants can meet them. Applicants to impacted programs must apply during the initial filing period.

Postbaccalaureate Application Procedures
All applicants for any type of postbaccalaureate status (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for 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 status includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. Postbaccalaureate applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the $20 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that a postbaccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each. Applications may be obtained from the Graduate Studies office of any California State University or College campus in addition to the sources noted for undergraduate applicants.

Space Reservations
Applications who apply during the initial filing period and who can be accommodated will receive a space reservation notice. A space reservation notice is not a statement of admission but is a commitment by San Diego State University to admit the student once eligibility has been established. The space reservation directs the applicant to arrange to have appropriate records forwarded promptly to the Office of Admissions. Applicants should not request that any records be forwarded until they have received a space reservation notice.

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

Filing of Records
File Official Transcripts. The applicant must file the following official transcripts with the Admissions Office:
(1) Transcript from high school of graduation or last in attendance (required of the graduate student who holds a bachelor's degree from an accredited institution). Transcript from high school of graduation or last in attendance (not required of transfer students who transferred more than 56 units. Applicants should consult the high school counselor or the San Diego State University Test Office for dates and places where tests are given.

Completion of Required Tests
Admissions Tests
(1) College Aptitude Test. The American College Test (ACT) or the Scholastic Aptitude Test (SAT) is required for matriculation of entering freshmen and transfer students with less than 56 units. Applicants should consult the high school counselor or the San Diego State University Test Office for dates and places where tests are given.

Application Filing Periods

<table>
<thead>
<tr>
<th>Term</th>
<th>Initial Filing Period</th>
<th>Extended Filing Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>the previous February</td>
<td>December until filled</td>
</tr>
<tr>
<td>Fall</td>
<td>the previous November</td>
<td>July until filled</td>
</tr>
<tr>
<td>Winter</td>
<td>the previous June</td>
<td>September until filled</td>
</tr>
<tr>
<td>Spring</td>
<td>the previous August</td>
<td></td>
</tr>
</tbody>
</table>

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

Applications postmarked or received during the initial filing period will be given equal consideration within established enrollment categories and quotas. There is no advantage in filing before the initial filing period. Applications received before the initial filing period may be returned, causing a delay in processing. With the exception of the impacted undergraduate program areas (architecture, natural resources, nursing, and physical therapy), most campuses will be accepting applications well into the extended filing periods until quotas are filled.
High School Students. Students still enrolled in high school will be considered for enrollment in certain special programs if recommended by the principal and if preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given program and does not constitute the right to continued enrollment.

First-Time Freshmen (graduate of secondary schools, etc., in foreign countries). An applicant who is a graduate of a secondary school in a foreign country or who has equivalent preparation in a foreign country, may be admitted as a first-time freshman if his preparation and ability are such that in the judgment of the appropriate campus authority, the probability of his academic success at the campus is equivalent to that of eligible California high school graduates.

First-Time Freshmen (high school nonresidents). An applicant who is over 18 years of age, but who has not graduated from high school will be considered for admission only when preparation in all other ways is such that the campus believes promise of academic success is equivalent to that of eligible California high school graduates.

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 = 3072 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.

<table>
<thead>
<tr>
<th>ACT Score</th>
<th>SAT Score</th>
<th>G.P.A. Score</th>
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<td>2.65</td>
<td>1432</td>
<td>4.00</td>
</tr>
</tbody>
</table>

1. Students earning grade point averages above 3.20 are eligible for admission.
2. Students earning grade point averages below 2.0 are not eligible for admission.

Undergraduate Admission Requirements

First-time freshman eligibility is governed by an eligibility index. The index is computed using the high school grade point average on all course work completed in the last three years of high school, exclusive of physical education and military science; and the ACT composite, or the SAT total score. The full table of grade point averages, with corresponding test scores and the equation by which the index is computed, is reproduced on page 49. Test results of either the CEB, 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 168
Iowa City, Iowa 52240

SAT Address
College Entrance Examination Board
P.O. Box 1025
Berkeley, California 94770

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 applicants using the SAT score is 3072; using the ACT score, 741.

First-Time Freshmen (high school graduates from other states and U.S. possessions). The admissions requirements for nonresident applicants are more restrictive than those for California residents. An applicant who is a nonresident for tuition purposes and is 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 using the SAT score is 3402; using the ACT score, 828.
Undergraduate Transfers (resident and nonresident)

Beginning fall term 1974, transfer eligibility is based on transferable college units attempted, rather than on 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 of 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 to obtain a college education. 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 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.

Postbaccalaureate Standing (Classified)

A student who is eligible for admission to a State University or College in Unclassified or Postbaccalaureate Standing may be admitted to a classified postbaccalaureate standing if he satisfies the following requirements:

1. He has completed a full year at an accredited college or university.

2. He has a grade point of at least 2.5 (on a five-point scale) in the last 60 semester (90 quarter) units attempted.

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 cannot be met by specified additional preparation, including qualifying examinations, may be admitted to an authorized graduate degree curriculum with Conditionally Classified Graduate Standing.

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 obtainable at the University bookstore.
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 the 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 residency determination for nonresident tuition purposes is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes by The California State University and Colleges is found in Education Code, Sections 23763.1, 23754-23754.4, 23758.2 and 23752, and in Title 5 of the California Administrative Code, Article 4 (commencing with Section 41901) 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 indicia of an intention to establish and maintain California residence are: registering to vote and voting in elections in California; satisfying resident California 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, a person under 18 years of age derives legal residence from his parents, or, in the case of an orphan or minor (a permanently separated or divorced parent may make adoption or legal guardianship of a minor child the basis of legal residence) from the parent with whom the minor maintains his residence, or a guardian, so long as the minor’s parents are living.

A minor’s residence is his or her parents’ 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 in the California State University and Colleges. The residence determination dates for the 1975-1976 academic year are September 20, 1975 and January 25, 1976. The student must have met all of the following requirements prior to these dates:

1. Persons under 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 under the age of 19 who have been present in California for more than one year immediately preceding the residence determination date and, entirely self-supporting for that period of time, care and control of an adult, not a parent, for the two years immediately preceding the residence determination date. Such adult must have been a California resident for the most recent year.

4. Dependent children and spouses of persons in active military service stationed in California on the residence determination date. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year. The exception, once attained, is not affected by transfer of the military person directly to a post outside the 50 states and District of Columbia.

5. Military personnel in active service stationed in California on the residence determination date for purposes other than education at state-supported institutions of higher education. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.

6. A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States, provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if both the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the United States, provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the University.

7. Certain exchange students.
8. 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.

9. A person in continuous full-time attendance at an institution who, if had resident classification, would maintain California classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the degree for which he is currently enrolled.

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

The California State University and Colleges
5670 Wilshire Boulevard
Suite 1260
Los Angeles, California 90036

within 120 calendar days of notification of the final decision on campus of his classification. The Office of General Counsel may make a decision on the issue, or it may send the matter back to the institution with instructions for a further review on campus. The student may not appeal an incorrect classification results from false or concealed facts, the student is subject to discipline on campus.

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

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

Grades for Classified Graduate Students

Graduate courses graded on the credit/no credit basis are limited to courses 796, 797, 798, 799 and certain 600- and 700-numbered courses in the School of Education. No 500-numbered courses graded credit/no credit are acceptable on a master's degree program. No undergraduate courses graded credit/no credit may be assigned to the deficiencies and/or foreign language option(s) of a master's degree program. At least 70% of the units used to fulfill the minimum requirements on a master's degree program shall be graded on an A, B, C, D, F basis.

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 nor is an incomplete until one year has elapsed. The minimum GPA for a bachelor's degree is 2.0 (C); in other words, the student must have earned at least twice as many grade points as units attempted.

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 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.

A student who registers for Course 799A, Thesis, but does not complete the thesis by the recommendation of the Thesis Committee Chairman, receive an SP (satisfactory progress) grade. This grade symbol will remain on the student's record until the thesis is completed or up to two calendar years from the end of the semester or term of registration in the course. A student who has been assigned the grade symbol SP for the thesis is required to complete the work agreed upon and evaluated in the prescribed time period due to unforeseen, but fully justified, reasons and that 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.

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. However, the student must have earned at least twice as many grade points as units attempted.

Uncompleted Theses

A student who registers for Course 799A, Thesis, but does not complete the thesis by the end of the semester or summer session in which he registers for it will, upon the recommendation of the Thesis Committee Chairman, receive an SP (satisfactory progress) grade. This grade symbol will remain on the student's record until the thesis is completed or up to two calendar years from the end of the semester or term of registration in the course. A student who has been assigned the grade symbol SP for the thesis is required to complete the work agreed upon in the prescribed time period due to unforeseen, but fully justified, reasons and that 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 student who has been assigned the grade symbol SP for the thesis is required to register for Course 799B (0 units, Cr/NC) in any semester or term (within the two-year period, as outlined above) in which the student expects to use the facilities and resources of the university; also he must be registered in the course when the completed thesis is granted final approval.

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 procedures, 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 this 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 limitation of any rights, powers, or privileges of the President.

Every effort has been made to ensure 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.

Grades

At the end of each semester or summer session in which a student is enrolled, a report of courses taken, showing units and grades earned, is sent to the student. Grades and grade points per unit used in computing grade point averages 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 one year, 0 points; SP (satisfactory progress), not counted in the grade point average; W (withdrawal), not counted in the grade point average.

Undergraduate Student Options on Grading

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

1. Courses graded credit/no credit (Cr/NC), whether taken at this or another institution, may be used to satisfy requirements for the student's major except for those courses identified in the course listing as graded "Cr/NC."

2. No more than 24 units graded credit/no credit may be offered in satisfaction of the total units required in a bachelor's degree program, except that all units accepted as transfer credit from another institution must be counted in the time of the student's admission may be used. If 24 or more units graded credit/no credit are transferred, the student may offer no additional courses graded credit/no credit to satisfy total units required for a bachelor's degree. Exceptions to this rule will be made if a student is required to take a course on a Cr/NC basis only.

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

4. Selection of grades of the basis (A through F or credit/no credit) is made at the time of registration for the course. Change of grading basis may be made by informing the Registrar on or before the last date on which a student may withdraw from a class or change program.

5. A grade of "Credit" is awarded for work equivalent to A, B, C; "No Credit" is awarded for work equivalent to D or F.
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 exclusively in the extension program to meet the professional needs of specific community groups. These courses are not acceptable on advanced degree programs.

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 admission 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

A 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, only the results of the last attempt will be used in computation of grade point average.

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 acceptable master's degree credit 500-numbered courses listed in the Graduate Bulletin as 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 (or the first week of 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 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 Postgraduate Credit

A senior who is within seven units of completing requirements for the bachelor's degree and has been admitted to teacher education may petition the Dean, School of Education, to take a maximum of 12 units of 500-numbered courses for concurrent postgraduate credit with remaining requirements for a bachelor's degree to apply toward the minimum unit postgraduate requirements for a teaching credential. The bachelor's degree must be completed at the end of the semester in which the concurrent postgraduate credit is earned. Extension courses are not acceptable for postgraduate credit.

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 Bulletin.

Extension 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 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 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.

Academic Credit Through Examination

Credit by Examination

Approval to receive 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.

2. Concurrent approval of the chairman of the department concerned and the Dean of the University College is required prior to taking the examination. Forms for approval may be obtained from the Evaluations Office.

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 examination of the Advanced Placement Program of the College Entrance Examination Board. Students who present scores of three or better will be granted six semester units (nine quarter units) of college credit.

High school students who intend to participate in this program should make the necessary arrangements with their high schools and should indicate at the time they take the Advanced Placement Examinations that their test scores be sent to San Diego State University. To obtain credit and advanced placement, the student should contact the Office of the Dean of the University College.
Students may earn 3-10 semester units of credit toward their bachelor's degree for each Advanced Placement Examination satisfactorily passed while in high school. The chart below indicates the score necessary, the units earned and the course equivalents for each of the examinations offered.

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<tr>
<th>Examination</th>
<th>Score</th>
<th>Units</th>
<th>Credit allowed toward degree</th>
<th>SDSU course equivalents*</th>
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<td>History 105A-105B</td>
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<td>English 100 and 101</td>
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<td>(5)</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. 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 completes one or more extension classes shall be classified as an extension class student. Such students need not be matriculated students as a prerequisite for enrollment in course.

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.
General Regulations / 61

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.

Veterans unofficially withdrawing will have veteran's allowances immediately suspended and will be subject to full payment 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 immediate extended active duty by government action, or to be a reservist called to immediate extended active duty. (Not applicable to other military personnel enrolled in the university.)

Entrance upon extended active military duty must be without 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 upon 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, and retain their priority numbers without change. 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. Deadlines for filing may be obtained at that office. Requests will be reviewed by appropriate officials designated by the Vice President for Academic Affairs. Leaves cannot be renewed 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 leave 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.

Readmission. A student who withdraws from the university must file application for readmission if a full semester elapses between his withdrawal and his return. A $20 application fee for readmission is required if the applicant was not regularly enrolled in either of the two semesters immediately preceding the semester for which the application is submitted, or if the student was enrolled at another institution subsequent to the last attendance at San Diego State University.

Evaluation. An evaluation is a summary of college work completed and of requirements to be completed for a bachelor's degree or credential. To be eligible for an evaluation, a student must have completed at least 56 units of acceptable college work and be qualified for full matriculation. Authorization for more than one evaluation during any one semester or one evaluation in nine weeks of summer session requires special permission.

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

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

Credit and Study List Limits

A unit or credit hour represents 50 minutes of lecture or recitation combined with two hours of preparation per week throughout one semester of 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 Cr, 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 this institution falls below 2.0, or if during any term while he is enrolled he fails to earn at least two times as many progress points as all units attempted.

An undergraduate student shall be removed from academic probation when his cumulative grade point average is 2.0 or higher in all college work attempted or in all work attempted at this university and when he earns at least twice as many progress points as all units attempted in a term.

An undergraduate student on academic probation is subject to academic disqualification:

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

B. As a junior (60-89 semester hours of college work completed) if he fails nine or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.

C. As a senior (90 semester hours of college work completed) if he fails six or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.

D. Regardless of class level or cumulative grade point average, if in any term while he is on probation he fails to earn at least twice as many progress points as units attempted.

Probation will be lifted when he has attained a C average or better on all college work attempted at San Diego State University.

A disqualified student may be reinstated when conditions causing his poor performance have been alleviated. Application for reinstatement should be made at the Admissions Office.

Administrative Academic Probation

An undergraduate or graduate student may be placed on administrative academic probation by action of appropriate campus officials for any of the following reasons:

A. Withdrawal from all or a substantial portion of a program of studies in two successive terms or in any three terms.

B. Failed failure to progress toward the stated degree or objective or other program objective (when such failure appears to be due to circumstances outside the control of the student).

C. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (example: failure to take placement tests, failure to complete a required practicum).

Administrative Academic Disqualification

A student who has been placed on administrative academic probation may be disqualified from further attendance if:

A. The conditions for removal of administrative academic probation are not met within the period specified.
General Regulations

Graduate Students

The regulations governing probation and disqualification of graduate students are determined by the Board of Trustees of The California State University and Colleges and are stated in Section 41300 of the California Administrative Code as follows:

"Probation and disqualification of graduate students are subject to criteria established by each campus; provided, that criteria of probation and disqualification may not be less than those established for undergraduate students.

A student disqualified for scholarship deficiency may not enroll in any regular session of the university without permission from the appropriate university authority, and may be denied admission to the summer session."

A. Standards for Placing Graduate Students on Scholastic Probation

1. A graduate student will be placed on scholastic probation at the end of the semester if his grade point average on all work attempted at San Diego State University, subsequent to his admission to the university as an unclassified graduate student, falls below 2.5.

2. A graduate student who is on probation during a given semester will be continued on probation at the end of that semester if (a) his overall graduate grade point average, including the semester in question, remains below 2.5 and (b) his grade point average on work taken during the semester is 3.0 or above.

B. Standards for Removing Graduate Students from Scholastic Probation

A graduate student who is on probation during a given semester will be removed from scholastic probation at the end of any semester in which his overall graduate grade point average is 2.5 or higher.

C. Standards for Scholastic Disqualification of Graduate Students

A graduate student may be disqualified from the University for scholastic reasons at the end of any semester during which he is on probation if (a) his overall graduate grade point average, including the semester in question, is below 2.5 and (b) his grade point average for work taken during that semester is 3.0.

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 a campus.

(c) Misrepresentation of oneself or of an organization to be an agent of a campus.

(d) Obstruction or disruption, on or off campus property, of the campus educational process, administrative process or other campus function.

(e) Physical abuse 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.

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 required of the student or 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

Candidates for a bachelor's degree from San Diego State University must satisfy the following requirements:

I. Unit Requirements

A. Total unit requirement. The minimum number of units necessary for a bachelor's degree is as follows:
   1. For the Bachelor of Arts degree in Applied Arts and Sciences
   2. For the Bachelor of Arts degree in Liberal Arts and Sciences
   3. For the Bachelor of Science degree (except engineering)
   4. For the Bachelor of Science degree in Engineering
   5. For the Bachelor of Music degree
   6. For the Bachelor of Vocational Education degree

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

The maximum number of units from community college courses, 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 minimum 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. Units in one department.

1. Bachelor of Arts degree in Liberal Arts and Sciences. The maximum number of units in any one department, lower and upper division combined, which can be applied toward the Bachelor of Arts degree in Liberal Arts and Sciences is 48, except in journalism. Students majoring in journalism may not accumulate more than 36 units of credit in journalism courses.

2. Bachelor of Music degree. The maximum number of units in music courses, upper and lower division combined, acceptable toward the Bachelor of Music degree is 70.

3. Bachelor of Science degree in Business Administration. The maximum number of units in business administration and economics courses necessary for a Bachelor of Science degree in any of the seven business majors is 52 (40 percent of 128 units). In addition, the minimum number of units from departments outside of business administration and economics is likewise 52 (40 percent of 128 units).

4. Other. The maximum number of units per department for other degrees is left to the discretion of the student, except the Bachelor of Arts degree in Applied Arts and Sciences with a major in Radio-Television in which no more than 48 units in telecommunications and film may be counted toward the total units required for graduation.

II. Grade Point Average Requirements

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

A. An average based on all courses completed at SDSU.

B. An average based on all courses completed at SDSU AND at other universities, liberal arts colleges, and community colleges.

C. An average based on all upper division courses completed in the major.

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

III. Competency Requirements

Two competency requirements, one in mathematics and the other in writing, must be satisfied for graduation.

A. Mathematics. The mathematics competency requirement can be satisfied in any of three ways: (1) by a score at the fiftieth percentile or higher on the mathematics section of either the Scholastic Aptitude Test or the American College Test; (2) by a passing score on the Mathematics Competency Test or the Mathematics Competency Retest administered by the SDSU Test Office; and (3) by passing a course in the Department of Mathematics numbered 103, 118 or above.

B. Writing. All undergraduate students are required to demonstrate competency in written English prior to graduation. A test of writing competency is administered on campus several times during the academic year. New students, both freshmen and transfer, are expected to take the test during their first semester on campus. Those who score below the minimum passing level are required to enroll in Study Skills 101, a 3-unit course designed to assist students in achieving competency in English composition. Grading in the course should begin no later than the first year of attendance at the University, and shall continue until competency is achieved. Dates and times for the composition test will be announced by the Test Office.

IV. Foreign Language Requirement (Liberal Arts and Sciences, A.B. degree only)

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

A. Successfully completing three college semesters of one foreign language;
B. Successfully completing four high school years of one foreign language;
C. Successfully completing a challenge examination in one foreign language.

Any combination of the preceding is also acceptable. For example, a student may combine two years of high school study, one semester of college study, and a challenge examination for one semester's work, all in the same language.

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.

V. Physical Activities Requirement

A. Physical Activities. A minimum of two units of physical education activity courses, or equivalent monitored activities (including intercollegiate athletics), or a combination of courses and monitored activities are required for graduation. High school units in one activity course or monitored activity in any one semester may be counted toward this requirement. An activity course taken in the summer session may be counted in lieu of one taken during the fall or spring semester. Any combination of activity courses and monitored activity may be used.
VII. American Institutions Requirement

The American institutions requirement can be satisfied in any of four ways:

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

B. Courses: By passing any pair of courses from the following list.
   - Afro-American Studies 170A, 170B
   - History 115A, 115B
   - History 310A, 310B
   - History 523A, 523B
   - History 547A, 547B
   - Mexican-American Studies 120A and 120B
   - Mexican-American Studies 141A and 141B
   - Political Science 110 and 210
   - 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

VIII. General Education Requirements

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

1. American History, Institutions and Ideals:

2. United States Constitution:
   - Afro-American Studies 170A; History 110A, 115A, 532A, 545A, 545B, 547A; Mexican-American Studies 120A, 141A; Political Science 120, 320, 547A and 547B.

3. California State and Local Government:
   - Afro-American Studies 170B; History 110B, 115B, 532B, 541B, 547B; Mexican-American Studies 120B, 141B; Political Science 120, 320, 521, 522.

D. Transfer credit: By providing evidence on a transcript or other official document from an accredited California university, liberal arts college, or community college that the requirement has been satisfied by the standards of that institution.

Important Note to Students: The General Education requirements have been substantially changed for the 1975-76 academic year. Students should read the following section carefully.

Changes in the Program. In past years, all students have fulfilled a State-mandated general education requirement of 40 units, either through course work at San Diego State University or at other institutions. However, students pursuing a Bachelor of Arts degree in Liberal (not Applied) Arts and Sciences were required to satisfy a number of "breadth requirements" in addition to the general education requirements.

Beginning in the fall semester, 1975, those additional "breadth requirements" are abolished, and all students will have a single set of general education requirements to fulfill, regardless of their major or the degree they are pursuing.

Students Affected by the Change. Students who entered the University prior to September 1975 may continue to adhere to the catalog in effect at the time they entered the University or to the catalog in effect upon declaring or changing their major. Students may, however, elect to change to the catalog in effect in the year in which they graduate, adhering to all requirements in that catalog.

Under no circumstances may a student elect a combination of requirements from catalogs issued in different academic years. Therefore, students who enter the University in the 1975-76 academic year, or who declare or change their majors during that year, will be subject to the requirements in the 1975-76 catalog. Students graduating in 1975-76 (including summer, 1976) may elect to adopt the requirements in that catalog upon applying for graduation.

Transfer Students. Transfer students who are certified by their previous (regionally accredited) institutions to have completed 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.

Course Work Excluded from General Education. The general education program has certain educational objectives not characteristic of other types of course offerings in the curriculum. Hence, certain types of courses are not acceptable for general education credit.

Types of courses that do not count for general education credit include:

A. Course work in a major or minor;
B. Courses in the Study Skills Center;
C. Course work in excess of 12 units in one department.
The General Education Program

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.

The program consists of a minimum of 40 semester units, distributed as indicated below. Completion of the program is required of all undergraduate students, regardless of their major.

I. BASIC SUBJECTS

The inclusion of "Basic Subjects" in a general education program serves to establish the principal 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 competencies which should be achieved by students during the first semester or year of college, if not before. Students who can demonstrate competency in one or more of these areas without formal course work may use the units released to explore other subjects in the general education program.

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.

II. 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 varieties 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 one of the following departments:
      Biology (except 215)
      Botany
      Microbiology
      Zoology
   b. At least three units in one of the following departments:
      Chemistry
      Geography (limited to 101 and 103)
      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 one of the following areas:
   a. Anthropology
   b. Economics (except 142)
   c. Geography (except 101 and 103)
   d. Historical Analysis (limited to 220 or 230)
   e. Mexican-American Studies (limited to 115 or 200)
   f. Political Science (except 440)
   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 English or a foreign language)
   b. Music
   c. History, Classics
   d. Philosophy (excluding logic), Religious Studies

III. THE HUMAN EXPERIENCE

Course Work in the Human Experience. Courses for this new section of the general education program have not yet been developed. For 1975-76, students may satisfy this section by the following:

Nine units of elective courses, including:
   a. At least one course from among the general education subjects listed in Sections I and II above.
   b. 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 units 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—breadth requirements, compatible with the requirements listed below. If approved, the proposed program will replace the standard provisions. A student with such an approved program may, at his option, elect to revert to the standard program in effect at the time of his graduation; any student who changes his major shall revert to the standard education-programs and seek approval of a new proposal.

A. Natural Sciences, minimum of two courses;
B. Social Sciences, minimum of two courses;
C. Humanities, minimum of two courses;
D. Basic Subjects, minimum of two courses;
   for a total of 32 units.
E. Electives, maximum of eight units, to provide a total of 40 units.
F. Additional requirement, five upper division units excluding courses in the area of the student's major and 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.
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 with the Evaluations Office, Administration Building, not later than the end of the third week of classes in the fall if he wants to graduate in mid-year, and not later than the end of the eleventh week of classes in the fall if he wants to graduate in May or at the end of summer session. The Class Schedule each semester specifies the exact date. An application fee of $6.00, which is nonrefundable and nontransferable, is required. Failure to apply on or before the specified date will exclude the student from consideration for honors or distinction.

Election of Regulations for Graduation

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

Graduation With Honors and Distinction

Graduation with honors is granted to those students in each graduating class who have achieved high grade point averages by the beginning of the fall semester for mid-year graduates and by the end of the fall semester for May and summer session graduates. Excellence is recognized at three levels: highest honors (3.75 and above), high honors (3.50-3.74) and honors (3.25-3.49).

The grade point average is computed on work done at this institution, except that if the grade point average for work at other collegiate institutions is lower, those grades are included in the computation.

To be considered for computations relevant to honors or distinction, grades for removal of Incompletes and all other grade changes must be received in the Registrar's Office no later than the end of the fifth week of the semester in which the student plans to graduate and the student must file an application for graduation prior to the published deadline. After the degree is granted no changes can be made in the undergraduate record.

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 once a year at the end of the spring semester for students who were graduated at mid-year, those graduating at the end of the spring semester, and students who expect to complete requirements for graduation in the summer session. The President of the University, by the authority of the Trustees and on recommendation of the faculty, awards the degrees.

Second Bachelor's Degree

A second bachelor's degree may be earned if the student has an excess of 24 units beyond the minimum requirements for the first bachelor's degree, makes a 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.
### Summary of Curricula Offered

#### Arts and Sciences Curricula

<table>
<thead>
<tr>
<th>Major</th>
<th>Applied Arts and Sciences</th>
<th>Liberal Arts and Sciences</th>
<th>School of Business Administration</th>
<th>School of Engineering</th>
<th>School of Education</th>
<th>Graduate Curricula</th>
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<tr>
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#### Professional Curricula

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### Teaching Credentials

- Multiple subjects teaching credential
- Single subject teaching credential
- Restricted credential
- Community College Instructor Credential (occupational)
- Community College Instructor Credential (academic)

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### Interdisciplinary Programs
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. David H. Johns, Department of Political Science, 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 469; Geography 335, 389; Political Science 564, 565; and Religious Studies 340.

Child Development Major

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

The major in Child Development is offered by Family Studies and Consumer Sciences.

Preparation for the major. Anthropology 101, Biology 100, Family Studies and Consumer Sciences 204 and 270; Family Studies and Consumer Sciences 115 or Social Welfare 130; Psychology 101, 260; Sociology 101 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 340; and 18 units selected with the approval of the adviser, at least 12 and not more than 15 units of which must be in an area in which the student wishes to concentrate.

Jewish Studies Minor

The minor in Jewish Studies is offered by the College of Arts and Letters. Dr. Harry Ruja, Department of Philosophy, 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 wish 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 130 and 131, or Hebrew 101 and 102; and nine units selected from Comparative Literature 505 (English 505), 525, 526, 577 (Kafka); Philosophy 336, 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 elects 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.

Preparation for the major. A minimum of a rear course in each of the three disciplines selected in the major must be completed in the lower division as foundation for upper division courses, or whatever the participating departments require.

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.

Major. A minimum of 36 upper division units selected from three disciplines, with no fewer than nine units from any one discipline. If two of the three fields selected are from majors offered only in liberal arts and sciences, the major is governed by the regulations required by that program. If two of the three fields are selected from those not exclusively in the liberal arts and sciences program (majors which satisfy requirements for the single subject teaching credential only do not apply), the major is governed by the regulations in applied arts and sciences.

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 (no 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) 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 literature; (5) classical and oriental literature; (6) German and Russian; (7) history; (8) Spanish; (9) Portuguese; (10) 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 creative writing; 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 B above.

Group B: Fifteen units of approved course work to include: six units of mathematics*; three or more units of a 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.

Major. A minimum of 30 upper division units to include: 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 four groups.

The Liberal Studies Major Option 2 is recommended for students who plan to enter elementary education. It meets all requirements for the multiple subjects/ diversified major. Students planning to enter elementary education must consult and secure program approval from an adviser. The student 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 or one of the physical education activity units for General Education I.

***Mathematics 210A-210B or 2120 is required for students who plan to enter elementary 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 10 is required for students who plan to enter elementary education.
78 / Interdisciplinary Programs

Middle East Studies Minor
The minor in Middle East studies is offered by the College of Arts and Letters. Dr. David H. Johns, Department of Political Science, 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 335; 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 336, 337, Political Science 558, 559; six units in Russian selected from 301A-301B, 311A-311B, 545, 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 faculty-student Council, 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 preprofessional programs in medicine, dentistry and law. In addition, it offers special coursework in the General College series and sponsors the Liberal Studies major.

The furtherance of innovative and nontraditional education 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 1975-76 Fall Semester is June 30, 1975.

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 him to establish eligibility.

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.

The University College / 81
Graduate Division
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 a Graduate Council under the chairmanship of the Dean of the Graduate Division, who also serves as the administrative officer of the Graduate Division.

Under the provisions of Section 41001 of the Administrative Code (see the section of this catalog on Admissions), the Graduate Council, through 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

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 admissions application. 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 a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that a postbaccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each. Applications may be obtained from the Admissions 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-numbered courses, but are ineligible to enroll in 600-numbered courses except with the permission of the instructor and concurrence of the Dean of the Graduate Division. 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 Aptitude Test. Students holding an advanced degree from an institution which is a member of the Council of Graduate Schools are exempted from this requirement; students applying to the School of Business Administration will take the Graduate Record Examination for Graduate Study in Business.

(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 Bulletin 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-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 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.
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 200A, 200B, 231, 250 or 251, 310A-310B and 431 or 410A-410B; Mathematics 150, 151; Physics 124A and 124B (with calculus basis), 125A and 125B or 195A, 195B, 195C.

In addition to the courses listed, the students must obtain specific course recommendations for predental students within the options of biology, chemistry or zoology. These can be obtained by writing the Office of the Assistant Dean of Student Affairs, College of Sciences, prior to registration at San Diego State University and preferably prior to completion of high school. The students are also expected to obtain information regarding the entrance requirements of the specific dental school he or she wishes to attend.

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.

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 prelegal student, either of which may be selected, in consultation with the adviser, to fit best 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 requirements and examinations for admission to schools of law. The following list should receive prime consideration by all prelegal students in the selection of courses, though it is to be thought of as flexible in accordance with student needs. Business Administration 322; Economics 370, 401, 490; History 521A-521B, 545A-545B; Political Science 501A-501B, 546, 547A. Additional: Economics 380, History 536 and 547A-547B, Political Science 348 and 547A.

In addition to the courses taken in the fields of concentration, upper division electives in English, philosophy, psychology, sociology, and speech communication are recommended. A mastery of English is essential. 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 200A, 200B, 231, 250 or 251, 310A-310B and 431 or 410A-410B; Mathematics 150, 151; Physics 124A and 124B (with calculus basis), 125A and 125B or 195A, 195B, 195C.

In addition to the courses listed, the student should obtain specific course recommendations for premedical students within the options of biology, chemistry or zoology. These can be obtained by writing the Office of the Assistant Dean of Student Affairs, College of Sciences, prior to registration at San Diego State University and preferably prior to completion of high school. The students are also expected to obtain information regarding the entrance requirements of the specific medical school he or she wishes to attend.

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.

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 coursework 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 colleges or schools at San Diego State University.
Professional Curricula

School of Business Administration
School of Education
School of Engineering
School of Social Work
School of Business Administration

Departmental Organization
Five departments comprise the School of Business Administration: Accounting, Finance, Management, Marketing, and Information Systems. Each department offers its separate majors and minors.

Accreditation
The School is a member of the American Assembly of Collegiate Schools of Business.

Bureau of Business and Economic Research
The Bureau of Business and Economic Research is an organized research activity serving the needs of the School. Its chief purpose is to facilitate research by faculty and students in the areas of economics and business. For further information, see "Research Bureaus" in the catalog section, Introducing San Diego State University.

Courses in Business Administration
Courses in business administration are listed and described in the section of this catalog on Announcement of Courses.

The Master's Degree
The School of Business Administration offers the Master of Business Administration degree (a 30-60 unit program) and the Master of Science degree in business administration. Both degrees offer concentrations in ten areas. For further information, refer to the Graduate Bulletin and to the section of this catalog on the Graduate Division.

Departmental Majors and Minors
The following listed majors and minors are offered by the five departments in the School of Business Administration.

DEPARTMENT OF ACCOUNTING
Major in Accounting with the B.S. degree
Minor in Accounting

DEPARTMENT OF FINANCE
Majors with the B.S. degree in the following:
- Finance
- Insurance
- Real Estate

Minors in the following:
- Finance
- Insurance

DEPARTMENT OF MARKETING
Major in Marketing with the B.S. degree
Minor in Marketing

DEPARTMENT OF INFORMATION SYSTEMS
Major in Information Systems with the B.S. degree
Minor in Information Systems

DEPARTMENT OF MANAGEMENT
Major in Management with the B.S. degree
Minors in the following:
- Business Management
- Employee Relations
- Production and Operations Management

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.

Majors

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; Mathematics 142 or Mathematics 120 or 150, (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. 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 or 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, Management, and Marketing.

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, 180, 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, 180, 210A-210B or 212, 280 and 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, 322, 350, 360, 370, 380, 385, 480, 481 and 482; 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, 180, 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, 342, 346, 348, 350, 370, 441, 443; and 12 units selected from Business Administration 315 or 410, 325 or 327, 341 or 456, 344, 352, 385, 425, 445, 473 or 479, and Economics 490. Fifty-two units (12 of which must be upper division) must be taken outside of 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 either obtain a broad background in the nature of organizations, their structure, behavior and environment; or concentrate in one of the areas of Human Resources Administration, Production and Operations Management, or Management Science. Students must complete all three of the following requirements.

(1) Professional Curriculum Within the Major Field

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 290; Economics 120 and 121; Mathematics 119 and 120 or 150. (25-27 units.)

Major. Business Administration 301 or 302, 315, 323, 350, 351, 352, 360, 370, 456, 459 (31 units.)

(2) Areas of Concentration Within the Major Field

Select 18 units from one of the areas below. No units taken in the major above may be included in these 18 units.

(a) Business Management: (1) Decision techniques—six units from Business Administration 301 or 302, 325, 380, 412, 460, 462, 463, 470, 480, 481, or Economics 447, and (2) Organization behavior—six units from Business Administration 452, 453, 461, 473, Psychology 320, 321, 323, 405, or Sociology 422, 432 or 548, 520, and (3) Organizational Environment—six units from Business Administration 329, 340, 341, 371, 373, 376, 423, 425, 458, 479; Economics 370, 380; History 553A-553B; Sociology 401, 404.

(b) Human Resources Administration: (1) Six units of Business Administration 452 and 453, and (2) six units from Business Administration 344, 461; Economics 380, 482 or 483; and (3) six units from Psychology 326, 326, 405, 452, 487; Sociology 520, 521.

(c) Production and Operations Management: (1) Six units of Business Administration 460 and either 461 or 462, and (2) six units from Business Administration 325, 374, 375, 412, 452, 474; Economics 380, and (3) six units from Business Administration 301 or 302, 380, 463, 480, 481; Economics 447, 476, 471.

(d) Management Science: (1) Six units of Business Administration 301 or 302, plus 463, and (2) six units from Business Administration 380, 412, 460, 462, 470, 480, 481, and (3) six units from Economics 447, 541; Mathematics 552, 553, 541A-541B, 550.

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

A minimum of 16 units of pattern requirements must be taken. Courses taken to satisfy this requirement must be upper division courses except as listed below. All such courses are in addition to and may not be used to satisfy any requirements in general education nor may they be used to satisfy requirements in (1) and (2) above.

This requirement may be satisfied in any one of the following three ways:

(1) By taking a minimum of eight units in the areas of Life, Physical and Social Sciences as indicated in (a) below and a minimum of eight units in the areas of Humanities and Fine Arts as indicated in (b).

(a) Life science, physical science, and social science. A minimum of eight units, to be selected with the approval of the departmental adviser, from one department in the College of Sciences or the departments of Geography, Political Science, and Sociology. All upper division courses in the specified departments are suitable as well as the following lower division courses: Chemistry 200A-200B, 250 or 251; Mathematics 151 and 152; Physics 195A-195B-195C.

(b) Humanities and fine arts. A minimum of eight units, to be selected with the approval of the departmental adviser, from one department in the College of Arts and Letters (except Economics, Geography, Political Science, and Sociology) or the College of Professional Studies (except Aerospace Studies, Industrial Studies and Physical Education). All upper division courses and the following lower division courses are suitable: Art 157, 258, 259, 264, 265, Speech Communication 104 and 160. All courses in a foreign language are acceptable, but at least eight units must be taken in one language.

(2) A minor in a department outside of Business Administration and Economics consisting of at least 16 units (no more than six units of which may be lower division units).

(3) A pattern of courses outside Business Administration and Economics (at least 16 units) from a number of departments which fits the requirements of the individual student and is approved in advance by the student's adviser and filed with the Evaluations Office. (No more than six units may be in lower division courses.)

Marketing 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; Mathematics 120 or 150, and either 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. 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. 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, 231, 290; Economics 120 and 121; Economics 142 or Mathematics 119, and Mathematics 120 or 150. (31-33 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 36 upper division units to include Business Administration 301 or 302, 323, 331, 335, 350, 370, 433, 437; Public Administration and Urban Studies 320; and 12 to 13 units selected from Business Administration 315, 333, 342, 372, 410, 431, 435, 441; Economics 422, 490, 559; Geography 354, 559. Fifty-two units must be taken outside of Business Administration and Economics.

Minors
These minors are for students whose majors are outside of business administration. They all require Business Administration 210A-210B or 212.

Accounting: Fifteen units required of which 11 must be upper division, including Business Administration 310.

Business Management: Nineteen units required, including Economics 120 and 121, Business Administration 210A-210B or 212, 350, and six units from Business Administration 321 or 352, 360, 366.

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: Nineteen units required, including Business Administration 180, 280, 380, 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, 473, 474, 475, 476, and 479; 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 460, 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 this section of the catalog on 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.

School of Education

Accreditation
The School is a member of the American Association of Colleges for Teacher Education. It is fully accredited by the California Commission for Teacher Preparation and Licensing, the California State Board of Education and the National Council for the Accreditation of Teacher Education.

Bureau of Educational Research and Evaluation
The Bureau of Educational Research and Evaluation is an organized service and research activity of the California Commission for Teacher Education. Its chief purpose is to facilitate research by faculty and students in the area of education and to provide services to schools and colleges in the field of education. For further information, see "Research Bureaus" in the catalog section, Special Programs and Services.

Courses in Education
Courses in education are described in the section of this catalog on Courses and Curricula.

Degrees

Master's Degree
The Master of Arts degree in education with concentrations in 11 areas and a Master of Science degree in counseling and a Master of Science degree in rehabilitation counseling are offered. For further information, refer to the Graduate Bulletin and to the section of this catalog on the Graduate Division.

Bachelor's Degree
Graduation Requirements. Requirements for graduation with a bachelor's degree are outlined in the section of this catalog on Graduation Requirements.

Bachelor of Vocational Education Degree. The Bachelor of Vocational Education degree is currently offered to vocational teachers of California who are recommended by the Board of Examiners for Vocational Education.

New Credentials
Assembly Bill 122 (Ryan Bill) has changed the credential structure in the State of California. Students who did complete credential requirements by September 14, 1974, 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. The multiple subjects credential (elementary), and the single subject credential (secondary), together with the specialist credentials listed below, have been approved by the Commission for Teacher Preparation and Licensing.

Specialist Credentials*
Early Childhood
Bilingual/Cross-Cultural
Special Education
Reading Specialist
Services Credential*
Administrative Services

The following credentials are in a stage of development:

Library Services
Pupil Personnel Services

These credentials may be obtained only after completion of the single subject or multiple subjects credential.
Credits

Anyone wishing to teach or provide other types of professional service in the public schools of California must hold a valid teaching/service credential. Assembly Bill 122 has markedly changed the requirements for credentials in the state. Some of these new credential programs have been defined (see below). Others are in a state of development, see page 99. Students are advised to consult with the department in which they are interested to obtain advising that is current.

List of Credentials

1. Single Subject Credential: Teach any self-contained classroom kindergarten through twelfth grade.
2. Single Subject Credential: Teach single subject area in grades K through 12.

Fisher Credentials

- A standard teaching credential with specialization in:
  - Elementary Teaching: Teach kindergarten and grades one through nine.
  - Secondary Teaching: Teach major and minor in grades seven through twelve.

- The following applies to both (a) and (b):
  - By completing specialized preparation, additional authorization may be earned in:(1) Specialization in Teaching of Exceptional Children, authorizing teaching in the area of mentally retarded in kindergarten and grades one through fourteen; and (2) Specialization in Librarianship, authorizing service as librarian and teaching of librarianship in kindergarten and grades one through fourteen. (3) Specialization in Area of Deaf and Severely Handicapped, authorizing teaching in the area of deaf and severely handicapped in kindergarten and grades one through fourteen.

- The Community College Instructor Credential: Teach in grades thirteen and fourteen, any course in an occupational or subject matter area which appears on the credential document.

- A standard designated subjects credential: Teach trade or technical courses at grade levels specified on the credential.

- A standard designated services credential: Perform pupil personnel services or health services as specified on the credential.

- A standard supervision credential: Serve as supervisor, consultant, or other intermediate administrative position including school principal.

- A standard administration credential: Serve as a district superintendent or in intermediate level administrative positions, including those services authorized by the standard supervision credential.

- A restricted credential: Serve as a speech and hearing specialist at all grade levels.

Admission to Teacher Education

Application for Admission

Students who plan to enroll in a credential program must make application for admission to that program through the appropriate department. The Multiple Subjects Credential is to be completed through the Elementary Education Department; the Single Subject Credential through the Secondary Education Department.

Only students who are able to complete these Fisher credentials by September 14, 1974, or who meet special requirements of the Commission on Teacher Preparation and Licensure, are eligible for Fisher Credentials.

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 applicant) 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 2.20 GPA (overall) is required for admission to the program. Once admitted, a 2.20 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.
10. Prerequisite courses. The following lower division 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 101, "Principles of Healthful Living" 2 units
   - Music 102, "Music Fundamentals for Non-Music Majors" 3 units
   - Physical Education 153, "Physical Education of Children" 2 units
11. Major. The new credential legislation (Ryan Act) permits a student to use any major listed in the college catalog. The student must, however, demonstrate by examination his knowledge of the content of the subjects commonly taught in the elementary school. Currently, the NTE Common Exam (National Teacher's Examination, Common Knowledge Section only) is being administered. Information regarding this test may be obtained through the California State Board of Education. The newly defined Liberal Studies Major (diversified major) may be selected for the teaching credential. Completion of this major exempts the teacher candidate from the NTE examination. (See the Liberal Studies Information Packet available in Room ED-100.)

Single Subject Credential (Secondary Education)

2. Academic achievement: Acceptable GPA, 2.5 overall and 2.75 in the major.
3. Satisfactory written recommendations from:
   - (a) Instructors in Secondary Education 400.
   - (b) Student's major department verifying the student's competency in the major and suitability for the profession.
   - (c) Participating teacher or director of school or community facility in field experience.
4. Successful completion of the English Proficiency Examination or its equivalent, and demonstrated ability to communicate effectively verbally and in writing.
5. Successful clearance of Health Examination.
6. Formal application to the program by the student in the Secondary Education 400 class.
7. Absence of criminal conviction which would preclude credentialing.
8. Health Science and Safety 321, Adolescent Health, is required.

**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 already completed elsewhere.

**Evaluation of Credits**

After an interval of five years, courses in education are reevaluated and subject to reduction in credit, in light of new requirements and changes in educational procedures. All courses taken either at this university or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

**Multiple Subjects Teaching Credential**

**Multiple Subjects (Elementary) — Clear**

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. A classroom 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 coursework 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.
6. Three years of successful teaching.

Multiple Subjects (Elementary) — Preliminary

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 fulfilled 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 Interdisciplinary 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 multiple subject groups of knowledge identified above (not 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 andoriental, 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 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 of music, three units selected from drama, humanities, philosophy or religious studies; and additional units of course work selected from areas under Group D.

**Interdisciplinary Programs**

- **Multiple Subjects Teaching Credential.** Information regarding this option is presented in the Interdisciplinary Programs section of this catalog.
Major. 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 Bill. Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education. See advising brochure available in Elementary Education Office for acceptable courses for students planning to enter 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).
3. Completion of an approved program of professional education. The required courses are 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.
4. Passage of subject matter examination(s) or waiver thereof.
5. Knowledge of methods of teaching reading. (Except for majors in music, art and physical 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 and/or three years of successful teaching experience. 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

Art
Business
English
Foreign Languages
Government
History
Home Economics

Industrial Arts
Life Sciences
Mathematics
Music
Physical Education
Physical Sciences
Social Sciences

The Community College Instructor Credential

Specific Requirements

1. An associate degree in which the student can establish four years of occupational experience in a subject matter area plus 12 units in designated courses on the community college.
2. A baccalaureate degree in which the student can establish two years of occupational experience and a major or minor in a subject matter area related to this occupational experience plus six units in designated courses on the community college.
3. A master's degree in a subject matter area designated in Title 5, Section 5, #52210 (subjects commonly taught at a community college).
School of Engineering

Accreditation
The undergraduate curriculum in Engineering, with options in aerospace, civil, electrical and mechanical engineering, is accredited by the Engineers' Council for Professional Development.

Courses in Engineering
The School of Engineering offers courses at the undergraduate and graduate levels. These individual courses are described in the section of this catalog on Announcement of Courses. At the undergraduate level, the School prescribes certain patterns of its courses, combined with those of other academic divisions of the University, as a program of 132 semester units leading to the degree, Bachelor of Science in Engineering. This program is described in detail below. At the graduate level, the School offers the Master of Science degree in specific major fields of engineering.

Graduate Program
The Master of Science degree is offered in aerospace, civil, electrical and mechanical engineering. For further information, refer to the Graduate Bulletin and to the section in this catalog on the Graduate Division.

Undergraduate Program
The objective of the engineering program at San Diego State University is to provide the intellectual and physical environment best calculated to encourage students to develop their capacities toward a successful career in the profession of engineering. The graduate of this program is able to assume personal responsibility for the development and application of engineering knowledge with wisdom and judgment for the benefit of mankind. He is qualified to take the Engineer-in-Training examination as a first step to professional registration, to enter industry at the junior engineer level, or to continue his formal education at the graduate level. Because the engineer's work is predominantly intellectual and varied, and not of a routine mental or physical character, this program places emphasis on the mastery of a strong core of subject matter in the physical sciences, mathematics, and the engineering sciences of broad applicability. Woven throughout the pattern is a continuing study of the socio-humanistic facets of our civilization, because the engineering graduate must expect to find his 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 confines his attention during the first two years of the four-year program to a common pattern of course work in fundamentals. During his junior and senior years he may give outlet to his interest in a broad field of engineering by electing course work in aerospace, civil, electrical or mechanical engineering. Even here, during this upper division work, the student is involved with his fellows in the study of a common core of the engineering sciences; these courses, together with those elected in a specialty field, are taught with an emphasis on universal application and cross-fertilization of thought.

Requirements for the B.S. Degree in Engineering

Graduation Requirements
1. A minimum of 132 semester units for the B.S. degree in engineering.
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 all units attempted.
4. At least 36 upper division units. (However, a typical program usually consists of at least 52 upper division units.)
5. A major in engineering as prescribed by the School.

Major in Engineering
The major consists of 53 upper division units in a prescribed pattern. The program of study for the first two years is the same for all students in the school; thereafter there is differentiation according to the student's selected field of specialization. The requirements are as follows:

Lower Division Requirements

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 200A, General</td>
<td>5</td>
<td>Chem. 201, Chem. for Engrs.</td>
</tr>
<tr>
<td>Math. 150, Single Variable Calc.</td>
<td>5</td>
<td>Math. 151, Calc. and Linear Alg.</td>
</tr>
<tr>
<td>Engr. 100, Intro. to Engineering</td>
<td>2</td>
<td>Engr. 150 or 151</td>
</tr>
<tr>
<td>Engr. 100, or Phil. 120</td>
<td>3</td>
<td>Engr. 160, Engr. Meas. Anal.</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
<td>Engr. 170, Engr. Prob. Anal.</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
<td>Biol. 100, General Biology</td>
</tr>
<tr>
<td>P.E. Activity</td>
<td>1</td>
<td>P.E. Activity</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

Sophomore Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math. 152, Multivariable Calc.</td>
<td>4</td>
</tr>
<tr>
<td>Engr. 210, Engr. Materials</td>
<td>3</td>
</tr>
<tr>
<td>American Institutions</td>
<td>3</td>
</tr>
<tr>
<td>Free Elective</td>
<td>2</td>
</tr>
</tbody>
</table>

NOTE: Community college students who anticipate transferring to this institution in engineering are urged to remain at the community college to complete the lower division requirements in chemistry, engineering, mathematics and physics insofar as these courses are offered by the community college in question.

Upper Division Requirements
The program of study for the last two years embraces the fundamental engineering sciences and their application to specific problems in selected fields of engineering practice, together with an opportunity for the student to approach an intellectual maturity in social, economic, ethic and aesthetic thought.

The student must complete (1) the upper division requirements for all students; (2) the requirements of the selected field of specialization in accordance with an approved master plan filed during the first semester of the junior year; and (3) the remaining units of general education.

Recommended patterns in the four fields of specialization are shown below.

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.

*Chemistry 208, General, may be taken as equivalent to Chemistry 201.
**Physics 195A plus Physics 195B may be taken as equivalent to Physics 195E. See course description before enrolling.
Aerospace Engineering

Each student with the option in Aerospace Engineering includes in his program a sequence of fundamental courses. In addition the student has the opportunity to satisfy his particular areas of interest by selecting a pattern of study indicated in the sequence below as "electives within major". This pattern may include typical aerospace engineering topics, such as aerospace vehicle design, performance, structural analysis, aerodynamics, and propulsion, some elective opportunity being also available in other disciplines at this university. 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 during the first semester of his junior year.

Fall Semester Units Spring Semester Units
Engr. 302, Fluid Mechanics 3 Engr. 381, High Speed Aerodynamics 3
Core Laboratory 1 Engr. 382, Exp. Aerodynamics 2
Engr. 380, Low Speed Aerodynamics 3 Engr. 501, Methods of Analysis 3
Engr. 301, Methods of Analysis 3 General Education 3
General Education 3 17 17

Senior Year

Fall Semester Units Spring Semester Units
Engr. 386B, Aer. Structural Analysis II 3 Engr. 493, Aircraft Stability and Control 3
Core Elective 3 *Electives within major 7
*Electives within major 5 General Education 3
General Education 3 16 15

Civil Engineering

All students in the Civil Engineering option pursue a common program of civil 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 "electives within major" and may be selected from available courses in foundation, structural, environmental, transportation, or water resources engineering, computer programming, advanced surveying, engineering economics, 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 during the first semester of his junior year.

Fall Semester Units
Engr. 301, Methods of Analysis 3 **Engr. 305, Thermodynamics 3
Engr. 306, Introduction to Solid Mechanics 3
Engr. 306L, Solid Mechanics Lab. 1
General Education 6

Junior Year

Spring Semester Units
Engr. 302, Fluid Mechanics 3
Engr. 302L, Fluid Mech. Lab. 1
**Engr. 303, Electronics, Instrumentation, and Elect. Energy Conv. 3
**Engr.303L, Fluid Mech. Lab. 1
Engr. 310, Struct. Anal. 1 4
Engr. 318, Surveying 3
Geol. 153, Gen. Geol. for Engrs. 1

*Approved as part of the student's master plan.
**Or restricted elective.

Electrical Engineering

All students with the option 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, through the proper selection of electives, has the opportunity to develop proficiency in his area of special interest. This pattern of study is indicated in the sequence below as "electives within major" and may be selected from available courses in communications, control systems, microwave circuits, digital systems, power systems, and solid state electronics. 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 during the first semester of his junior year.

Fall Semester Units
Engr. 301, Methods of Analysis 3
Engr. 350, Elect. Energy Conv. 3
Engr. 350L, Elect. Energy Conv. Lab. 1
Engr. 351, Network Analysis 3
Engr. 352, Funds. Engr. Electr. 3
Engr. 352L, Engr. Electronics Lab. 1
General Education 3

Senior Year

Units
Engr. 414, Water Res. Engnr. 2
Engr. 416, Soil Mechanics 3 *Electives within major 11
Engr. 420, Transportation Engnr. 3 *Electives within major 6
General Education 13 17

*Approved as part of the student's master plan.
**Or restricted elective.

Electives within major must be approved as part of the student's master plan. A partial list of courses from which electives may be chosen follows:

Engr. 401, Intermediate Engineering Problem Analysis 3
Engr. 401L, Principles of Engineering Economy 3
Engr. 411, Civil Engineering Structural Design 3
Engr. 415, Water Resources Engineering 2
Engr. 417, Foundation Engineering 3
Engr. 421, Highway Engineering 3
Engr. 496, Advanced Engineering Topics—See Dept. List 3
Engr. 499, Special Study 3
Engr. 510, Structural Analysis II 3
Engr. 514, Sanitary Engineering 3
Engr. 518, Advanced Surveying and Photogrammetry 3
Engr. 521, Highway Materials 3

Junior Year

Units
Engr. 351, Network Analysis 3
Engr. 353, Elect. and Mag. Fields Conv. 3
Engr. 354, Elect. and Mag. Fields Conv. 3
*Engr. 354, Elect. and Mag. Fields Conv. 3
*Engr. 370, Log. Des. and Swi. Circ. or
Engr. 467 & 467L, Contr. Comp. and Lab. 3-4
Engr. 361, Adv. Network Anal. 3
Engr. 362, Analysis & Des. of Elect. Circuits 3
Engr. 386L, Elect. Circ. Lab. 1
**Core Elective 3
General Education 3

*Engineering 354 and 370 are required courses.
**One unit of advanced laboratory in the option is required.
***Core electives include: 302, 304 or 305 or 336, 308 and 301. Core laboratory 302L or 304L or 306L.
School of Engineering

Senior Year

Fall Semester
* Engr. 354, Elect. & Mag. Fields and/or
* Engr. 370, Log. Des. & Sw. Circ. and
** Electives within major ........................................... 9-10
*** Core Elective .................................................. 3
General Education .................................................. 3

Spring Semester
** Electives within major ........................................... 8-10
Core Elective .................................................. 1
Core Laboratory .................................................. 1
General Education .................................................. 3

Units
U 15-16
15-17

The following "electives within major" for areas of special interest are available. It is recommended that courses in more than one area be included to achieve a broad program.

Communications and Microwaves
6th Sem. 7th Sem. 8th Sem.
354 456, 554, 470, 553, 556, 554L, 555, 556L, 557

Control Systems
467 468L, 568 569

Digital Systems
370 400, 462, 502, 570, 571, 470, 497, 472L, 573

Electronics
354 or 462, 470, 554, 554L, 555, 562, 570

Power Systems
467, 467L 550, 551

Mechanical Engineering

All students in the Mechanical Engineering option pursue a common program of 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 "electives within major" 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 during the first semester of his junior year.

Junior Year

Fall Semester
Engr. 301, Methods of Analysis .................................. 3
Engr. 303, Electronics, Instrum. and Elect. Energy Conv. 3
Engr. 304, Thermodynamics ...................................... 3
Engr. 304L, Thermal Sci. Lab .................................... 1
Engr. 306, Introduction to Solid Mechanics .................. 3
Engr. 330, Materials and Processes ............................. 4

Units
17

Spring Semester
Engr. 302, Fluid Mechanics ....................................... 3
Engr. 302L, Electronics, Instrum. and Elect. Energy Conv. 1
Engr. 436, Engr. Thermo ......................................... 4
Engr. 437, Heat Transfer or Engr. 332, Machine Design 3
Engr. 541, Simulation of Engr. Systems ....................... 3
General Education .................................................. 3

Units
17

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.

Approved as part of student's master plan by the department chairman.

Approved at part of student's master plan by the department chairman.
School of Social Work

Accreditation
The graduate program of the School is accredited by the Commission on Accreditation of the Council on Social Work Education.

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 its equivalent, can be considered for admission to this program. The Chancellor's Office gave its approval for this new 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: to develop 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 relationships and professional standards; to develop the discipline and self-awareness essential to the professional social worker; to attain a level of competence necessary for professional practice; to acquire knowledge in 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 to its graduate curriculum, see the Graduate Bulletin.
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/X-999 are those courses offered exclusively in the extension program to meet the professional needs of specific community groups and are listed in the Extension Bulletin only. These courses are not acceptable on advanced degree programs.

The Unit or Credit Hour
In the listing of courses that follow, figures in parentheses indicate the unit value of the course. One unit 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.

Prerequisites for Graduate Courses
Graduate level (600- and 700-numbered) courses require, as general prerequisites, graduate standing, and competence in the specified field as indicated by a substantial amount of upper division study in the field or in a closely related field. Unless otherwise specified in the course description, graduate level courses are open to classified graduate students with the permission of the instructor and the Dean of the Graduate Division and Research before they may enroll in a graduate level course. Undergraduate students are not permitted to enroll in 600- and 700-numbered courses except under special circumstances (see section “Concurrent Master's Degree Credit”). Unauthorized enrollment of undergraduate students in 600- and 700-numbered courses may be cancelled or, if the course is completed before graduate standing is attained, only undergraduate credit will be earned for the course.

Semester in Which Courses Are Offered
In the listing of courses that follows, Roman numeral I indicates a course offered in the fall semester. Roman numeral II indicates a course offered in the spring semester. An “S” indicates a course offered 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.

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 Topics 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 and nine units of 496 applicable on a bachelor's degree of which no more than three units of 299 and three 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.

General College Courses (200 or 400)
General College 200 or 400 provides credit of up to six units (total) applicable to the bachelor's degree by supervised experience in an educationally significant community or university activity. Tutoring, volunteer work for a social service agency, registering or interviewing voters, and serving on an all-university academic committee are examples of such activities. To be eligible to enroll, a student must have completed 12 units of college work and must have a grade point average of C (2.0) or better.

An interested student should, before registration, seek out a chairman of a faculty committee or a faculty adviser for an on-campus organization which sponsors such activities and obtain his written consent to supervise his work and evaluate it for credit purposes.

Units thus earned may not apply to a major or minor.

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: Pralle (Chairman)
Assistant Professors: Conner, 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 Air Force base and the Flying Instruction Program conducted at a local civilian flying school. Summer training is required of all students, other than veterans, prior to enrollment in on-campus courses.

Upon completion of the program and all requirements for a bachelor's degree, cadets are commissioned second lieutenants in the Air Force and serve a minimum of four years' active duty. Graduates who are qualified may 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. (Note: 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 retainers 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 or general education.

UPPER DIVISION COURSES

300A-300B. (121A-121B) National Security Forces in American Society (3-3)
Semester I: Role of professional officer in democratic society; socialization within Armed Services; and requisites for adequate national security forces. Semester II: Political, economic, and social constraints on national defense structure and impact of technological and international developments on defense policy making.
Afro-American Studies
In the College of Arts and Letters

Faculty
Professor: Chambers
Associate Professors: Johns (Chairperson), Meadows
Assistant Professors: Foster, McKinney, Thomas, Weber

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 64 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.)
Major. A minimum of 24 upper division units to include Afro-American Studies 320 (six units) and 12 units selected from one of the following areas and six units from the remaining two areas:
Area I. Afro-American Studies 330, 331, 360, and 445 or 451.
Area II. Afro-American Studies 363, 460, 461, 470 and 480.
Area III. Afro-American Studies 362, 470, 471A and 471B.
Foreign language requirement. Twelve units in a foreign language or demonstration of equivalent knowledge in a reading examination administered by the foreign language department concerned.

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 or general education.

LOWER DIVISION COURSES

100. (M.) Fundamentals of Computation (0) I
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. (14.) Written Communication for the Afro-American (3) I, II
Practice and expository writing based on selections by noted Black personalities in essays, short stories and selections from longer works.

110B. (1B.) Intensive Writing (3) I, II
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
Practice of composition skills utilizing analytical and critical writing and readings, as exemplified by various fictional works of scholarly Black personalities.

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

140. (4.) Communications (3) I, II
Practice in speaking, critical listening, reasoning and organizing. Theory and techniques of communications used to evaluate the effect they have on the lives of Blacks and others.

160. (6.) Intermediate Computation (3) I, II
Introduction to basic mathematical concepts such as properties of real numbers, linear and quadratic equations, polynomials, fractions, exponents and logarithmic functions.

170A-170B. (74-7B.) Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies American institutions 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.

220. (20.) Economics and Management in Urban Development (3) I, II
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
An analysis of institutions in society and their socializing effect upon Afro-Americans, and the cultural parameters that guide behavior.

233. (32.) Afro-American Life Styles (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.

250. (30.) Psychology of Blackness (3) I, II
A study of the psychological motivations and behavioral responses of and toward Afro-Americans.

260. (60.) Afro-American Literature (3) I, II
Modern and contemporary writing of Black American authors. The sociopolitical impact the literature has had upon the Afro-American culture.

286. (86.) Statistics and Research (3) I
Facts, principles, and concepts which are basic to understanding human behavior. An analysis of the psychological motivations and behavioral responses of and toward Afro-Americans.

320. (80.) Black Child Development (3) I, II
Attitudes, needs and problems of the Afro-American child with emphasis on the child's growth and development.

331. (31.) The Black Family (3) I, II
Structure and functions of the Black family in contemporary American society.

360. (140.) Communications and Community Action (3) I, II
Prerequisite: Afro-American Studies 140 (field assignments are a major part of this course).
Application of the basic theories of communication through field projects. Study of the communication problems that exist between sociopolitical groups and the media.

362. (142.) Rhetoric of Black America (3) I
Prerequisite: Three units in Afro-American history or communications.
Rhetoric of Black Americans from David Walker to the present, the role of rhetoric in the history of Black people and an analysis of the Black audience in terms of the Black experience.

363. (143.) The Structure of Black English (3) I, II
The historical development of Black English, the differences, similarities to and differences from standard English dialects: implications for educational policy.
American Studies

**Faculty**
American Studies is administered through the American Studies Committee, composed of faculty members from the departments of Art, Geography, History, Linguistics, Literature, Political Science, and Sociology. Professor Pershing Varian is student advisor.

**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 68 of this catalog.

**Preparation for the major**
Two six-unit sequences selected from American Studies 151 and 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, 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 American Studies 498, 501, 580; History 547A-547B or History 548A-548B (may be used for Group B); and two groups of nine upper division units selected from Group A, Group B, or Group C; to be approved by the adviser.

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

**Group A:** American Literature. English 510, 511, 512, 513, 514, 515, 519, 520.


**Group D:** Electives: Anthropology 545; Art 560; Music 551D; Philosophy 564.

Foreign language requirement. Choice of foreign language should be made in consultation with adviser.

**LOWER DIVISION COURSES**

151. Study of American Culture (3) I, II
Deals specifically with the concept of culture as a matrix of synthesizing various disciplinary methodologies in the study of American culture. Required for American studies majors.

152. 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 COURSES**

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.

501. Study of American Culture (3) I, II
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, social protest, folklore; themes focusing upon fear, 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

Faculty
Emeritus: Rogers
Professors: Anderson, Erell, Goldkind, Leach (Chairman), Shutter, Watson, Whitney
Associate Professors: Greenfield, Himes, Lippold, Pendleton, Stanford
Assistant Professors: Dubbs, Moore, Pillsbury, Rohrl, Sonek, Wagner
Lecturers: Almstedt, 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 64 of this catalog.
A minor is not required with this major.

Preparation for the major. Anthropology 100, 101. (Six units.)
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 or general education.

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 before 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 before 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.

209. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.
### Anthropology / 125

#### UPPER DIVISION COURSES

<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>Anthropology</td>
<td>166</td>
<td>Honors Course (1-3)</td>
</tr>
<tr>
<td>301</td>
<td>Principles of Physical Anthropology</td>
<td>101</td>
<td>(3) I, II</td>
</tr>
<tr>
<td>302</td>
<td>Principles of Archaeology</td>
<td>102</td>
<td>(3) I, II</td>
</tr>
<tr>
<td>303</td>
<td>Principles of Cultural Anthropology</td>
<td>103</td>
<td>(3) I, II</td>
</tr>
<tr>
<td>304</td>
<td>Principles of Anthropological Linguistics</td>
<td>104</td>
<td>(3) I, II</td>
</tr>
<tr>
<td>305</td>
<td>History of Anthropological Theory</td>
<td>105</td>
<td>(3) I, II</td>
</tr>
<tr>
<td>306</td>
<td>World Ethnography</td>
<td>106</td>
<td>(3)</td>
</tr>
<tr>
<td>307</td>
<td>Ethnological Field Methods</td>
<td>107</td>
<td>(3)</td>
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<td>308</td>
<td>Social Anthropology</td>
<td>108</td>
<td>(3)</td>
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<td>309</td>
<td>Backgrounds of Mexican Civilization</td>
<td>109</td>
<td>(3)</td>
</tr>
<tr>
<td>310</td>
<td>Mesoamerican Ethnohistory</td>
<td>110</td>
<td>(3)</td>
</tr>
</tbody>
</table>

#### Additional Courses

- **Anthropology 400A:** Principles of Anthropology (3-3) I, II
- **Anthropology 400B:** Topics in Anthropology (3) I, II
- **Anthropology 500:** Primatology (3)
- **Anthropology 510:** Comparative Paleontology (3)
- **Anthropology 520:** Language in Culture (3)
- **Anthropology 522:** Field Methods in Linguistics (3)
- **Anthropology 525:** Ethnological Field Methods (3)
- **Anthropology 526:** Ethnographic Field Research Project (6)
- **Anthropology 527:** Kinship and Social Organization (3)

### Anthropology 400A: Principles of Anthropology (3-3) I, II

**Anthropology 400A:** Human evolution as a biocultural process from the perspectives of human paleontology 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 or the liberal studies major.
524. (155.) Primitive Religion (3)  
Prerequisite: Anthropology 101 or 400B.  
Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism.  
Primitive mentality and the supernatural.

525. (155.) Peasant Society and Culture (3)  
Prerequisite: Anthropology 101 or 400B.  
The social organization and culture of present-day small agricultural communities with  
emphasis on changes brought about by modernization.

526. (156.) Cultural Change and Processes (3)  
Prerequisite: Anthropology 101 or 400B.  
The individual and the culture pattern: the acquisition of culture, innovation and  
invention, direction of cultural development, diffusion and interpretation of cultures.  
Illustrations from contemporary and historic peoples: Indians of the Southwest, Eskimos,  
aboriginal groups of Australia, Africa and Oceania.

527. (158.) Economic Anthropology (3)  
Prerequisite: Anthropology 101 or 400B.  
Social relationships and cultural values inherent in the economies of primitive and peasant  
societies. Cross-cultural comparisons made of various means by which goods and services are  
avquired and distributed in non-Western, non-market-industrial societies.

528. (159.) Cultural Ecology (3)  
Prerequisite: Anthropology 101 or 400B.  
Examination and comparison of the relationships which exist between the natural  
environment and the sociocultural processes in nonliterate and peasant communities.

529. (164.) Urban Anthropology (3)  
Prerequisite: Anthropology 101 or 400B.  
Cultural roles of urban centers and processes of urbanization in non-Western,  
onindustrial societies of past and present. Urban influence on traditional peasant and  
primitive peoples of Africa, Asia, and Latin America.

530. (167.) Political Anthropology (3)  
Prerequisite: Anthropology 101 or 400B.  
Political processes, institutions, and ideologies in primitive and peasant societies.

531. (179.) Applied Anthropology (3)  
Prerequisite: Anthropology 526.  
Application of anthropological concepts to the solution of practical problems of culture  
change in industry, corporate organization and community development.

532. (165.) Culture and Personality (3)  
Prerequisite: Anthropology 101 or 400B.  
The relationship of individual personality to culture in a variety of cultures. A consideration  
of various theories and studies in the social and personality sciences.

533. (168.) Evaluative Procedures in Culture and Personality (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Anthropology 532.  
Methods of eliciting and evaluating cross-cultural information about patterns of behavior.  
Such field methods as the interview and participant observation will be reviewed and  
evaluated.

540. (148.) Cultures of Europe (3)  
Prerequisite: Anthropology 101 or 400B.  
The study of society and culture in contemporary Europe, utilizing current ethnographic  
materials. The relationship of such studies to European culture growth and to the definition  
of European sociocultural regions.

541. (161.) The California Indian (3)  
Prerequisite: Anthropology 101 or 400B.  
Native California Indian cultures with stress on the Indian groups of Southern California.  
The industries, arts, social organization, folklore and religion will be considered as revealed  
through the study of living peoples and archaeological evidences.
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 of the Andean area.

571. (176.) 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. (172.) Southwestern Prehistory (3)
Prerequisite: Anthropology 100 or 400A.
Archaeological investigations 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.
Stages of prehistoric, bronze, and iron age cultures of Europe, North Africa, and the Middle East. Industries, habitations, 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.
Prerequisites: Anthropology 100 or 400A. The development of civilization in pre-Columbian Mexico and Central America antecedent to the Toltec, Classic Maya, and related cultures.

575. (180.) Preclassic Cultures of Mesoamerica (3)
Prerequisite: Anthropology 100 or 400A.
Stages of pre-Columbian Mexico and Central America civilizations through the Age of Exploration and Conquest. Aztecs, Mixtecs, Zapotecs, Mayan, and related cultures.

576. (181.) 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.) Aegean, Hellenic, Aegae, and Italian Cultures (3)
Prerequisite: Anthropology 100 or 400A.
Archaeological 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 conjunctive approach.

580. (185.) 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.

581. (190.) Archaeology of East Asia (3)
Prerequisite: Anthropology 100 or 400A.
A chronological review of prehistoric cultural development and human ecology in East Asia.

GRADUATE COURSES

600. (200.) Seminar (3)
An intensive study in advanced anthropology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

601. (201.) Seminar in Physical Anthropology (3)
Prerequisites: Anthropology 100 or 400A and 12 upper division units in anthropology. History and theory in physical anthropology stressing the significant literature on such topics as functional anatomy, human paleontology, population genetics, and primatology.

602. (202.) Seminar in Archaeology (3)
Prerequisites: Anthropology 100 or 400A and 12 upper division units in anthropology. History and theory in archaeological data collection, analysis, and interpretation.

603. (203.) Seminar in Ethnology (3)
Prerequisites: Anthropology 101 or 400B and 12 upper division units in anthropology. History and theory in ethnology stressing the significant literature on such topics as cross-cultural comparison, structural-functional analysis and description, personality and culture, and sociocultural change.

604. (204.) Seminar in Linguistics (3)
Prerequisites: Anthropology 304 or 510 and 12 upper division units in anthropology. History and theory of linguistics stressing the significant literature on such topics as cultural cognition, descriptive linguistics, lexicostatistics, and transformational analysis.

620. (220.) Seminar in Regional Anthropology (3)
Prerequisite: Twelve upper division units in anthropology.
Study of a major world region such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. Maximum credit six units applicable on a master's degree.

621. (221.) Seminar in Topical Anthropology (3)
Prerequisite: Twelve upper division units in anthropology.
Study of a major subdiscipline such as Political Anthropology, Economic Anthropology, Social Anthropology, Psychological Anthropology, Cultural Ecology, Applied Anthropology, Race and Variation, or Environmental Archaeology. Maximum credit six units applicable on a master's degree.

630. (222.) Historical Linguistics (3)
Prerequisite: Anthropology 304 or 511.
Principles and techniques of historical linguistics, with concentration on the dynamics of linguistic change, comparative linguistics, and historical reconstruction as applied to non-Indo-European languages.

631. (233.) Social Structure (3)
Prerequisite: Twelve upper division units in anthropology.
A structural and functional approach to the social organization of a wide range of cultures. An examination of theories and generalizations regarding the stability and integration of a wide variety of human societies.

632. (255.) Culture and Society in the Nahua Area (3)
Prerequisites: Anthropology 100 or 101 and 12 upper division units in anthropology.
A course designed to permit concentrated studies of the area and those related to it, based on archaeological, aboriginal records, colonial accounts, and modern studies; and to permit various approaches to such studies.

634. (257.) Classical Nahua (3)
Prerequisites: Anthropology 100 or 101 and 12 upper division units in anthropology including Anthropology 361 or 575 or 576; reading knowledge of Spanish recommended.
Nahua language study and analysis for translation of 16th-17th century texts, use of ancient and modern grammatical works and vocabularies, reading of manuscripts; relationship of the language to appropriate aspects of Nahua culture.

635. (258.) Ethnoscience (3)
Prerequisite: Twelve upper division units in anthropology.
Analysis and comparison of native categories, classifications, and bodies of systematic knowledge as demonstrated in preliterate and literate societies.

797. (297.) Research (3) Cr/NC
Prerequisite: Advancement to candidacy.
Independent investigation in the general field of the thesis.
798. (298.) Special Study  (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study directed toward the preparation of a paper on a specific problem. Maximum credit six units.

799A. (299.) Thesis  (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. (300.) Thesis Extension  (0) Cr/NC
Prerequisite: Prior registration in Thesis, 799A, with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

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 offered.

LOWER DIVISION COURSES
101. (I.) Elementary  (4) I
Four lectures and one hour of laboratory. Pronunciation, oral and written drills, essentials of grammar, and introduction to basic texts.

202. (2.) Elementary  (4) II
Four lectures and one hour of laboratory.
Prerequisite: Arabic 101.
Continuation of Arabic 101.

299. (99,) Experimental Topics  (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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
303. (103.) Readings in Literary Arabic  (4) I
Prerequisite: Arabic 202.
Application of principles of grammar and readings on advanced level in literary Arabic.

304. (104.) Readings in Literary Arabic  (4) II
Prerequisite: Arabic 303.
Continuation of Arabic 303.

496. Experimental Topics  (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.
Art

In the College of Professional Studies

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, Ruocco
Professors: Baker, Baxter, Berg, Bigelow, Covington, Dirks, Fisch, Higgins, Hopkins, Lingren (Chairman), Longenecker, Rogers, Swigget, Tanzer, Wallace
Associate Professors: Bowne, Groover, Hodge, Hunter, Miller, Orth, Papworth, Peterson
Assistant Professors: Austin, Childress, Frick, Moaney, Percezel, Ray
Lecturers: Forster, Litmuniak, Tibbs, Tuttle, Weitzer

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 64 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, 201, 203, 204, 216, 258, 259; Philosophy 101 (33 units.)
Major. A minimum of 24 upper division units in art to include Art 403, 404, 405, 557, 590; Philosophy 541, and six units selected with the approval of the adviser from Art 404, 405, 406, 416, 499, 502, 505, 506, 509, 516, 571, 572, 573 and 574.

Emphasis in Art History
Preparation for the major. Anthropology 100; Art 258, 259, 264, 265; French, German or Italian, or a reading knowledge of the language selected. (15 units.)
Major. A minimum of 24 upper division units selected from Art 557, 560, 561, 562, 571, 572, 573 and 575; and three units of electives selected with the approval of the department from anthropology, art, 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 64 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 in graphic communication have a preprofessional orientation supplemented by a strong liberal arts background. Environmental design can lead to interior design or city planning. Graphic communication prepares the student for the areas of environmental graphics, art direction, visual design for the contemporary media of advertising, fashion illustration or editorial illustration. The areas of painting and printmaking and sculpture prepare students for professional attitudes toward the fine arts and the continuance of their educational experience in graduate schools with the goal of teaching at institutions of higher learning. The preprofessional program in art education prepares the student for teaching in either elementary or secondary schools. The crafts program can be developed to specialize in ceramics, furniture or industrial design, jewelry, textile design and weaving.

A minor is not required 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, 258, 259, and six units of art electives. (27 units.)

Major. A minimum of 24 upper division units in art to include nine units selected from three of the 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, 258, 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, 201, 202, 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, 243.

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

Group I: Art 451, 452, 553, 557; six units selected from 381, 481, 581; and six units selected from Art 323, 348, 430, 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, 258, 259; and nine units selected from Art 203, 204, 205. (27 units.)

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

Emphasis in Sculpture
Preparation for the major. Art 100, 101, 200, 201, 216, 258, 259; and three units selected from Art 203, 204, 220, 225, 231, 234. (27 units.)

Major. A minimum of 24 upper division units to include Art 416 or 517, 416, 498, 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 or general education.

Art Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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, 191, 200, 201, 220, 258, 259, and six units of electives in art. (27 units.)
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 585 and 586, 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 585 and 586. (20 units.)

LOWER DIVISION COURSES

100. (1A) Drawing and Composition (3) I, II
Six hours.
The ordering of two-dimensional space through drawing.

101. (2A) Design and Aesthetics (3) I, II
Six hours.
Fundamentals of space and color design. Basic course used as a prerequisite for advanced work.

141. (14A) Beginning Graphic Communication (3) I, II
Six hours.
Prerequisites: Art 100 and 201.
Creative projects exploring the interrelation of fundamental art principles and design using phonetic symbols and typography.

157. (5) Art Orientation (3) I
An illustrated lecture course dealing with aesthetic meaning and a survey of the history of western art. Designed to increase the understanding and appreciation of art.

200. (21A) Drawing and Composition (3) I, II
Six hours.
Prerequisite: Art 100.
Methods, materials, and tools of the professional environmental designer stressing art principles.

201. (21B) Design and Aesthetics (3) I, II
Six hours.
Prerequisite: Art 101.
Continuation of Art 101. Original work in creative design including projects in three dimensions.

203. (154-15B) Life Drawing (3) I, II
Six hours.
Prerequisite: Art 200.
Drawing from the nude model. Maximum credit six units.

204. (164-16B) Painting (3) I, II
Six hours.
Prerequisite: Art 200.
Pictorial composition and techniques of painting. Maximum credit six units.

205. (164-16B) Aquaeous Media (3) II
Six hours.
Prerequisite: Art 101.
Composition of still-life and landscape in aqueous media. Maximum credit six units.

216. (17A-17B) Sculpture (3) I, II
Six hours.
Prerequisite: Art 201.
Three dimensional design using varied 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. (19A-19B) Ceramics (3) I, II
Six hours.
Prerequisite: Art 101.
Design and construction of hand-built ceramic forms. Maximum credit six units.

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

234. (804-80B) Weaving (3) I, II
Six hours.
Prerequisite: Art 220.
Structure and design of woven fabrics. Maximum credit six units.

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 drawing of the fashion image. Maximum credit six units.

247. (X) The House and Its Environment (3) I, II
Methods, materials, and tools of the professional environmental designer stressing art principles.

248. (33A) Visual Presentation (3) I, II
Six hours.
Prerequisites: Art 100, 201, and 248.
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. (954) 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.

258. (504) Appreciation and History of Art (3) I, II
Art development in painting, sculpture, architecture, and handicrafts from the dawn of art to the Renaissance. Illustrated.

259. (50B) Appreciation and History of Art (3) I, II
The period from the Renaissance through the modern school treated in the same manner as in Art 258.

264. (52A) Chinese Art (3) I
A study of the arts of China.

265. (52A) Japanese Art (3) I
A study of the arts of Japan.
### UPPEP DIVISION COURSES

#### Honors Course

- **300. (116A.) Honors Course** (3) I, II
  - Refer to Honors Program.

#### Furniture Design

- **325. (115A.) Furniture Design** (3) I, II
  - Six hours,
  - Prerequisite: Art 101. Industrial Arts 151 is recommended.
  - Study of the principles of design through the making of furniture.

#### Ceramics

- **325. (115A.) Ceramics** (3) I, II
  - Six hours,
  - Prerequisite: Art 225.
  - Basic methods of forming, decorating, glazing and firing pottery forms with emphasis on
  - the use of the potter's wheel.

#### Beginning Jewelry Design

- **331. (170A.) Beginning Jewelry Design** (3) I, II
  - Six hours,
  - Prerequisite: Art 220.
  - Design and fashioning of jewelry. Not open to students with credit in Art 231.

#### Advanced Weaving

- **334. (110A-110B.) Advanced Weaving** (3) I, II
  - Six hours,
  - Prerequisite: Art 234.
  - Total credit in Art 234, 334 and 534 limited to nine units.
  - Advanced problems in fabric design and weave construction including tapestry and rug
  - weaving techniques. Maximum credit six units.

#### Advanced Graphic Imagery

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

#### Graphic Communication

- **341. (114A.) Graphic Communication** (3) I, II
  - Six hours,
  - Prerequisite: Art 241.
  - Investigation of design concepts relating to advertising.

#### The House and Its Environment

- **347. (108.) The House and Its Environment** (3) I, II
  - Architecture, interior design, landscape and city planning for forming man's physical and
  - aesthetic environment, its simplicities and complexities. Not open to students with credit in
  - Art 247.

#### Environmental Media

- **348. (133.) Environmental Media** (3)
  - Two lectures and four hours of laboratory.
  - Prerequisite: Art 249.
  - The communication of Environmental Design using photography, miniatures, mock-ups,
  - and transfers with terminal emphasis in transparency projection.

#### History and Theory of Environmental Design

- **381. (155A.) History and Theory of Environmental Design** (3) I, II
  - Prerequisites: Art 258 and 259.
  - Environmental arts. From earliest times to the 15th century.

#### Life Drawing and Painting

- **403. (115A-115B.) Life Drawing and Painting** (3) I, II
  - Six hours,
  - Prerequisites: Art 203 and 204.
  - Drawing and painting from nude and costumed models. Maximum credit six units.

#### Advanced Painting

- **404. (116A-116B.) Advanced Painting** (3) I, II
  - Six hours,
  - Prerequisite: Art 204.
  - Abstract composition and painterly process. Maximum credit six units.

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**405. (118A.) Advanced Aqueous Media** (3) I, II
- Six hours.
- Prerequisite: Art 205.
- Composition in watercolor and related media.

**406. (112A.) Design and Composition** (3) I, II
- Six hours.
- Prerequisites: Art 201 and 204.
- Structure in picture making.

**410. (126A-126B.) 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. (136A-136B.) 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 units.

**416. (117A-117B.) Advanced Sculpture** (3) I, II
- Six hours.
- Prerequisite: Art 216.
- Creative design in diverse materials. Maximum credit six units.

**421. (111A.) 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. (113B.) 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. (119B.) Ceramics** (3) I, II
- Six hours.
- Prerequisite: Art 325.
- Continuation of Art 325. Further development of knowledge, skills and philosophy of
  - ceramics through individual creative projects.

**429. (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.
- Prerequisite: Art 231 or 331.
- Design and production 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.

**436. (182.) Textile Design** (3)
- Six hours.
- Prerequisite: Art 220.
- Application of design for the textile surface, using a broad variety of media and processes
  - appropriate for both the individual designer and commercial reproduction. Media include
  - stencil, block, silkscreen, batik, and tie-dye. Maximum credit six units.
497. (196B.) Senior Investigation and Report in Art History (3) I, II
Prerequisite: Art 101 and consent of the instructor.
Individual research into areas of art history not covered by regular courses.

498. (198A.) Senior Project (3) I, II
Prerequisite: Consent of instructor.
Investigation in art. Formal presentation of project.

Six hours.
Prerequisite: Art 101. Art 141 and 201 are recommended.
Study of course design for contemporary architectural and motivational graphics.

441. (148B.) Advanced Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 341.
The relation of art structure and the aspects of visual communication.

442. (194A-194B.) Advanced Fashion Imagery (3) I, II
Six hours.
Prerequisite: Art 101. Art 242 is recommended.
Emphasis on developing individual drawing concepts and creative techniques in fashion illustration. Creation of fashion drawings and fashion advertising layouts. Development of a professional portfolio. Maximum credit six units.

443. (193A.) Drawing and Illustration for Graphic Communication (3) I
Six hours.
The disciplines of realistic descriptive illustration including problems in imaginative, aesthetically refined painterly illustration. Media to include gouache, watercolor, scratch board, mixed media, and pen and ink.

444. (194A.) Visual Communication Media (3) I, II
Six hours.
Prerequisite: Art 341.
Experimental, creative and practical exploration of contemporary communication as related to magazine and editorial layout. Production of a student designed limited edition.

450. (186.) Synergetic Environments (3)
Two lectures and four hours of laboratory.
Prerequisite: Art 454.
Synthesis of materials, space, sound and light using exploratory methods in full scale projects.

451. (195A.) Residential Interior Design (3) I, II
Six hours.
Prerequisite: Art 251.
Survey, analysis and conceptual design methods of residential interiors stressing materials, equipment, components and structural detailing. Maximum credit six units.

452. (195B.) Interior Design Practicum (3)
Nine hours of laboratory.
Prerequisite: Credit or concurrent registration in Art 552.
Field experience with local professional interior designers in clientele relationships, business procedures, supervision of subcontracted work and installation, and execution of contracts.

454. (195B.) Environmental Design (3) I, II
Six hours.
Prerequisite: Art 451.
Survey, analysis and design synthesis of problems of more complexity, through interiors, to landscape, to architectural planning and, finally, concern for city design.

479. (124A.) History of Ceramics (3) I, II
Philosophical approaches to design of pottery and techniques as related to contemporary ceramics. Field trips.

481. (135B.) History and Theory of Environmental Design (3) I, II
Prerequisite: Art 258 and 259.
Environmental arts. From the 15th to the 19th century.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

497. (196B.) Senior Investigation and Report in Art History (3) I, II
Prerequisite: Six upper division units in art, and consent of the instructor.
Individual research into areas of art history not covered by regular courses.
517. Advanced Figurative Sculpture (3) I, II
Six hours.
Prerequisites: Art 216 and 217.

521. Industrial Design (3) I, II
Six hours.
Prerequisite: Art 421.
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.

522. Design Crafts (3) Irregular
Six hours.
Prerequisite: Art 220.
Exploration of a variety of materials and techniques. Development of the aesthetic and technical abilities of the artist craftsman. Maximum credit six units.

523. Advanced Furniture Design (3) I, II
Six hours.
Total credit in Art 323, 423 and 523 limited to nine units.
Prerequisite: Art 423.
Advanced individual design; exploration of materials, process and function. Maximum credit six units.

525. Ceramics (3) I, II
Six hours.
Prerequisite: Art 425.
Study of ceramic design through creative projects of clay forms. Maximum credit six units.

526. Clay and Glaze Technology in Ceramic Design (3)
Six hours.
Prerequisite: Art 425.
Experistmentation and application of research concerning the use of ceramic materials and techniques as an integral part of the design process. Maximum credit six units.

529. Design in Enamels (3) I, II
Six hours.
Prerequisite: Art 429.
Design and production of vitreous enamels. Maximum credit nine units; six units applicable on a master's degree.

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

532. Metalsmithing (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. 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 synthetic commercial dyes. Maximum credit six units.
566. (1528.) The Art of Persia and the Islamic World (3) I
Prerequisites: Art 258 and 259.
History of the art, architecture, sculpture and minor arts of Persia and the Islamic World.

567. (153.) Art of the Ancient Near East (3) I
Prerequisite: Art 258.
Development of painting, sculpture, architecture and crafts from prehistoric times to the fourth century B.C.

568. Art of Crete, Mycenae, Greece, and Rome (3) II
Prerequisite: Art 258.
Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.

569. Art of Sub-Saharan Africa (3) I
Prerequisites: Art 258 and 259.
Form and content of the arts of Sub-Saharan Africa viewed within a cultural context.

570. Art of Oceania (3) II
Prerequisites: Art 258 and 259.
Form and content of the 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 Gothic 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) II
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. (156C) 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. (156C) History of Printmaking (3) Irregular
Prerequisites: Art 258 and 259.
History of printmaking from its inception to the present.

579. (120B.) History of Ceramics (3) I, II
Prerequisite: 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. (155C) History and Theory of Environmental Design (3) I, II
Prerequisites: Art 258 and 259.
Environmental arts in the 19th and 20th centuries.

584. (165.) 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.) Practicum in Art (2) I, II
Prerequisite: To be taken concurrently with 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

600. Drawing (3) I, II
Six hours.
Prerequisite: Art 500.
Projects synthesizing process and concept in visual field ordering. Maximum credit six units applicable on a master's degree.

604. (216A-216B.) Painting (3)
Six hours.
Prerequisites: Art 405, 504 and 506.
Organization with visual subject matter. Maximum credit six units applicable on a master's degree.

609. (260A-260B.) Printmaking (1-3)
Two hours for each unit of credit.
Advanced creative work in selected printmaking media based upon the analysis of the history and philosophies of printmaking from its inception through contemporary concepts. Maximum credit six units applicable on a master's degree.

616. (217A-217B.) Sculpture (3) I, II
Six hours.
Prerequisites: Art 516 and classified graduate standing.
Aesthetic organization of selected subject matter in the media of sculpture. Maximum credit six units applicable on a master's degree.

625. (212A-212B.) Crafts (1-3)
Two hours for each unit of credit.
Prerequisite: Six units completed in upper division courses in sculpture or ceramics or printmaking or a combination of these courses.
Advanced creative work in selected craft media. Maximum credit six units applicable on a master's degree.

627. (221.) Advanced Clay and Glaze Technology in Ceramic Design (3)
Six hours.
Prerequisite: Art 425.
Experimentation with the use of ceramic material and techniques as an integral part of the design process. Maximum credit six units applicable on a master's degree.
628. Enamel Workshop (3) I, II
Six hours.
Prerequisite: Art 529.
Workshop in enamel technology and its application to the craft. Maximum credit six units applicable on a master's degree.

631. (270.) Seminar in Jewelry and Metalwork (3)
Prerequisite: Art 331.
Problems in the design and execution of works in precious metals. Projects will be determined by the individual student in conference with the instructor. Maximum credit six units applicable on a master's degree.

634. (280.) Seminar in Textile Design (3)
Prerequisite: Art 334A.
Problems in textile design and technology. Projects will be determined by the individual student in consultation with the instructor. Maximum credit six units applicable on a master's degree.

641. (214.) Graphic Communication (1-3)
Two hours for each unit of credit.
Prerequisite: Art 541B.
Advanced individual study in graphic design. Maximum credit six units applicable on a master's degree.

650. (295.) Creative Environmental Design (10)
Prerequisite: Six upper division units in interior design, architecture or city planning.
Creative work in interior design, architecture and civic design. Maximum credit six units applicable on a master's degree.

694. (294A-294B.) Seminar in the Principles of Design in the Space Arts (3)
Prerequisite: A semester course in art appreciation.
An intensive study of the activity of creative expression and aesthetic appreciation in the area of visual experience. The aesthetic analysis of original works of art. Maximum credit six units applicable on a master's degree.

700. (291.) Seminar in the Practice of Art (3)
Prerequisite: M.A. standing.
Independent research in specified areas including the presentation of a paper with its oral defense.
Each course may be taken to a maximum of six units. No more than six units of 700 are applicable on a master's degree.
A. Seminar in Painting
B. Seminar in Sculpture
C. Seminar in Printmaking
D. Seminar in Ceramics
E. Seminar in Crafts
F. Seminar in Graphic Communication
G. Seminar in Environmental Design

760. (292E.) Seminar in Modern Art (3)
Prerequisite: Art 557.
Studies in problems of the development of art styles or important artists within broad limits of modern art.

775. (292D.) Seminar in Baroque and Rococo Art (3)
Prerequisites: Art 258 and 259.
Studies in problems of the development of art styles or important artists within broad limits of baroque and rococo art.

798. (298.) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units.
Prerequisite: Consent of the staff; to be arranged with department chairman and the instructor.

799A. (299.) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for a master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.
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. Cox is student adviser.

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

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 64 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 365 is selected in the major. Art 264 and 265 and Comparative Literature 260A-260B are recommended.

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 (when relevant), 571, 577, 580, 581; History 496 (when relevant), 561A-561B, 562A-562B, 564A-564B, 566, 567A-567B, 569, 570, 571A-571B; Philosophy 301 (unless waived by the instructor) and 575 (when relevant), 596; Religious Studies 501, 503, 506, 508, 580, 581 and 499 (when relevant); and from the social sciences not less than 12 units from at least two departments chosen from Anthropology 496, 547, 548, 550, 551, 552, 581 (when relevant); Economics 330, 360, 465, 489, 496 and 499 (when relevant); Geography 331, 333, 334, 380; Political Science 499.

Foreign language. Asian language recommended.

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 260A-260B, 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, 562A-562B, 564A-564B, 566, 567A-567B, 569, 570, 571A-571B; Philosophy 301 (unless waived by the instructor) and 575 (when relevant), 596; Religious Studies 501, 503, 506, 508, 580, 581 and 499 (when relevant); and from the social sciences not less than six units chosen from Anthropology 547, 550, 551, 580; Economics 465; Geography 331, 333, 334; Political Science 499; 562; Business Administration 376.

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 or general education.

LOWER DIVISION COURSES
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
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.

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
601. Interdisciplinary Methods (3)
Introduction to graduate research methods and presentation of findings.

690. Seminar in Asian Studies (3)
Intensive study of an aspect of Asian studies. Maximum credit six units.

797. Research (1-3) Cr/NC
Research in one of the aspects of Asian studies. Maximum credit six units applicable on a master's degree.

799A. Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

Registration required in any semester or term following assignment of SP in Course 799A, in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
Astronomy

In the College of Sciences

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

Offered by the Department
Master of Science degree in astronomy.
Major in astronomy with the A.B. degree in liberal arts and sciences.
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 64 of this catalog.

Preparation for the major. Astronomy 101, 109; Physics 195A-195B-195C (16 units.)
Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics to include Mathematics 150, 151, 152 and either 340A-340B, or 530 and three additional units of upper division mathematics. Recommended: Mathematics 541A, 541B, 531, Engineering 502.

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 on page 64 of this catalog.

Preparation for the major. Astronomy 101, 109; Physics 195A-195B-195C (16 units.)
Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics to include Mathematics 150, 151, 152, and either 340A-340B, or 530 and three additional units of upper division mathematics. Recommended: Mathematics 107, 541A, 541B, 531, Engineering 502.

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 or general education.

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.

109. (9) Practice in Observing (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Astronomy 101.

A course designed to supplement Astronomy 101. The course will include constellation study, use of astronomical coordinates, and descriptive observations of celestial objects.

112. (12) Elementary Navigation (3) I
Prerequisite: Astronomy 101 and 109 recommended. Compass corrections, time, line of position, use of celestial coordinates, tables such as H.O. 214 for the solution of astronomical triangle.

130A-130B. (30A-30B) Survey of Literature in Astronomy (1-1) I, II
Prerequisite: Astronomy 101.
Readings in current developments in astronomy.

299. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (156) Honors Course (1-3) I, II
Refer to Honors Program.

303. (103) Astronomical Optics (3) II
Two lectures and three hours of laboratory.
Prerequisites: Physics 195C, or 124B and 125B.
Theory and applications of optical instruments used in astronomy.

304A-304B. (104A-104B) Advanced Astronomy (3-3)
Prerequisites: Astronomy 101 and 109 and credit or concurrent registration in both Mathematics 151 and Physics 195C.
Problems in practical astronomy, such as atmospheric refraction, proper motion, photographic and photoelectric photometry, solar system astrophysics.

305. (105) Historic Development of Astronomy (3) I
A study of the more important problems and astronomical concepts in the light of their historical development. Particular attention is given to the biography and contributions of the more important astronomers, such as Galileo, Kepler, Newton, Herschel, Bessel.

312A-312B. (112A-112B) Astrophysics (3-3)
Prerequisites: Astronomy 101 and Physics 195C. Astronomy 312A is prerequisite to 312B.
An application of modern physics to a study of the sun and the stellar system.

Prerequisite: An acceptable master plan for graduation within one year.
Consists of the selection and design of individual projects; oral and written progress reports.

498B. (198B) Senior Project (2) II
Six hours of laboratory.
Prerequisite: Astronomy 498A.
Laboratory work, progress reports, oral and written reports.

499. (199) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisites: Three units in astronomy and consent of instructor.

520. Solar System Astronomy (3)
Prerequisites: Astronomy 101 and Physics 195C.
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.

580. (180) Celestial Mechanics (3) I, II
Prerequisite: Mathematics 152.
The problem of two bodies based on the solutions of differential equations using Newtonian mechanics. Potential theory; geometrical interpretation of perturbations; calculation of planetary positions.

596. (196) Advanced Topics in Astronomy (2 or 3) I, II
Prerequisite: Consent of instructor.
Selected topics in theoretical astronomy or astrophysics. May be repeated with new content upon approval of instructor. Maximum credit six units.
GRADUATE COURSES

600. (200.) Seminar (2 or 3)
Prerequisite: Consent of instructor.
An intensive study in advanced astronomy, topic to be announced in the class schedule.
Maximum credit six units applicable on a master's degree.

610. (210.) Binary Stars (3)
Prerequisite: Astronomy 312B.
An intensive study of visual, spectroscopic, and eclipsing binaries, including the determination of orbits.

620. (220.) Galactic Structure (3)
Prerequisite: Astronomy 312B.
Survey of basic observational data for determining the structure of the Milky Way Galaxy; luminosity functions, stellar distributions in and near the galactic plane, solar motion, kinematics and dynamics of stellar motions, and galactic rotation; introduction to stellar dynamics.

630. (230.) Stellar Interiors (3)
Prerequisite: Astronomy 312B.
Structure of the interior of stars including the details of the reactions by which energy is obtained and the evolution of stars.

640. (240.) Interstellar Matter (3)
Prerequisites: Astronomy 312B and Mathematics 530.
Interstellar absorption and polarization, theory of interstellar grains, physics of a low density gas in a dilute radiation field, nebulae, interstellar absorption lines, dynamics of the interstellar medium, and radio observations of the interstellar medium.

650. (250.) Stellar Atmospheres (3)
Prerequisite: Astronomy 312A.
Emission and absorption of radiation, continuous spectra, spectral lines, model stellar atmosphere calculations, and non-LTE problems.

660. (225.) Extragalactic Structure (3)
Prerequisite: Astronomy 312B.
The individual and collective properties of normal and peculiar galaxies. Topics include classification, spectra, masses, luminosity distributions, distance indicators, clustering, and redshifts.

670. (170.) Astrophysical Spectroscopy (3)
Prerequisite: Mathematics 152 and credit or concurrent registration in Astronomy 312A.
Theory of atomic spectra and atomic structure leading to interpretation of astronomical spectra. Optics of spectograph design, line identification, spectral classification, radial velocity measurement, and line profile analysis.

797. (297.) Research (1-3) Cr/NC
Prerequisite: Classified graduate standing.
Research in one of the fields of astronomy. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff, to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (396.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Athletics

In the College of Professional Studies

Faculty
Professor: Karr (Chairman)
Assistant Professors: Gilbert, Templeton, Zampese
Head Coaches: Hill, Vezie
Coaches: Dietz, Kofler, Matson, Shafer, Toller

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

LOWER DIVISION COURSES

299. (59.) Experimental Topics (2-4) I, II
Refer to the catalog statement on Experimental Topics on page 115. 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.

380. (180.) Intercollegiate Sport Practicum (2-3)
Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures for varsity team members. A sport may be taken only once for credit in either Athletics 380 or 381.
Subject fields of 380 are as follows:

Offered in the Fall
A Basketball (3)
B Cross Country (2)
C Football (3)
D Gymnastics (3)
E Swimming (2)
F Water Polo (2)
G Wrestling (3)
H Baseball (3)
I Golf (2)
J Rowing (2)
K Tennis (2)
L Track (3)
M Volleyball (2)
N Soccer (2)

381. (181.) Competitive Sport Practicum (2-3)
Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures. A sport may be taken only once for credit in either Athletics 380 or 381.
Subject fields of 381 are as follows:

Offered in the Fall
A Basketball (3)
B Cross Country (2)
C Football (3)
D Gymnastics (3)
E Swimming (2)
F Water Polo (2)
G Wrestling (3)
H Baseball (3)
I Golf (2)
J Rowing (2)
K Tennis (2)
L Track (3)
M Volleyball (2)
N Soccer (2)

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

Professors: Bae, Brandt, Clark, Collier, Cooper, Cox, Farris, Flitner, Ford, Hazen (Chairman), Johnson, McBlair, Miller, Neel, Parsons, Ratti, Rinehart, Shepard, Sloan, Taylor
Associate Professors: Awhrey, Daugherty, Diehl, Ebert, Futch, Hurlbert, Krisans, Paolini, Sanders, Schepito, Twaities, Zedler, P.
Assistant Professors: Barnett, Davis, Dukepoo, Hays, R.L., Maunello, Zedler, J.
Lecturers: Hayes, R.L., Mathewson, 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.
Master of Science degree in biology with emphasis on local forms and their habitats.
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.

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 64 of this catalog. A total of 45 upper division units must be selected from the general Biology Degree requirements and the list of courses acceptable for electives. Students must choose French, German, or Russian to meet the foreign language requirement. A minor is not required with this major.

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 64 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 64 of this catalog. A total of 36 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.

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 200A-200B, and 230 or 231, Mathematics 121, 122, or 149 and 150; Physics 115A-115B or 124A-124B and 125A-125B or 195A-195B-195C.

Major. A minimum of 24 upper division units for the A.B. degree or 36 upper division units for the B.S. degree to include Biology 520, 540, 560, 497E or 497F, 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 upper division botany courses except Botany 312, 319; all upper division chemistry courses except 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 Zoology 314, 350, 520. All courses not covered in this list must have prior approval by the Biology Department chairman.

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 or general education.

Biology

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education. The requirements for the single subject teaching credential in life sciences which includes the area of biology are being revised. For further information consult the department.

LOWER DIVISION COURSES

100. (1.) General Biology (3) I, II
Prerequisites: None; concurrent registration in Biology 100L recommended.
A beginning course in biology stressful 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.

130. Ecosystems and Man (3) I, II
Prerequisite: A high school or college general biology course.

145. (25.) Introduction to Heredity (3) I, II
Heredity mechanisms and consideration of the social implications of recent and expected developments in the field of heredity. Not open to biology majors.

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.

231. (9.) Human Physiology (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Zoology 108 or 160; Chemistry 100A-100B.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (166.) Honors Course (1-3) I, II
Refer to Honors Program.

303-S. (170-S.) Contemporary Problems in Biology (1) S Cr/NC
A series of six weekly lectures on varied aspects of biology by scientists engaged in research. Reading and reports required of students enrolled for credit. These lectures are open to the public. Maximum credit three units.

320. Concepts of Ecology (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Biology 100 and Chemistry 200A-200B.

350. (139.) 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.

410. Bioscience Methodology (3) I
One lecture and six hours of laboratory.
Prerequisite: Consent of instructor.

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

462. (140.) Principles of Human Physiology (3) I, II
Prerequisite: Biology 100 or Zoology 108. Principles of human physiology. Body maintenance and nerve and muscle physiology. Not open to students with credit in Biology 261.

462L. (141.) Human Physiology Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Biology 462. Laboratory work in human physiology. Not open to students with credit in Biology 261.

496. Experimental Topics (1-5)
Refer to catalog statement on Experimental Topics on page 115. 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.

497E. (191.) Senior Investigation and Report in Ecology (2) I, II
Prerequisites: Biology 520, senior standing and consent of instructor.

497G. (195.) Senior Investigation and Report in Genetics (2) I, II
Prerequisites: Biology 540, senior standing and consent of instructor.

497P. (190.) Senior Investigation and Report in Physiology (2) I, II
Prerequisites: Biology 560, senior standing and consent of instructor.

498. (198.) Methods of Investigation (2) I, II
One hour of discussion and three hours of laboratory.
Prerequisites: Junior standing and a major in the life sciences. Individual and original investigations in biology; class reports. Maximum credit four units for Biology 498 or a combination of this course with Microbiology 495 or Zoology 498.

505. (161.) History of Biology (3) I, II
Prerequisite: A college course in biology. Lectures and reports tracing scientific development of biology with emphasis on the influence of personalities and trends of the times. Not more than three units in the history of biology may be counted for graduate credit.

506. (162.) Source Material in the History of Biology (3) I, II
Prerequisite: Biology 505. A study of original papers of significance to the history of biology. Not more than three units in the history of biology may be counted for graduate credit.

519. (175.) Statistical Methods in Biology (3) I
Two lectures and three hours of laboratory.
Prerequisite: Biology 520, 540 or 560. Application of statistical techniques to biological data. Not open to students with credit for another upper division course in statistics except with written approval of the chairman of the department offering the student's major to be filed with the Evaluations Office.

520. (170.) Ecology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 215 and Chemistry 200A-200B. Relationships between organisms and the environment; field study in local marine, fresh water, mountain, chaparral, and desert habitats.

521. (171.) Applied Ecology (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 520. The ecology of individuals, populations, or communities. May be repeated with new content. Maximum credit six units applicable on a master's degree.

525. Agricultural Ecology (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 320 or 520. Mechanisms controlling fertility, productivity and regulation in agricultural ecosystems.

526. Ecology of Renewable Resources (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 320 or 520. Ecological principles in exploitation and management of forest, range, watershed and recreation lands for sustained human benefit.

530. (111.) Limnology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 520 and Chemistry 200A-200B. Biological, chemical and physical considerations of inland waters.

531. (113.) Biological Oceanography (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 520, Zoology 150, Physics 124A. Application for collecting permit must be made at least six weeks before class begins at the Center for Marine Studies (AS-111). Ecological concepts as applied to pelagic and benthic marine organisms and their environment. Field and laboratory experience in oceanographic techniques, particularly the coastal environment.

532. (112.) Fisheries Biology (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 520. Fisheries of commercial importance. The dynamics of exploited populations.
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>535.</td>
<td>Systems Ecology</td>
<td>(5) I, II</td>
<td>Four lectures and three hours of laboratory. Prerequisites: Biology 520 and consent of instructor. Provides a foundation in the theories and techniques necessary for a systems approach to ecology, including computer programming and topics in applied mathematics useful in systems analysis.</td>
</tr>
<tr>
<td>536.</td>
<td>Environmental Measurement</td>
<td>(3) I, II</td>
<td>Two lectures and three hours of laboratory. Prerequisites: Biology 520 and consent of instructor. The utilization of electronic equipment to record ecological data under field conditions, including field power supplies, effects of fluctuations in environmental conditions, types of sensors, amplifiers and data recorders, and the interfacing of components.</td>
</tr>
<tr>
<td>537.</td>
<td>Simulation of Ecological Systems</td>
<td>(4) I, II</td>
<td>Two lectures and six hours of laboratory. Prerequisites: Biology 535 and consent of instructor. Properties of different types of models, Monte Carlo methods, the design of simulated experiments, ways of evaluating models, the use of simulation studies as a means of guiding research. The computer will be extensively used.</td>
</tr>
<tr>
<td>540.</td>
<td>Genetics</td>
<td>(4) I, II</td>
<td>Two lectures and six hours of laboratory. Prerequisite: Biology 215. Principles of plant and animal genetics with experiments and demonstrations illustrating the mechanisms of heredity.</td>
</tr>
<tr>
<td>541.</td>
<td>Developmental Biology</td>
<td>(4) I, II</td>
<td>Two lectures and six hours of laboratory. Prerequisites: Biology 540 and Chemistry 230 or 231. Recommended: Biology 560. Analysis of development with emphasis on embryonic differentiation.</td>
</tr>
<tr>
<td>544.</td>
<td>Human Genetics</td>
<td>(4) I, II</td>
<td>Two lectures and six hours of laboratory. Prerequisite: Biology 540. Genetics as related to human biology, with consideration of the applied fields of medical genetics, genetic counseling, and population studies.</td>
</tr>
<tr>
<td>545.</td>
<td>Cytogenetics</td>
<td>(4) I</td>
<td>Two lectures and six hours of laboratory. Prerequisite: Biology 540. The physical basis of heredity. Study of the chromosomes and chromosome behavior in relation to problems in heredity and evolution.</td>
</tr>
<tr>
<td>546.</td>
<td>Mutagenesis</td>
<td>(3)</td>
<td>Prerequisite: Biology 540. Basic principles and applications of mutation induction, expression, and detection at all levels of biological organization. Emphasis on mutation induction by chemicals and ionizing radiations.</td>
</tr>
<tr>
<td>547.</td>
<td>Microbial Genetics</td>
<td>(3) I, II</td>
<td>Theory underlying microbial genetics.</td>
</tr>
<tr>
<td>548.</td>
<td>Behavioral Genetics</td>
<td>(3) I, II</td>
<td>Prerequisite: Biology 540. The genetic involvement of single and multiple gene systems in animal behavior.</td>
</tr>
<tr>
<td>550.</td>
<td>Ecological Genetics</td>
<td>(3) I, II</td>
<td>Prerequisites: Biology 520 and 540. Theory of adaptations of natural populations to their environments.</td>
</tr>
<tr>
<td>559.</td>
<td>Advanced Genetics</td>
<td>(3) I, II</td>
<td>Prerequisite: Biology 540. Current topics in molecular, organismal or population genetics. Maximum credit six units.</td>
</tr>
</tbody>
</table>
580. (109.) Regional Field Studies in Biology (1-3)
One- to three-week periods during vacations and summer sessions.
Prerequisites: At least twelve units in the biological sciences, including Biology 100 and 100L, and consent of instructor. Application for collecting permit must be made at least six weeks before class begins at the Center for Marine Studies (AS-111).
Extended field studies of the flora, fauna, and biotic communities of major natural regions of western North America. May be repeated with new content. Maximum credit six units.

GRADUATE COURSES

600. (200.) Seminar (2-3)
Prerequisite: Consent of instructor.
An intensive study in advanced biology, topic to be announced in the class schedule.
Maximum credit six units applicable on a master's degree.

610. (231.) Seminar in Ethology and Comparative Psychology (3)
(Same course as Psychology 781.)
Prerequisite: Biology 520, or Psychology 414 or 417, or Zoology 570, and consent of the graduate adviser.
Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.

615. (250.) Biogeography (3)
Prerequisite: Biology 520 or 549.
Concepts and principles of the distributional history of plant and animal groups, and the origins and dispersal of modern faunas and floras.

620. (242.) Population and Community Ecology (3)
Two lectures and three hours of laboratory.
Prerequisite: Biology 520.
Formulation, analysis, and experimental testing of the theories of the structure and dynamics of ecological systems at the population and community levels.

621. (243.) Physiological Ecology (3)
Two lectures and three hours of laboratory.
Prerequisites: Biology 520 and consent of instructor.
The comparative physiological characteristics of natural plant and animal populations in relation to their habitats and environments.

622. (246.) Behavioral Ecology (3)
Two lectures and three hours of laboratory.
Prerequisites: Biology 520 and consent of instructor. Recommended: Zoology 570 or Psychology 461.
Behavioral mechanisms relating animals to their physical and biotic environment.

625. (244.) Physical Aspects of Ecology (3)
Two lectures and three hours of laboratory.
Prerequisite: Biology 520.
Analysis and measurement of physical factors of the environment and of the processes by which energy and matter are exchanged between organisms and the environment; the significance of the physical environment in ecological processes.

626. (245.) Aquatic Ecology (3)
Two lectures and three hours of laboratory.
Prerequisites: Biology 520 and consent of instructor. Application for collecting permit must be made at least six weeks before class begins at the Center for Marine Studies (AS-111).
Ecological concepts as applied to benthic and pelagic populations and communities in fresh water and marine environments.

630. (240.) Seminar in Terrestrial Ecology (2)
Prerequisite: Biology 520.
Ecological concepts as applied to the terrestrial environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

631. (241.) Seminar in Aquatic Ecology (2)
Prerequisite: Biology 520.
Ecological concepts as applied to the fresh water and marine environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

640. (270.) Seminar in Genetics (2)
Prerequisite: Biology 540.
Maximum credit four units applicable on a master's degree.

641. (290.) Seminar in Developmental Biology (2)
Prerequisite: Biology 541.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

642. (291.) Developmental Genetics (3)
Prerequisites: Biology 541 and 560.
Regulation of genetic information in developing systems.

643. (292.) Morphogenesis (3)
Prerequisites: Biology 541 and 560.
Regulation of pattern formation in developing systems; cell migration, cell division, cell death, developmental differentiation.

649. (290.) Speciation (3)
Prerequisites: Biology 520 and 540, or 549.
Concepts and principles of the origin of species.

651. (270.) Physiological Genetics (3)
Prerequisites: Biology 540 or 544; Chemistry 231. Recommended: Chemistry 361A-361B.
Biochemical aspects of genetics of microbial and human systems.

660. (210.) Seminar in Cellular Physiology (Q)
Prerequisites: Biology 560 and consent of instructor.
Maximum credit four units applicable on a master's degree.

661. (260.) Seminar in General Physiology (2)
Prerequisite: Biology 560.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

662. (265.) Seminar in Comparative Physiology (2)
Prerequisites: Biology 562A or 562B and consent of instructor.
Comparative aspects of function at the molecular through organismal levels. Maximum credit four units applicable on a master's degree.

663. (261.) Seminar in Environmental Radiation (2)
Prerequisites: Biology 570 and 571.
The sources, characteristics, distribution, measurement, and fate of radioactive contaminants in the biosphere and interactions with the biota. Maximum credit four units applicable on a master's degree.

670. (262.) Cytoplasmic Inheritance (3)
Prerequisites: Biology 540, 560 and consent of instructor.
Literature and techniques related to research in non-Mendelian genetics.

671. (264.) Methods in Physiology (2)
Six hours of laboratory.
Prerequisite: Biology 560.
Current methods employed in physiological measurements. Maximum credit four units applicable on a master's degree.

672. (265.) Molecular Biophysics (3)
Prerequisites: Biology 560 and Mathematics 122.
The description and analysis of biological processes and systems in terms of the properties of molecules and of basic principles.

697. (291.) Investigation and Report (3)
An analysis and research techniques in biology.

790. (290.) Bibliography (1)
Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

797. (297.) Research (1-3) Cr/NC
Research in one of the fields of biology. Maximum credit six units applicable on a master's degree.
798. (298.) Special Study (1-3) Cr/NC
   Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
   Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC
   Prerequisite: An officially appointed thesis committee and advancement to candidacy.
   Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC
   Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP
   Registration required in any semester or term following assignment of SP in Course 799A
   in which the student expects to use the facilities and resources of the university; also student
   must be registered in the course when the completed thesis or project is granted final approval.

897. Doctoral Research (3-6) Cr/NC
   Prerequisite: Admission to the doctoral program.
   Independent investigation in the general field of the dissertation.

899. Doctoral Dissertation (3-6) Cr/NC
   Prerequisite: An officially constituted dissertation committee and advancement to candidacy.
   Preparation of the dissertation for the doctoral degree.

Botany
In the College of Sciences

Faculty
Emeritus: Harvey
Professors: Gallup, Kummerow, Wedberg
Associate Professors: Alexander, Preston, Rayle (Chairman)
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 64 of this catalog. It is recommended that students choose
   French, German, or Russian to meet the foreign language requirement for graduation.
   A minor is not required with this major.
   Preparation for the major. Biology 100, 100L, and 215; Chemistry 200A-200B, and 230 or
   231; Mathematics 121 or 140; and Physics 115A-115B, or 124A-124B and 125A-125B. (32
   units.)
   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 490A, 490B, 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 64 of this catalog.
   A minor is not required with this major.
   Preparation for the major. Biology 100, 100L, and 215; Chemistry 200A-200B, and 230 or
   231; Mathematics 121 or 140; and Physics 115A-115B, or 124A-124B and 125A-125B. (32
   units.) Recommended: German or French or Russian; Geology 100 and 101 or 104 and 105.
   Major. A minimum of 36 upper division units in the biological sciences to include Biology
   520 and 540; Botany 500 and 501 or 502 or 503; Botany 490A, 490B, 514 and 530;
   Microbiology 310; and five units of electives. Recommended: Botany 540.

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 or general education.

Botany
For the Single Subject Teaching Credential in Life Sciences
   All candidates for a teaching credential must complete all requirements for the applicable
   specialization as outlined in the section of this catalog on the School of Education.
   The requirements for the single subject teaching credential in life sciences which includes
   the area of botany are being revised. For further information consult the department.

LOWER DIVISION COURSES

100. (L.) 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (166.) 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. Prerequisite: A course in college biological science. Local native vegetation with emphasis on ecological units within floristic areas. Primarily for students not majoring in the College of Sciences.

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. Selection and design of individual project; oral and written reports.

490B. (190B.) Senior Investigation and Report (2) I, II
One discussion period and five additional hours to be arranged. Prerequisite: Botany 490A. Individual investigation, progress reports, oral and written final reports.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

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: Botany 540. The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.
630. (230.) Seminar in Plant Physiology (2)
Prerequisite: Botany 530
Current investigations in one of the areas in plant physiology. Maximum credit four units applicable on a master's degree.

797. (237.) Research (1-3) Cr/NC
Research in one of the fields of botany.
Maximum credit six units applicable on a master's degree.

798. (238.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a thesis or a project for a master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

140. (304.) Business Law (0) I, II
Introduction to legal institutions; nature and sources of law; the judicial system; legal concepts and cases involving contracts, agency, and sales.
166 / Business Administration

141. (30R.) 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 bankruptcy administration. Students preparing for public accounting should take Business Administration 340 labor law. 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.

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. (63.) Information Processing and Computer Programming (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 communication 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. (14-1B.) (2-2) or 212. (14-1B.) (4) Accounting Fundamentals I, II
Prerequisite: Business Administration 210A is prerequisite to 210B.
Organizing, recording, and communicating economic information relating to the business entity.

231. (170.) Real Estate Principles and Practices (3) I, II
Prerequisites: Business Administration 190 and 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. Not open to students 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. (89.) 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.

295. (76.) Advanced Shorthand (3)
Prerequisite: Business Administration 194B.
Development of speed in writing and transcription.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

301. (196.) Quantitative Analysis for Business (3) I, II
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. (194.) Scope and Function of Business Education (3) I
Prerequisite: Philosophy, scope, and functions of business education; analysis and development of curricula; instructional foundations of basic business subjects.

307. (169.) Intermediate Accounting (4) I, II
Prerequisite: Minimum grade of C in Business Administration 210A-210B or 212.
Theories and principles underlying financial statements and determination of income of profit-seeking enterprises. Emphasizes asset and liability accounting.

311. (115.) Financial Accounting Theory (4) I, II
Prerequisite: Business Administration 301 with minimum grade of C.
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.
Prerequisites for Business Administration 310 and 314.
Problems involved in partnerships, consignments, 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
Prerequisite: Completion of lower division course requirements in major or minor.
Role of economic analysis in management decisions. Study of demand, cost, supply theories from a business viewpoint. Emphasis on managerial decision making.

323. (120.) 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, leveraging and the techniques of present value and its applications. Sources of capital.

325. (127.) Planning of Capital Expenditures (3) I, II
Prerequisite: Business Administration 323 and registration in 301.

327. (126.) Investments (3) I, II
Prerequisite: Business Administration 323.
Investment principles and practices with emphasis on the small investor, such as tests of a good investment, sources of information, types of stocks and bonds, mechanics of purchase, 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.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Units</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>333. (121.)</td>
<td>Law of Real Property (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 141 and 231. Legal theory and practice of estates in land; landlord and tenant relationships; land transactions; mortgages and trust deeds; easements; land use; ownership rights in land; environmental law.</td>
</tr>
<tr>
<td>340. (124.)</td>
<td>Advanced Business Law (3) I, II</td>
<td></td>
<td>Prerequisites: 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 surityship. Special emphasis on problem-solving techniques. Not open to students with credit in Business Administration 141.</td>
</tr>
<tr>
<td>341. (131.)</td>
<td>Law in a Business Society (3) I, II</td>
<td></td>
<td>Prerequisites: 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.</td>
</tr>
<tr>
<td>342. (126.)</td>
<td>General Insurance (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 342. 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.</td>
</tr>
<tr>
<td>344. (122.)</td>
<td>Social Insurance (3) II</td>
<td></td>
<td>Prerequisites: Economics 121. Public assistance and age, survivors, disability, and hospitalization insurance; workers' compensation; unemployment compensation and disability insurance. Administration, coverage, financing, and benefit provisions. Strength and weakness of existing systems.</td>
</tr>
<tr>
<td>348. (124.)</td>
<td>Life Insurance Principles and Practices (3) II</td>
<td></td>
<td>Prerequisites: Business Administration 342. Economic and social aspects of life insurance; nature of life insurance and annuity contracts; basic legal principles; theory of probabilities; mortality tables; cash values; company operational activities; agency development and management.</td>
</tr>
<tr>
<td>350. (132.)</td>
<td>Management and Organization (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 350 or Public Administration 330. Concepts of organizing activities to achieve goals. Effects of environment, technology and human behavior on organization design. Managerial processes including planning, decision making, influence and control required to operate and change organizations.</td>
</tr>
<tr>
<td>351. (145.)</td>
<td>Organizational Behavior (3) I, II</td>
<td></td>
<td>Prerequisites: 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.</td>
</tr>
<tr>
<td>352. (140.)</td>
<td>Human Resources Management (3) I, II</td>
<td></td>
<td>Prerequisites: 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.</td>
</tr>
<tr>
<td>360. (135.)</td>
<td>Fundamentals of Production and Operations Management (3) I, II</td>
<td></td>
<td>Two lectures and three hours of laboratory. Prerequisite: Business Administration 350. The role of the operations function in the organization. Study of production and operations. Systems analysis, facilities planning, competitive bidding, methods and scheduling and control models.</td>
</tr>
<tr>
<td>370. (150.)</td>
<td>Marketing Principles (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 370. Examination of the nature of markets and of the factors influencing market development and change. Study of the individual consumer's behavior in relation to the selling-buying process.</td>
</tr>
<tr>
<td>371. (156.)</td>
<td>Consumer Behavior (3) I, II</td>
<td></td>
<td>Prerequisites: 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.</td>
</tr>
<tr>
<td>373. (153.)</td>
<td>Advertising Principles (3) I, II</td>
<td></td>
<td>Prerequisites: 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.</td>
</tr>
<tr>
<td>374. (161.)</td>
<td>Traffic Management (3) I</td>
<td></td>
<td>Prerequisites: Economics 121 or 304. Organization and functions of a traffic department, routing policy on shipments, freight rates and classifications, receiving and shipping, loss and damage claims, warehousing, packing and loading, documentation, export and import shipments, government regulations.</td>
</tr>
<tr>
<td>375. (164.)</td>
<td>Purchasing and Buying (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 350 and 370. Policies for purchasing raw materials, parts, supplies and finished goods for manufacturing operations, for commercial uses, and for wholesale and retail resale. Buying procedures, inventory control, vendor relations, legal problems, quality control, financing.</td>
</tr>
<tr>
<td>376. (165.)</td>
<td>International Marketing (3) I</td>
<td></td>
<td>Prerequisites: 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.</td>
</tr>
<tr>
<td>380. (185.)</td>
<td>Automated Management Information Systems (3) I, II</td>
<td></td>
<td>Prerequisites: Business Administration 370. Prerequisites: Economics 142 or Mathematics 119. Concepts and techniques for the design, development, and implementation of EDP-based management information systems to improve decision making.</td>
</tr>
<tr>
<td>381. (182.)</td>
<td>Consumer Income Management (3) I</td>
<td></td>
<td>Prerequisites: Business Administration 380. Economics 142 or Mathematics 119. Determinants and principles of consumer income management as they apply to the budgeting process; interrelationship of personal, equipment, and services; emphasis on quantitative and qualitative aspects of income systems.</td>
</tr>
</tbody>
</table>
458. (148.) Management Decision Games (1-3) I, II
Prerequisite: Consent of instructor.
Integrated managerial decision making within a dynamic environment through the use of business games.

459. (149.) Business Policy (3) I, II
Prerequisites: Senior standing and consent of instructor.
Formulation and administration of policy; integration of the various specialties in business; development of overall management viewpoint.

460. (136.) Quality Control (3) I, II
Prerequisites: Business Administration 301 and 360.
Techniques for planning and controlling quality of produced and purchased items; emphasis on statistical and quantitative methods particularly applicable to quality, reliability, and maintainability.

461. (137.) Systems and Methods Analysis (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Business Administration 360.
Examination of systems approach as applied to methods analysis and work measurement.

462. (138.) Operations Planning and Control Systems (3)
Prerequisites: Business Administration 301 and 360.
Problems in the design of single- and multiple-product integrated production and inventory control systems. Detailed and aggregate scheduling of operations under deterministic and stochastic demand conditions.

463. (192.) Advanced Quantitative Methods (3)
Prerequisite: Business Administration 302.
The derivation and application of management science techniques to management decision making. Simulation of static and dynamic models. Development of advanced linear and nonlinear programs.

464. (193.) Management Science (3)
Prerequisite: Business Administration 463.
Study of current applications of operations research techniques to the solution of business and industrial problems. Readings, projects, cases, and field work as appropriate.

470. (157.) Marketing Research (3) I, II
Prerequisites: Business Administration 301 and 370.
Basic research techniques and analysis for marketing decisions; principles of decision making.

471. (158.) Marketing Research Laboratory (1)
Three hours of laboratory.
Prerequisite: Business Administration 470.
Applications of market research techniques to selected topics. Uses and limitations of various methods of analysis. Orientation and use of computer center is included.

472. (160.) Advertising Management (3)
Prerequisites: Business Administration 371 and 373.
The management of the advertising and sales promotion function.

473. (165.) Sales Management (3) I, II
Prerequisite: Business Administration 370.
Consideration of the structure of sales organization; sales policies; selection, training, compensation, evaluation and control of the sales force; sales analysis; sales quotas; sales costs and budgets; markets and product research and analysis; coordination of personal selling with other forms of sales effort.

474. (162.) Industrial Marketing (3) I, II
Prerequisites: Business Administration 350 and 370.
Study of industrial products and services and how they are marketed; classifications of industrial products and customers; buying procedures; applications of marketing research; analysis of industrial product planning; industrial channels of distribution; industrial promotion applications and pricing practices.

475. (154.) Marketing Problems (3) I, II
Prerequisite: Business Administration 370.
Complex cases in marketing involving analysis of business situations.

476. (159.) Analysis of Marketing Information (3) I, II
Prerequisites: Business Administration 301 and 370.
The analysis and interpretation of marketing and business information. Decision-making procedures used in conjunction with marketing information.

479. (151.) Marketing Management (3) I, II
Prerequisites: Business Administration 371 and 470.
The managerial aspects of marketing. The development of marketing strategy and plans with the aid of social science concepts. Integrates the specific elements of the marketing function.

480. (166.) Information Storage and Retrieval Systems (3) I, II
Prerequisite: Business Administration 380.
Systems for abstracting, storing, and retrieving information with automated equipment.

481. (187.) Advanced Programming Techniques (3) I, II
Prerequisite: Business Administration 380.
Software packages utilized in EDP systems in business.

482. (188.) Data Processing Practicum (3) I, II
Prerequisites: Business Administration 301, 480, 481.
Fundamentals of systems flow charting and computer programming; computer applications to typical automated data processing problems.

496. (195.) Selected Topics in Business Administration (1-3) I, II
Prerequisite: Consent of Dean of School of Business Administration.
Selected areas of concern in business administration; topic to be listed in class schedule. May be repeated with new content with consent of Dean of School of Business Administration. Maximum credit six units.

498. (198.) Investigation and Report (1-3) I, II
Prerequisites: Senior standing and consent of instructor.
May be repeated with new content. Maximum credit six units.
A comprehensive and original study of a problem connected with business under the direction of one or more members of the business administration staff.

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

GRADUATE COURSES
Classified graduate standing is a prerequisite for all 600- and 700-numbered courses.

600. (200.) Financial Accounting (3)
Basic concepts and principles of financial accounting; accounting as a data processing system; measurement of business income; financial statements.

601. (201.) Organization Theory (3)
The business organization viewed as a system. Development of organization theory, functions and structure of organizations, control and adaptation, interaction of systems levels and organizational values.

602. (202.) Quantitative Methods I (3)
Measure of central tendency and variation, sampling and various statistical tests such as analysis of variance, F, t, and x^2 tests. Simple and multiple correlation.

604. (204.) Law for Business Executives (3)
Development, significance, and interrelationships of law and business. Analysis of essential aspects of law pertaining to business including materials from the law of contracts, sales, agency, business organizations, property, negotiable instruments, secured transactions. Effects of government regulation of labor and business.

605. (205.) Marketing (3)
The marketing activities of a firm in relation to management and society. Application of economic theory to marketing institutions and functions. Not open to students with credit for Business Administration 370.
609. (209.) Computer Programming and Systems Analysis (3)
Prerequisite: Business Administration 602.
Fundamentals of computers, problem-oriented computer language, flow-charting logic and techniques, analysis of the synthesis of computer-based systems.
610. (208.) Managerial Accounting (3)
Prerequisite: Business Administration 600.
Accounting in relation to the decision-making process; various cost systems; relevancy of various cost concepts; direct costing, flexible budgets, distribution costing; break-even analysis; capital budgeting; and other techniques of management planning and control.
611. (208.B.) Behavior in Organizations (3)
Prerequisite: Business Administration 601.
Nature of the human resource in organizations. Analysis of organizational systems and managerial actions to direct and control human behavior.
612. (208.B.) Quantitative Methods II (3)
The design of statistical experiments and various operation research techniques such as simulation, linear programming, queuing theory, and Markov chain analysis.
615. (205.) Financial Principles and Policies (3)
Prerequisite: Business Administration 600.
Financial and financial institutions as they relate to the firm and the flow of funds. Emphasis on the supply of and demand for capital; principles and tools of business finance; money and capital markets.
616. (206.) Managerial Economics (3)
Prerequisite: Economics 603.
Role of economic theory in management analysis and decision. Study of demand, cost, and supply theories from a business viewpoint.
620. (207.) Research and Reporting (3)
Prerequisite: Business Administration 612.
Principles of research design and data accumulation. The analysis and effective presentation of data related to business and industry.
625. (270.) Seminar in Business Education (3)
Study of some phase of business education, such as administration and supervision; distributive and basic business education; trends in and methods of teaching shorthand and typewriting.
630. (210.) Theory and Analysis of Financial Statements (3)
Prerequisite: Business Administration 600.
The theories, principles, and concepts underlying financial statements; measurement and presentation of enterprise resources, equities, and income in accordance with generally accepted accounting principles; consideration of price level problems.
632. (211.) Advanced Accounting (3)
Prerequisite: Business Administration 630.
Principles and concepts related to the measurement, determination, and presentation of resources, equities, and income of parent and affiliated companies; concepts of fund accounting; specialized reporting for partnership formation, income distribution, and liquidation.
633. (212.) Income Tax Accounting (3)
Prerequisite: Business Administration 600.
Provisions of the federal tax law, including preparation of returns for individuals, partnerships, corporations, estates, trusts; procedures for reporting deficiency assessments, refunds, and other administrative practices.
634. (213.) Auditing (3)
Prerequisite: Business Administration 632.
Critical analysis of the application of auditing principles in verification of financial statements; review of AICPA and SEC bulletins and regulations; consideration of professional ethics, audit standards, procedures, sampling techniques, and report writing; trends and developments in auditing profession.
637. (214.) Seminar in Accounting Information Systems (3)
Prerequisites: Business Administration 610 and 612.
Systems design and related controls. Emphasis on mathematics, statistics, and computers in planning and reporting.
638. (215.) Seminar in Managerial Accounting (3)
Prerequisite: Business Administration 610.
Managerial cost accounting concepts and procedures, including budgetary planning, cost control, advisory functions, measurement of divisional profitability, product pricing, and investment decisions.
639. (219.) Administering Accounting Theory (3)
Prerequisite: Business Administration 632.
Historical development of accounting principles and theory; problems in valuation, income determination, and statement presentation.
650. (222.) Seminar in Business Finance (3)
Prerequisite: Business Administration 615.
Application of principles of finance to current problems in financial management, with emphasis on planning and development of tools for use in decision making. Consideration of case materials, study of the literature, and development of individual student reports.
651. (224.) Seminar in Investments (3)
Prerequisite: Business Administration 615.
Examination of firms from an investment point of view; historical and current developments affecting investment values; sources of information; techniques of analysis; measurement of risks, returns, and investment values.
652. (226.) Seminar in Security Analysis and Portfolio Management (3)
Prerequisites: Business Administration 609 and 651.
653. (227.) Seminar in Quantitative Analysis for Financial Decisions (3)
Prerequisites: Business Administration 609, 612 and 615.
Quantitative techniques and the computer as employed to optimize financial decisions.
654. (228.) Seminar in International Business Finance (3)
Prerequisite: Business Administration 615.
International finance as applied to the business firm.
665. (229.) Seminar in Financial Markets (3)
Prerequisite: Business Administration 615.
Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.
670. (240.) Seminar in Manpower Planning and Staffing (3)
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
Theories and models of manpower planning; inventorying and forecasting of manpower needs and requirements; labor force analysis; recruitment; the staffing process; measurement tools and techniques.
671. (241.) Seminar in Union-Management Relations (3)
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
Interactions of unions and business organizations with emphasis on collective bargaining. Effects on management and society. Trends in collective bargaining and in the organization of employees.
672. (242.) Seminar in Compensation (3)
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
The organizational process of compensating employees. Compensation theory from economics, psychology, and sociology. Compensation systems and their effects on organizations and individuals.
673. (243.) Seminar in Organizational Development (3)
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
The process of developing human resources and organizations. Theories of organizational development; tools and techniques, analysis of manpower and organizational development programs.
724. (288.) The Entrepreneur (3)
Prerequisite: Business Administration 611.
Examination of the entrepreneurial approach; concepts, theory and techniques of managerial innovation and implementation; analysis of entrepreneurial skills.

725. (284.) Policy Formulation (3)
Prerequisite: Advancement to candidacy and consent of instructor.
Building and maintaining enterprises in our society; determining objectives, developing policies and plans for achievement; measuring and controlling organizational activities; reappraising objectives and policies on the basis of new developments.

726. (285.) Seminar in Business Planning (3)
Prerequisites: Business Administration 601, 605, 615, and nine units in Business Administration courses numbered 630 or above.
Strategic decision making, long-range forecasting, and corporate planning with major emphasis on product-market relationships.

729. (289.) Seminar in Organization and Management (3)
Prerequisite: Business Administration 611.
Analysis of problems in business and other organizations. Organization and decision theory and contemporary developments in management science are emphasized.

740. (216.) Operations Research: Deterministic Systems (3)
Prerequisites: Business Administration 609 and 612.
Mathematical optimization techniques for deterministic systems. Advanced topics in linear programming: nonlinear, dynamic, and integer programming; selected examples of application.

Prerequisites: Business Administration 609 and 612.
Use of probability and statistical decision theory for decision making under conditions of uncertainty. Markov processes, queuing theory, and the theory of games.

742. (218.) Computer Applications in Operations Research (3)
Prerequisite: Business Administration 740.
Computer simulation techniques and analysis of complex decision problems. Implementation of optimization algorithms through use of the digital computer.

743. (219.) Seminar in Management Science: Theory (3)
Prerequisite: Business Administration 740.
Examination of recent developments in management science/operations research theory and methodology.

744. (220.) Seminar in Management Science: Application (3)
Prerequisite: Business Administration 740.
Quantitative techniques for managerial planning and decision making. Applications of operations research and other concepts to industrial situations.

745. (221.) Quantitative Forecasting and Planning (3)
Prerequisite: Business Administration 740 or 741.
Mathematical approach to intermediate and long-range forecasting of economic and technological variables which affect the firm. Development of solution algorithms and heuristic procedures for solution of dynamic planning problems.

746. Applied Multivariate Statistics for Business (3)
Prerequisite: Business Administration 612.
Applications of various multivariate techniques such as factor analysis, multiple regression, judgment analysis, hierarchical grouping, multiple discriminant analysis, multivariate analysis of variance, canonical correlation.

749. Seminar in Applied Behavioral Measurement (3)
Prerequisite: Business Administration 602 and 611.
Measurement procedures useful in analyzing such areas as leadership, job satisfaction, attitudes, motivation, etc. Development and use of scaling strategies including Likert, Thurstone, Guttman, paired comparison, forced-choice, semantic-differential, and review of existing instruments used in business-related settings.
750. (250.) Production and Operations Management (3)
Prerequisite: Business Administration 612.
Theory, concepts and decision analysis related to effective utilization of major factors of production in manufacturing and service industries. Utilizes the system approach to achieve unification of the production elements in terms of both analysis and synthesis. Not open to students who have credit for a basic course in production management.
751. (221.) Methods Engineering and Job Design (3)
Prerequisite: Business Administration 750.
Use of industrial engineering for management decisions—job simplification and motion economy; micromotion analysis, time standards and determination, performance rating, allowances, statistical work measurement, learning curves, formula construction, machine interference and the establishment of production times from standard data.
752. (232.) Quality Control (3)
Prerequisite: Business Administration 750.
Statistical techniques for controlling quality, reliability and maintainability; types of control and limit charts.
753. (233.) Operations Planning and Control Systems (3)
Prerequisite: Business Administration 750.
Analysis and design of single- and multiple-product integrated production and inventory control systems. Combined detailed and aggregate planning of operations with deterministic or stochastic demand over finite and infinite horizon.
754. (234.) Seminar in Production and Operations Management (3)
Prerequisite: Business Administration 750.
Case studies of selected industries, emphasizing integration of the manufacturing and operations functions with the major goals of the organization.
760. (256.) Seminar in Consumer Behavior (3)
Prerequisite: Business Administration 605.
The study of consumer behavior in relation to marketing strategy and the changing environment of business.
761. (257.) Seminar in New Products Marketing (3)
Prerequisite: Business Administration 605.
The study of new products management in relation to planning and implementation of marketing strategy.
762. Seminar in Advertising Management (3)
Prerequisite: Business Administration 605.
Advertising and sales promotion in relation to the planning and implementation of advertising and sales promotion.
763. (258.) Seminar in Sales Management (3)
Prerequisite: Business Administration 605.
Sales management and personal selling decisions and strategies in business organizations.
764. (259.) Seminar in Marketing Price Policy (3)
Prerequisite: Business Administration 605.
Study of pricing strategy and price determination in business organizations.
765. (260.) Marketing Institutions (3)
Prerequisite: Business Administration 605.
An analysis of the development of wholesaling and retailing and of growth, change, and efficiency of these institutions in the American and other economies.
766. (261.) Market Analysis and Research (3)
Prerequisites: Business Administration 605 and 612.
Application of statistical and mathematical methods to market problems, consumer research, and product analysis.
767. (262.) Seminar in Industrial Marketing Management (3)
Prerequisite: Business Administration 605.
The management of marketing decisions and strategies peculiar to the industrial market.
768. (263.) Seminar in Industrial and Government Procurement Management (3)
Prerequisites: Business Administration 601 and 605.
Procurement methods used in industry and government; internal departmental operations, interrelationships with other departments; supplier selection, pricing/cost analysis; contract negotiations, special characteristics of government procurement.
769. (264.) Seminar in International Marketing (3)
Prerequisite: Business Administration 605.
The impact of cultural, social, political, economic, and other environmental variables on international marketing systems and the decision-making process of multinational marketing operations.
770. (265.) Seminar in Marketing and the Economy (3)
Prerequisite: Business Administration 605.
Advertising, selling, sales promotion, and merchandising as they relate to society, business and the economy.
780. (266.) Principles of Real Estate (3)
Functions and regulation of the real estate market, real estate finance, property management, real estate appraisal theory, specialized properties, urban development, and contemporary real estate problems.
781. (267.) Seminar in Real Estate (3)
Prerequisite: Business Administration 780.
Current problems in real property. Regional land use planning.
782. (268.) Seminar in Real Estate Investment (3)
Prerequisite: Business Administration 780.
783. (269.) Seminar in Real Estate Finance (3)
Prerequisite: Business Administration 780.
Theories and factors governing the financial functions of lenders, borrowers, governmental agencies, and collateral in financing real estate.
784. (270.) Seminar in Valuation of Real Property (3)
Prerequisite: Business Administration 780.
Valuation of real property by the cost, income, and market approaches to value. Evaluation of property taken in eminent domain proceedings, air rights, inverse condemnation, leasehold interests,
790. (290.) Directed Readings in Business Administration (3)
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examination for those students in the M.B.A. program under Plan B.
795. (295.) Seminar in Selected Topics (3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Selected areas of concern in business administration; topic to be announced in the class schedule.
796. (296.) Research (3) Cr/NC
Prerequisite: Consent of staff.
Research in one of the fields of business administration.
797. (297.) Thesis (3) Cr/NC
Prerequisite: Consent of staff.
The subject may be arranged with department chairman and instructor.
798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff.
Individual study. Maximum credit six units.
799A. (299.) Thesis (3) Cr/NC
Prerequisite: Consent of staff.
Preparation of a project or thesis for the master's degree.
799B. Thesis Extension (0) Cr/NC
Prerequisite: Consent of staff.
Preparation of a project or thesis for the master's degree.
799C. Thesis Extension (0) Cr/NC
Prerequisite: Consent of staff.
Preparation of a project or thesis for the master's degree.
Chemistry
In the College of Sciences
The department is on the approved list of the American Chemical Society.

Faculty
Emeritus: Joseph, Robinson, Rowe, Wicks
Professors: Abbott, Bennett, Cobble, Golding, Grubb, Harrington, Hellberg, Isensee, Jensen, Jones, Landis, Malik, Mathewson, O'Neal, Richardson, Ring, Roeder, Sharts, Spangler, Stewart, Wadsworth (Chairman), Waltha, Woodson
Associate Professors: Coffey, Malley
Assistant Professor: Dahms

Offered by the Department
Doctor of Philosophy degree in chemistry.
Master of Arts degree in chemistry.
Master of Science degree in chemistry.
Major in chemical physics with the B.S. degree in applied arts and sciences.
Major in chemistry with the B.S. degree in applied arts and sciences with the Certificate of the American Chemical Society.
Major in chemistry with the A.B. degree in applied arts and sciences, with or without the Certificate of the American Chemical Society.
Minor in chemistry.
Single subject teaching credential in physical sciences in the area of chemistry.

Chemical Physics Major
With the B.S. Degree in Applied Arts and Sciences
Preparation for the major. Chemistry 200A-200B or 204A-204B, 231 and 251; Mathematics 150, 151 and 152; Physics 195A-195B-195C. (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 prepolitical 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. Provision is made for students taking the chemistry major in liberal arts and sciences to obtain the A.B. degree with or without the Certificate.

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 basically 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 200A-200B, 231, 237, and 251; Mathematics 150, 151, and 152; and Physics 195A-195B-195C. (44 units)

Major. A minimum of 36 upper division units to include Chemistry 410A-410B, 431, 437, 520A, 550, 457A-457B, 560A, one unit of 498, and 12 units of upper division electives in chemistry or in related subjects with approval of the department.

Foreign language requirement. German 208 or Russian 208.

OUTLINE FOR THE B.S. DEGREE AND CERTIFICATE

<table>
<thead>
<tr>
<th>Units</th>
<th>1st</th>
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<tr>
<td>1st year</td>
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<tr>
<td>Chemistry 200A-200B</td>
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<td>Physical Activities</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 200A-200B, 231, 237, and 251; Mathematics 150, 151, and 152; and Physics 195A-195B-195C. (44 units)

Major. A minimum of 24 upper division units in chemistry to include Chemistry 410A-410B, 431, 437, 520A, 550, 457A-457B, 560A, one unit of 498, and 12 units of upper division electives in chemistry or in related subjects with approval of the department.

Foreign language requirement. German 208 or Russian 208.

* Refer to catalog section on General Education requirements.
† Students eligible to take Mathematics 110 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 electives.
§ Premedical and prepolitical students will also take Biology 100, and decrease general elective units by 1.
OUTLINE FOR THE A.B. DEGREE AND CERTIFICATE

First year

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<tr>
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<td>Chemistry 200A-200B</td>
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<td>Chemistry 231-431</td>
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With the A.B. Degree in Liberal Arts and Sciences

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

Chemistry Major

With the A.B. Degree in Applied Arts and Sciences
This plan is designed for only those students who desire the training in a premedical or professional curriculum. This plan cannot be taken by students who intend to become professional chemists or who intend to earn advanced degrees in chemistry or who plan to teach in community colleges. Application for admission to this plan must be made to the department chairman upon achieving Junior class standing. All transfer students with upper division standing must apply before the second semester of work at San Diego State University. With an appropriate choice of electives, graduates can meet the requirements for admission to medical, dental, and pharmaceutical schools.

Preparation for the major. Chemistry 200A-200B, 231, 237, 250 (or 251); Physics 195A-195B; Mathematics 104, 140 (unless exempted by examination), 150, 151, and Biology 100, 100L (46 units).

Major. A minimum of 24 upper division units in chemistry to include Chemistry 310A-310B, 317, 431, 577; and eight units of upper division electives in chemistry. Chemistry 361A-361B or 560A-560B is recommended for all premedical students.

Minor. A minor in biology or zoology is expected for preprofessional students.

Chemistry Placement Examination

All students who plan to enroll in Chemistry 200A or 204A and who have not completed Chemistry 200A 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 200A 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. Provision 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 64 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

100A. (24) Introductory General Chemistry (3) I, II
Two lectures and three hours of laboratory.
Elementary principles of chemistry. Not open to students with credit in Chemistry 200A.

100B. (28) Elementary Organic Chemistry (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Chemistry 100A or 200A.
Introduction to the compounds of carbon including both aliphatic and aromatic substances. Not open to students with credit in Chemistry 200B or 201.

101A-101B. (74-78) Chemical Principles for the Environment (3-3) I, II
Two lectures and two hours of discussion.
Prerequisite: Chemistry 100B, 101A, 230, or 231 is prerequisite to 101B.
Semester I: Nuclear structure, atomic structure, chemical bonding, organic chemistry. Environment topics include nuclear power, thermal pollution, radiation hazards, ecosystems, ecospHERE, energy balances, chemical pollution, biodegradation, water purification, and sewage.

Semester II: Natural products such as steroids, alkaloids, and terpenes; biochemistry; catalysis and enzymes; thermostability and metals. Environment topics include contraceptives, chemotherapy, marijuana, addiction drugs, pesticides, nerve gases, fluoridation, corrosion, metal pollutants, and food additives.

250. (4.) Techniques of Analytical Chemistry (5) I, II
Three lectures and six hours of laboratory.
Prerequisite: Chemistry 200B or 201.
Fundamentals of gravimetric, volumetric and instrumental methods of chemical analysis. Not applicable to B.S. and A.B. degrees and Certificate of the American Chemical Society for chemistry majors. Not open to students with credit in Chemistry 251.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

397. (135) CHEM Study (3) II
One lecture and six hours of laboratory.
Prerequisite: Chemistry 200B.
New approach to the study of major concepts of chemistry. Based on lecture and laboratory materials prepared by the Chemical Education Materials Study Committee. Open only to secondary school teachers or candidates.

310A-310B. (109A-109B.) Fundamentals of Physical Chemistry (3-3)
Prerequisites for 310A: Chemistry 250, Mathematics 122, and Physics 124A or 125A, and credit or concurrent registration in Mathematics 122 or 150.
Prerequisites for 310B: Chemistry 310A. Not open to students with credit in Chemistry 410A.
Prerequisites for 310B: Chemistry 310A. Not open to students with credit in Chemistry 410B.
Fundamental principles of theoretical chemistry. This course cannot apply to the A.B. and certificate or B.S. major in chemistry.

317. (109C.) Fundamentals of Physical Chemistry Laboratory (2) I
Prerequisite: Chemistry 200B.
Physico-chemical experiments, errors of measurement and technical report writing.

360A-360B. (114A-114B.) Clinical Biochemistry (4-4)
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 230 or 231, and 250 or 251.
Principles of biochemistry and analytical methods applied to blood, urine, and other body fluids. This course cannot apply to the major in chemistry.

Prerequisites: Chemistry 230 or 231, and 250 or 251.
The chemistry of intermediary metabolism and its regulation. Not open to students with credit in Chemistry 560A-560B.
Prerequisites: Chemistry 230 or 231, and 250 or 251.
The chemistry of intermediary metabolism and its regulation. Not open to students with credit in Chemistry 560A-560B.

410A-410B. (116A-116B.) Physical Chemistry (3-3) I, II
Prerequisites: Chemistry 251, Mathematics 122, and credit or concurrent registration in Physics 195C. Not open to students with credit in Chemistry 310A or 310B.
Theoretical principles of chemistry with emphasis on mathematical relations.

431. (112) Organic Chemistry (4) I, II
Three lectures and six hours of laboratory.
Prerequisite: Chemistry 251.
A continuation of Chemistry 251.

437. (113) Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Open only to students enrolled concurrently in Chemistry 431.
The theory and practice of laboratory operations.
457A-457B. (156A-156B.) 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.
The 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 (1-3)
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.

500A-500B. (160A-160B.) Principles of Chemical Engineering (3-3)
(Same course as Engineering 540A-540B.)
Prerequisite: Credit or concurrent registration in Engineering 304 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.

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.

510. (118.) Advanced Physical Chemistry (3) I
Prerequisite: Chemistry 410B.
Mathematical tools essential to solving problems in chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.

520A. (127A.) Inorganic Chemistry (3) I, II
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
The physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond.

520B. (127B.) Inorganic Chemistry (3) I, II
Prerequisite: Chemistry 520A.
An advanced systematic study of representative and transition elements and their compounds.

530. (131.) Theoretical Organic Chemistry (3) I, II
Prerequisites: Chemistry 310A or 410A, and 431.
The application of modern electronic theory to the physical and chemical properties of organic compounds.

537. (154.) Organic Qualitative Analysis (3) I
One lecture and six hours of laboratory.
Prerequisites: Chemistry 431 and credit or concurrent registration in Chemistry 310A or 410A.
The identification of organic compounds and mixtures.

550. (153.) Advanced Instrumental Methods (2) I, II
Prerequisites: Chemistry 431 and credit or concurrent registration in Chemistry 410B. Advanced theory of chemical instrumentation.

560A-560B. (166A-166B.) General Biochemistry (3-3)
Prerequisites: Chemistry 310B or 410B, and 431.
The structure, function, metabolism, and thermodynamic relationships of chemical entities in living systems. Not open to students with credit in Chemistry 361A-361B.

577. (170.) Radiochemical Analysis (4) II
Two lectures and six hours of laboratory.
Prerequisite: Chemistry 310A or 410A.
Principles and techniques of radioactivity applied to the various fields and problems of chemistry. Instrumentation, tracer application, activation analysis, nuclear reactions and radiolysis.

Graduate Courses

710. (210.) Advanced Topics in Physical Chemistry (1-3)
Prerequisite: Consent of instructor.
Selected topics in physical chemistry. Maximum credit six units applicable on a master's degree.

711. (211.) Chemical Thermodynamics (3)
Prerequisite: Chemistry 410B.
Chemical thermodynamics and an introduction to statistical thermodynamics.

712. (212.) Chemical Kinetics (3)
Prerequisite: Chemistry 410B.
Theory of rate processes; applications of kinetics to the study of reaction mechanisms.

713. (213.) Quantum Chemistry (3)
Prerequisite: Chemistry 410B.
Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory.

714. (214.) Molecular Structure (3)
Prerequisite: Chemistry 410B.
Theory and techniques used in the determination of molecular structure.

720. (220.) Advanced Topics in Inorganic Chemistry (1-3)
Prerequisite: Chemistry 520A.
Selected topics in inorganic chemistry. Maximum credit six units applicable on a master's degree.

721. (221.) Mechanisms of Inorganic Reactions (3)
Prerequisite: Chemistry 520A.
Mechanisms in inorganic reactions with an emphasis on coordination chemistry.

722. (222.) Chemistry of the Nonmetals (3)
Prerequisite: Chemistry 520A.
An advanced systematic study of the nonmetallic elements and their compounds.

730. (230.) Advanced Topics in Organic Chemistry (1-3)
Prerequisite: Chemistry 431.
Selected topics in organic chemistry. Maximum credit six units applicable on a master's degree.

731. (231.) Mechanisms of Organic Reaction (3)
Prerequisites: Chemistry 410B and 431.
Reactivity and mechanism in organic reactions.

732. (232.) Advanced Organic Chemistry (3)
Prerequisite: Chemistry 431.
Applications and limitations of organic reactions from the viewpoint of synthesis.
760. (259) Advanced Topics in Analytical Chemistry (1-3)
Prerequisite: Chemistry 410B.
Selected topics from the field of analytical chemistry. Maximum credit six units applicable
on a master's degree.
760. (260) Advanced Topics in Biochemistry (1-3)
Prerequisite: Chemistry 560B.
Selected topics in biochemistry. Maximum credit six units applicable on a master's degree.
762. (262) Enzymology (2)
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
Theory and techniques used in the study of the mechanism of action of enzymes.
767. (261) Advanced Biochemical Techniques (2)
Prerequisite: Chemistry 560A.
Six hours of laboratory. Theory and practice of current research techniques in biochemical
research.
770. (270) Nuclear Chemistry (2)
Theoretical applications of radioactivity to chemistry, radiation chemistry, decay laws and
processes, nuclear structure and reactions.
790. (200) Seminar (1-3)
An intensive study in advanced chemistry, topic to be announced in the class schedule.
Maximum credit six units applicable on a master's degree.
791. (291) Research Seminar (1)
Prerequisite: Consent of department chairman.
Discussions on current research by students, faculty, and visiting scientists. Each student
will make a presentation based on the current literature.
792. (290) Bibliography (1)
Exercise in the use of basic reference books, journals, and specialized bibliographies,
preparatory to the writing of a master's project or thesis.
797. (297) Research (1-3) Cr/NC
Prerequisite: Consent of instructor.
Research in one of the fields of chemistry. Maximum credit six units applicable on a
master's degree.
798. (298) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.
799A. (299) Thesis (3) Cr/NC
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A
in which the student expects to use the facilities and resources of the university; also student
must be registered in the course when the completed thesis is granted final approval.
897. Doctoral Research (3-6) Cr/NC
Prerequisite: Admission to the doctoral program.
Independent investigation in the general field of the dissertation.
899. Doctoral Dissertation (3-6) Cr/NC
Prerequisites: An officially constituted dissertation committee and advancement to
candidacy.
Preparation of the dissertation for the doctoral degree.

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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

101. (1.) Elementary (4) I
Four lectures and one hour of laboratory.
Pronunciation, oral practice, readings on Chinese culture and civilization, minimum
essentials of grammar.

102. (2.) Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Chinese 101.
Continuation of Chinese 101.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

303. (103.) Readings in Contemporary Chinese (4) I
Prerequisite: Chinese 202.
Readings in contemporary authors: poetry, short stories, essays.

304. (104.) Readings in Classical Chinese (4) II
Prerequisite: Chinese 303.
Readings from Hsiao Ching, Mencius, Confucian Analects, 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, 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.
Classical and Oriental Languages and Literatures
In the College of Arts and Letters

Faculty
Emerita: Burnett
Professors: Schaber (Chairman), Warren
Associate Professors: Eisner, Genovese
Assistant Professors: Gefter, Woo
Lecturers: Bussoo, 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, Warren
Associate Professors: Eisner, Genovese

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 64 of this catalog.
A minor is not required with this major.

Concentration in Classical Humanities
Preparation for the major. Greek 101 and 202, or Latin 101 and 202. (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.
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); nine units from classics, Anthropology 578, Art 567, 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. Greek 101 and 202, or Latin 101 and 202. (10 units.)
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, Greek, or Latin.

Concentration in Two Languages
Preparation for the major. Greek 101, 202, and Latin 101, 202. (20 units.)
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 567, Comparative Literature 220A, History 105A, 500A, 500B, Philosophy 301, Religious Studies 310, or Speech Communication 350. Students should note that a number of the 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 or general education.

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 or general education.
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 64 of this catalog. No more than 48 units in comparative literature and English courses can apply to the degree.

A minor is not required with this major.

Preparation for the major. Any two lower division courses in comparative literature.

Major. A minimum of 24 upper division units to include 18 units in comparative literature courses. With the approval of the advisor, 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 language 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 courses. 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 or general education.

LOWER DIVISION COURSES

Since all reading assigned for classes in comparative literature is in English, knowledge of a foreign language is not required.

200. (90.) Topics in Comparative Literature (3) I, II

An introduction to the subject matter of comparative studies in literature. Focus on a specific movement, theme, genre, etc. May be repeated with new content. Maximum credit six units.

270A-270B. (52A-52B.) World Literature (3-3) I, II

Selected works from various continents and cultures. Semester I: prior to 1500; Semester II: since 1500.

271A-271B. (70A-70B.) Asian Literature (3-3)

A survey of the literature of Asia. Semester I: traditional literature; Semester II: modern literature.

272A-272B. (86A-86B.) Third World Literature (3-3)

Modern literature from Third World cultures. Semester I: Literature from Africa, Asia, and Latin America; Semester II: Literature by ethnic minorities in the U.S.

UPPER DIVISION COURSES

490. (190.) Literary Movements (3) Cr/NC

A movement or theme in world literature—such as symbolism, realism, existentialism, alienation, or revolution. Maximum credit six units.

495. (195.) Literature and Other Disciplines (3) Cr/NC

Comparative study of relationship between literature and another field, such as art, music, philosophy, psychology, political science, or social science. Examples: novel and film, black literature and black music, theatre and politics. May be repeated with new content. Maximum credit six units.
Courses:

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

505. (195.) The Bible as Literature (3) I, II
Same course as English 505.
Prerequisite: Consent of instructor.

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.

515. (127.) 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; intercontinental 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, Dostoevsky 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
In the College of Professional 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 64 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.

Candidency 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

301. (46.) Administration of Justice (3) I, II
Prerequisite: Public Administration 301 or Political Science 546 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.

495. (113.) Selected Topics in Criminal Justice Administration (3)
Selected current topics in criminal justice administration. Maximum credit six units.
799A. Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master’s degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Drama
In the College of Professional Studies

Faculty
Emeritus: Povemire, Sellman
Professors: Amble, Howard, Powell, Stephenson (Chairman)
Associate Professors: Harvey, Lessley, Owen
Assistant Professors: Annas, McKerrow
Lecturer: Bellinghier

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 page 64 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 to include Drama 540A, 540B, 548, 552A, Telecommunications and Film 450, 520, 550, and 460 or 581.

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.
The minor in the minor may not be counted toward the major or general education.

Drama
For the Single Subject Teaching Credential in English
All candidates for a teaching credential must complete all requirements for the applicable specialization 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. (55.) 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.
Lessons 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 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.
Continuation of Drama 130, emphasizing the application of fundamental skills to the problems of emotion, timing, characterization, and ensemble 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 theatre production.

231. (31.) Intermediate Acting (3) I, II
Three lecture-demonstrations per week and 30 hours of laboratory per semester.
Prerequisite: Drama 105.
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 of 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

299. (59.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (100.) Management of Drama Activities (3) I, II
Planning, preparation, management and supervision of drama tournaments, festivals and other interscholastic and intrascholastic activities under the supervision of the drama staff. Maximum credit two units.

310. (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 231.
Staging and technical problems related 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) I
Nine hours of laboratory.
Prerequisites: Drama 231 and consent of instructor.
Staging 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 child 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) I, II
Prerequisites: Drama 110 and 136.
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 procedures.

490. (180.) Methods and Materials of Instruction (2) I
Professional preparation emphasizing organization and practices in the teaching of Dramatic Arts.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.) Selected Topics in Drama (1-3) I, II
Prerequisite: Twelve units in drama.
A specialized study of selected topics from the areas of drama. May be repeated with new content. Maximum credit six units.

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

511. (111.) Styles in Creative Dramatics (3) I, II
Prerequisite: Drama 310.
Advanced study of the techniques and procedures in the teaching of creative dramatics. Lectures and reading on the application of creative dramatics with emphasis on the different styles of creative dramatics available to the practitioner. Practical experience through work with children.

520. (120.) Play Analysis (3) I, II
Prerequisites: Drama 105 and 120.
Representative dramas for the stage are read, discussed and analyzed in writing in terms of environment, structure, action, character and style.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>521</td>
<td>(122.) Theatre Criticism</td>
<td>3</td>
<td>Drama 520</td>
</tr>
<tr>
<td>522</td>
<td>(122.) Playwriting, the One-Act Play</td>
<td>3, 1, 2</td>
<td>Lectures, discussion and reading of one-act plays written by the students.</td>
</tr>
<tr>
<td>523</td>
<td>(122.) Playwriting, the Long Play</td>
<td>3</td>
<td>Drama 522</td>
</tr>
<tr>
<td>526</td>
<td>(126.) Theory of Production for the Musical Stage</td>
<td>3</td>
<td>Drama 231 and consent of instructor.</td>
</tr>
<tr>
<td>531</td>
<td>(131.) Advanced Acting Theory</td>
<td>3</td>
<td>Drama 130 or 231.</td>
</tr>
<tr>
<td>532</td>
<td>(132.) Advanced Acting</td>
<td>3, 1, 2</td>
<td>The theories and principles of acting.</td>
</tr>
<tr>
<td>537</td>
<td>(137.) High School Play Directing</td>
<td>2</td>
<td>Drama 240 and 557.</td>
</tr>
<tr>
<td>540A</td>
<td>(140A.) Scene Design</td>
<td>3</td>
<td>Drama 240</td>
</tr>
<tr>
<td>540B</td>
<td>(140B.) Styles in Scene Design</td>
<td>3</td>
<td>Drama 540A</td>
</tr>
<tr>
<td>545A-545B</td>
<td>(145A-145B.) Stage Lighting</td>
<td>3-3, 1, 2</td>
<td>Two lectures and three hours of laboratory.</td>
</tr>
<tr>
<td>546</td>
<td>(148.) Advanced Dramatic Production</td>
<td>3</td>
<td>Drama 240</td>
</tr>
<tr>
<td>551</td>
<td>(151.) Costume, Movement, and Manners</td>
<td>3</td>
<td>Drama 250</td>
</tr>
<tr>
<td>552A-552B</td>
<td>(152A-152B.) Costume History and Design for the Theatre</td>
<td>3-3, 1, 2</td>
<td>Two lectures and three hours of laboratory.</td>
</tr>
<tr>
<td>554</td>
<td>(154.) Costume Construction Techniques</td>
<td>3</td>
<td>Two lecture-demonstrations and three hours of laboratory.</td>
</tr>
<tr>
<td>557</td>
<td>(157.) Stage Direction</td>
<td>3, 1, 2</td>
<td>Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.</td>
</tr>
<tr>
<td>559</td>
<td>(159.) Stage Direction: One-act Plays</td>
<td>3, 1, 2</td>
<td>One lecture and six hours of laboratory; attendance of one-act plays and selected performances.</td>
</tr>
<tr>
<td>555</td>
<td>(155.) Costume Construction Techniques</td>
<td>3</td>
<td>Two lecture-demonstrations and three hours of laboratory.</td>
</tr>
<tr>
<td>556</td>
<td>(156.) Stage Direction: Scenes</td>
<td>2, 1, 2</td>
<td>One lecture and three hours of laboratory; attendance of one-act plays and selected performances.</td>
</tr>
<tr>
<td>557</td>
<td>(157.) Stage Direction: Costumes</td>
<td>3, 1, 2</td>
<td>Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.</td>
</tr>
<tr>
<td>558</td>
<td>(158.) Stage Direction: Sets</td>
<td>3, 1, 2</td>
<td>Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.</td>
</tr>
<tr>
<td>559</td>
<td>(159.) Stage Direction: Monologues</td>
<td>3, 1, 2</td>
<td>Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.</td>
</tr>
<tr>
<td>560A-560B</td>
<td>(160A-160B.) History of the Theatre</td>
<td>3, 3</td>
<td>The theatre from primitive times to the present. Special attention will be given to the theatre as a mirror of the social and cultural background of the various countries and periods in which it is studied. Drama 560B may be taken without 560A.</td>
</tr>
<tr>
<td>578</td>
<td>(178.) Directing the Period Play</td>
<td>3</td>
<td>Two lectures and three hours of laboratory.</td>
</tr>
<tr>
<td>554</td>
<td>(154.) Costume Construction Techniques</td>
<td>3</td>
<td>Two lecture-demonstrations and three hours of laboratory.</td>
</tr>
</tbody>
</table>

**GRADUATE COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>(200.) Research and Bibliography</td>
<td>3</td>
<td>Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to the various areas of speech. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.</td>
</tr>
<tr>
<td>635</td>
<td>(225.) Seminar in Children's Theatre</td>
<td>3</td>
<td>Prerequisites: Drama 310 and 315. Modern developments and trends in children's theatre in educational, civic, and professional programs in the United States and England.</td>
</tr>
<tr>
<td>643</td>
<td>(243.) Seminar in Staging Practices for Theatre and Television</td>
<td>3</td>
<td>An investigation of the recent developments of modern staging facilities. The application of technological advances and electromechanical devices to the scenic arts for theatre and television.</td>
</tr>
<tr>
<td>644</td>
<td>(244.) Seminar in Stage Direction</td>
<td>3</td>
<td>Prerequisite: Drama 557. Projects in the aesthetic principles and the practices of stage direction with an emphasis on styles and historic periods.</td>
</tr>
<tr>
<td>645</td>
<td>(245.) Seminar in Lighting for Stage and Television</td>
<td>3</td>
<td>Prerequisite: Drama 545A or 545B. Projects concerned with the aesthetic and technical problems of stage lighting.</td>
</tr>
</tbody>
</table>
646. (246.) Seminar in Design for Stage and Television (3)
The principles of design in the theatre with an emphasis on the historical development of theatrical costume or scenic environment. The investigation of recent tendencies in styles and their evolution. Each section may be taken once for credit.
A. Costume Design
Prerequisite: Drama 552A or 552B.
B. Scenery Design
Prerequisite: Drama 540B or 548.

647. (247.) Seminar in History of Theatre and Drama (3)
Prerequisites: Drama 520, 560A, and 560B.
A. British and Continental Theatre
B. American Theatre

648. (248.) Seminar in Dramatic Theory (3)
Prerequisites: Drama 520, 560A, 560B, and 560.
Problems in producing works of such playwrights as Ibsen, Strindberg, Chekhov, Shaw. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units applicable on a master's degree.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
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 433.

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-monetary policy, tax reform and government controls and provision of services.

120. (14) Principles of Economics (3) I, II
An introduction to principles of economic analysis, economic institutions, and issues of public policy. In this semester the emphasis is upon microanalysis including national income analysis, money and banking, business cycles, and economic stabilization. Not open to students with credit in Economics 303.

121. (1/8) Principles of Economics (3) I, II
An introduction to principles of economic analysis, economic institutions, and issues of public policy. In this semester the emphasis is upon microanalysis including national income analysis, money and banking, business cycles, and economic stabilization. Not open to students with credit in Economics 303.

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. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

Note: Wherever Economics 120 (303) is listed as a prerequisite, Economics 320 (324) satisfies the requirement; wherever Economics 121 (304) is listed as a prerequisite, Economics 321 (325) satisfies the requirement.

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

303. (103/) 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 majors.

304. (103/) 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. (103/) History of Economic Thought (3)
Prerequisites: Economics 120 (303) and 121 (304).

The development of economics. Contributions of thought of 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. (100/) 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. (100/) 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. (104/) Macroeconomic Analysis (3)
Prerequisite: 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. (104/) Microeconomic Analysis (3)
Prerequisites: Economics 120 (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)
Prerequisites: Economics 120 (303) or 121 (304) or 103.

The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism, communism, nazism, fascism. Criteria for evaluating economic systems. The individual and government in each system. Planning in a liberal capitalistic 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)
Prerequisites: 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. (116/) 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.

338A-338B. (111A-111B/) Economic History of the United States (3-3)
Prerequisites: 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 592.

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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>370</td>
<td>Government and Business</td>
<td>3</td>
<td>Economics 103 or 121 (304).</td>
<td>Governmental activities affecting business; the state as an entrepreneur and manager; governmental assistance to business; governmental regulation of business in its historical, legal and economic aspects, including recent developments in the United States and abroad; proposed policies.</td>
</tr>
<tr>
<td>380</td>
<td>Labor Problems</td>
<td>3</td>
<td>Economics 103, 120 (303), or 121 (304).</td>
<td>Economic aspects of poverty and racial discrimination. Relation to poverty in the general economic structure and to macroeconomic conditions such as unemployment and inflation. Possible solutions.</td>
</tr>
<tr>
<td>385</td>
<td>Public Finance</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>Fiscal policy and prosperity. Relation to inflation and deflation. Special emphasis on social problems involved.</td>
</tr>
<tr>
<td>390</td>
<td>Business Cycles</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>Fundamental factors in economic fluctuations. Examination of business cycle theories, and various policy proposals for economic stabilization. A consideration of current economic conditions and an examination of methods employed in preparing national economic forecasts.</td>
</tr>
<tr>
<td>395</td>
<td>Policies for Macroeconomic Stabilization</td>
<td>3</td>
<td>Economics 120 or 303.</td>
<td>Fiscal tools, economic surplus, and zero GNP growth.</td>
</tr>
<tr>
<td>397</td>
<td>Quantitative Economics</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304), and Mathematics 150.</td>
<td>The quantitative approach to economic problems. The use of mathematics in economic analysis.</td>
</tr>
<tr>
<td>398</td>
<td>Economics and Ecology</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>Examination of the economic conditions of urban and nonurban areas; specific urban problems including housing, land use, and growth. Discussion of San Diego problems.</td>
</tr>
<tr>
<td>399</td>
<td>Economics of the Ocean</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>Economic analysis of fisheries, seabed resources, shipping lanes, allocation of the coastal zone, and ocean pollution. Economic implications of alternative legal arrangements concerning the ocean.</td>
</tr>
<tr>
<td>400</td>
<td>Urban and Regional Economics</td>
<td>3</td>
<td>Economics 120 and 121, or 303 and 304.</td>
<td>Major influences on the economic conditions of urban and nonurban areas; specific urban problems including housing, land use, and growth. Discussion of San Diego problems.</td>
</tr>
<tr>
<td>460</td>
<td>Economic Problems of Latin America</td>
<td>3</td>
<td>Economics 120 (303) or 121 (304) or 103.</td>
<td>Economic development, institutions, and problems of Latin America.</td>
</tr>
<tr>
<td>465</td>
<td>Economic Problems of South and East Asia</td>
<td>3</td>
<td>Economics 120 (303) or 121 (304) or 103.</td>
<td>Economic development, institutions, and problems of China, India and Pakistan, Japan, and Southeast Asia.</td>
</tr>
<tr>
<td>468</td>
<td>The Economics of the Soviet Union and Eastern Europe</td>
<td>3</td>
<td>Economics 120 (303) or 121 (304) or 103.</td>
<td>Economic development, institutions, and problems of the Soviet and East European economies.</td>
</tr>
<tr>
<td>469</td>
<td>Economic Problems of Africa and the Middle East</td>
<td>3</td>
<td>Economics 120 (303) or 121 (304) or 103.</td>
<td>Economic development, institutions, and problems of Africa and the Middle East.</td>
</tr>
<tr>
<td>474</td>
<td>Economic Concentration and Monopoly Power</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>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.</td>
</tr>
<tr>
<td>475</td>
<td>Industry Studies</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>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.</td>
</tr>
<tr>
<td>477</td>
<td>Transportation Economics</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>Evaluation of the structure, conduct and performance of selected industries in terms of social and economic goals.</td>
</tr>
<tr>
<td>490</td>
<td>Population and Economic Growth</td>
<td>3</td>
<td>Economics 120 (303) or 121 (304) or 103.</td>
<td>The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.</td>
</tr>
<tr>
<td>499</td>
<td>Money and Banking</td>
<td>3</td>
<td>Economics 120 (303) and 121 (304).</td>
<td>The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.</td>
</tr>
<tr>
<td>500</td>
<td>Contemporary Issues</td>
<td>3</td>
<td>Consent of instructor.</td>
<td>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.</td>
</tr>
</tbody>
</table>
499. (199.) Special Study (1-3) I, II
Prerequisite: Consent of instructor.
May be repeated for a maximum of six units; maximum credit in 497 and
499 limited to six units.

502. (182.) Public Economics (3)
Prerequisite: Economics 321 (325) or 401.
General equilibrium. Externalities of consumption and production, their impact on
allocative efficiency. Theory of social wants and public goods supply. Theoretical treatment of the
allocation of resources.

505. (165.) Welfare Economics (3)
Prerequisites: Economics 121 or 304, and 321 (325).
Theories of individual and social well-being; economic and ethical bases of optimum
welfare arrangements; individual values and social decision making; tests of improvement;
interdependence and externalities; public and private sectors; properties of social welfare
functions.

520. (104.) Advanced Economic Theory (3)
Prerequisites: Economics 320 (324) and 447.
Recent contributions to the advanced theory of the firm, consumer demand, employment
and growth.

524. (154.) Capital and Growth Theory (3)
Prerequisites: Economics 320 and 321, or 324 and 325.
Factors affecting the capital supply and the rate of growth of a developed economy.

541. (134.) Econometrics (3)
Prerequisites: Economics 142 and 447.
Measurement in economics. The construction and testing of simple economic hypotheses.
Use of economic models involving multiple-regression analysis.

559. (139.) Location Theory (3)
Prerequisite: Economics 458.
The optimal location of economic activities. The effects of spatial distribution of resources
and markets on the locational equilibrium of the firm.

561. (191.) International Trade Theory (3)
Prerequisites: Economics 320 and 321, or 324 and 325.
The pure theory of international trade and commercial policy.

592. (129.) International Monetary Theory and Policy (3)
Prerequisite: Economics 320 (324) or 490.
Balance of payments, international capital movements and foreign exchange in relation to
current theories and policies.

GRADUATE COURSES

603. (203.) Economic Analysis (3)
Prerequisite: Classified graduate standing.
The theory of the firm in a market economy. Not open to students with credit in
Economics 320 and 321; not applicable toward a master's degree in economics.

606. (206.) The Public Economy (3)
Prerequisite: Economics 401 or Public Administration 550.
Determinants of the supply and demand for public goods; the social decision-making
processes in determining public goods; supply, financing public goods; taxes and
a master's degree in economics.

611. (204A.) Seminar in the Development of Economic Thought (3)
Prerequisite: Twelve units in economics.
A critical study of the development of economic thought.

620. (208B.) Seminar in Advanced Economic Theory (3)
Prerequisites: Economics 320 and 321, or 324 and 325; and 447.
Theory of money, employment, and income determination. Alternative theories of
consumption, investment, price level and rate of interest. Causes of instability in short and
long run.

621. (209B.) Seminar in Advanced Economic Theory (3)
Prerequisites: Economics 320 and 321, or 324 and 325; and 447.
Theory of consumer and producer behavior. Determination of prices and resource
allocation patterns in a market economy; partial and general equilibrium.

630. (202.) Seminar in Comparative Economic Systems (3)
Prerequisite: Economics 330 or 465 or 468.
Topics in comparative economic systems; the Soviet economy, the economy of communist
China, and related subjects.

635. (210.) Seminar in Economic History (3)
Prerequisite: Economics 335 or 338A or 338B.
Individual study and group discussion on selected topics in economic history.

660. (702.) Seminar in International Economics (3)
Prerequisite: Economics 360 or 561.
Resource allocation, income distribution, commercial policies, capital movements, balance
of payments, and international monetary institutions.

665. (305.) Seminar in the Economics of Underdeveloped Countries (3)
Prerequisite: Economics 365.
Theories regarding underdevelopment and policies for development of economically
underdeveloped countries.

680. (250.) Seminar in Labor Economics (3)
Prerequisite: Economics 380 or 482.
Individual study and group discussion of selected topics in labor economics.

701. (231.) Seminar in Public Finance (3)
Prerequisite: Economics 401.
Advanced study of public finance problems and literature; research.

726. (208.) Development Planning (3)
Prerequisite: Economics 365.
The role of government in development. Choice of target and policy variables. Planning
techniques and their application to the national development problems.

741. (211.) Seminar in Econometrics (3)
Prerequisite: Economics 541.
The construction of large economic models. Identification, causal ordering and estimation.
Simultaneous-equation techniques and other selected topics.

758. (238.) Seminar in Urban and Regional Economics (3)
Prerequisite: Economics 458.
Urban and regional economics; individual research and reports.

774. (274.) Seminar in Economic Concentration and Monopoly Power (3)
Prerequisites: Economics 321 (325) and 370, or 474.
Selected topics in the field of economic concentration and monopoly.

777. (272.) Seminar in Utilities and Water Resources (3) Prerequisite: Economics 453 or 477.
Analysis of theoretical issues associated with the demand for money, the money supply and
process of money creation. Emphasis upon interaction of monetary and real factors in
domestic-international money and financial markets.

796. (290.) Bibliography (1)
Exercises in the use of basic reference books, journals, and specialized bibliographies,
preparatory to the writing of a master's thesis.
797. Research (3) Cr/NC
Prerequisites: Classified graduate standing and consent of instructor.
Independent research project in an area of economics.

798. Special Study (1-3) Cr/NC
Prerequisite: Consent of staff, to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master’s degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A
in which the student expects to use the facilities and resources of the university; also student
must be registered in the course when the completed thesis is granted final approval.

Education
In the School of Education
Member of the American Association of Colleges for Teacher Education

Faculty
Dean: Arciniega

Counselor Education
Professors: Bruce, Carnevale, Cummins, Hawley, Malcolm, Miller
Associate Professors: Chamley (Chairman), Howard, Manjos, Thompson
Assistant Professor: McFarlane
Lecturers: Jones, Trujillo

Educational Administration
Professors: Holt (Chairman), Lienert, Wetherill
Associate Professors: Merino, Wurthton

Educational Technology and Librarianship
Associate Professor: Harrison (Chairman)
Assistant Professors: Koller, McAllister, Weir
Lecturer: Sharpe

Elementary Education
Emeritus: Bacon, Campbell, Corbett, Hambrock, L, LuPone, Madden
Associate Professors: Becker, Berg, Botkin, Clark, Cleveland, Elliott, Ford, Kaatz (Chairman), Mason, Melton, Mooers, Moreno, Morris, Murphy, Nagel, Reel, Treadway, Weil
Assistant Professors: Birch, Hill, P., Klann

Secondary Education
Emeritus: Alcorn, Apple, Bradley, Hunter, Kinder, Linley, White, Yarbrough
Professors: Anthony, Becklund, Briggs, Crum, Erickson, Fishburn, Friedrich, Gray, Halflaker, McCoy, Meek, Person, Platt, Prouty, Samuels, Schrump, Smith, H., Smith, R., Stautland (Chairman), Stockbauer
Associate Professors: Bee, Duckworth, Holman, McCabe, McLevie, Morris, Pehrson, Richman, Shaw, Yesselman
Assistant Professors: Altamura, Curry
Lecturers: Fisher, Flood, Waymon

Special Education
Professors: Ballantine (Chairman), McClard, Mitchell, Singer, Trimmer
Associate Professors: Doorlag, Fearn, Forbing

Offered by the School of Education
Master of Arts degree in education with concentrations in eleven areas and a Master of Science degree in counseling. (Described in the Graduate Bulletin. Also refer to the section in this catalog on the School of Education.)
B.V.E. degree. (Described in the section on the School of Education.)
Teaching credentials in all areas. Refer to the section on the School of Education.
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.
Courses in the minor may not be counted toward the major or general education.
Education LOWER DIVISION COURSES

299. (99) Experimental Topics (2-4) Refer to catalog statement on Experimental Topics on page 115. 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 the Honors Program.

375. (128A) Principles of Adult Education (2) History, philosophy, objectives and administration of adult education.

380. (156) Community College Occupational Education (2) Prerequisite: Two years of occupational experience in a community college subject matter area.


385. (169) Directed Teaching (2 or 4) Prerequisite: Education 380, 381 or 565. 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 Historical backgrounds and underlying philosophies upon which the public school system has been established. Meaning of education, educational aims and values, and democracy and education.

397. (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.

484. (184) Directed Teaching: Speech Correction (4) I, II Cr/NC Application to take the course should be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of speech correction.

485. (185) Directed Teaching: Hearing Impaired (4) Cr/NC Application to take the course should be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of hearing impaired.

496. Experimental Topics (2-4) Refer to the catalog statement on Experimental Topics on page 115. 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.

513-S. (190-S) Conference on the Teaching of Mathematics (1) S Lectures, discussions and demonstrations on problems in teaching of mathematics in the elementary and secondary schools. Designed for teachers, supervisors and administrators interested in current developments in this area. Maximum credit three units.

550. Philosophy of Cultural Pluralism in Education (3) Study of culture from a multidisciplinary and holistic perspective provides a thorough understanding of the interaction 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.

565. (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.

Counselor Education

UPPER DIVISION COURSE

506-S. (101-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

349. (149) History of Books and Libraries (3) II Books and libraries from earliest times to the present; their influence on our schools and culture.

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.

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.


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.
Elementary Education

UPPER DIVISION COURSES

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.

310. Seminar in Student Teaching (3) I, II
Prerequisite: Concurrent registration in Elementary Education 407.
Examining the selection and development of teaching materials, teaching methods and materials as they relate to social needs; evaluation procedures; psychological principles and the nature of the learner.

311. Child-Study Skills (2) I, II, S
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, S
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, S
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, S
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, S
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, II
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 effective 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, S
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.

362. (1/2) The Learning Process in the Elementary School (3) I, II, S
Prerequisite: Elementary Education 372.
Psychological principles for effective classroom teaching; techniques of measurement and evaluation for the diagnosis and improvement of learning.

372. (1/1) The Learner in the Elementary School (3) I, II, S
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. (1/2) Kindergarten-Primary Practicum (3) I, II, S
The theory of early childhood education and the materials and teaching techniques used in the kindergarten.

374. (1/1) Guidance in Elementary Education (3) I, II, Irregular
A study of the basic principles of guidance and their function in the educational process as applied in the elementary school.

375. (1/16A-1/6B-1/6C) Child Study Laboratory (1-3) I, II
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 301.
Day-to-day teaching experiences including selected instructional activities for which a teacher in a classroom is normally responsible.
403. Advanced Student Teaching (1-8) 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
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
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 (3) I, II
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, S
Six hours of activity.
Prerequisite: Admission to elementary education.
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, S
Four hours of activity.
Prerequisite: Admission to elementary education.
Selecting, designing and evaluating appropriate learning experiences in handwriting, spelling, oral and written composition, grammar and usage, and listening to assure children's growth in language skills.

413. Teaching Mathematics in the Elementary School (2) I, II, S
Four hours of activity.
Prerequisite: Admission to elementary education.
Procedures for instruction in mathematics and development of materials in elementary mathematics and program development to meet children's needs in understanding the structure of mathematics.

414. Teaching Social Studies in the Elementary School (2) I, II (3) S
Four hours of activity; (summer) three hours of lecture.
Prerequisite: Admission to elementary education.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary social studies education.

415. Teaching Science in the Elementary School (2) I, II (3) S
Four hours of activity; (summer) three hours of lecture.
Prerequisite: Admission to elementary education.
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, S
Four hours of activity.
Prerequisite: Admission to elementary education.
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, S
Four hours of activity.
Prerequisite: Admission to elementary education.
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, S
Six hours of activity.
Prerequisite: Admission to elementary education.
Developing and using instructional materials 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, S
Four hours of activity.
Prerequisite: Admission to elementary education.
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.

512. (188B) Children's Literature in Elementary Education (3) Irregular
A survey of children's literature; the selection and use of material in the elementary classroom.

514. (188B) Social Studies Unit Construction in Elementary Education (3) Irregular
Prerequisite: Elementary Education 414.
Selecting and organizing content, analyzing materials, and developing instructional units in elementary social studies for classroom use.

521. (187) Reading Difficulties (3) I, S
Two lectures and three hours of laboratory.
Prerequisites: Elementary Education 362 and 411, or Secondary Education 531.
Reading difficulties, their causes, prevention and correction; Remedial practices in reading useful to the classroom teacher, school counselor and reading specialist.

561. (117) Teacher Effectiveness Training (2 or 3)
Prerequisites: Psychology 101 and credit or concurrent registration in student teaching.
Skill training in modifying undesirable behavior of individuals or groups, resolving conflicts, solving problems, and fostering improved thinking through group discussion.

562. (117) Measurement and Evaluation in Elementary Education (3) I, II, S
Two lectures and three hours of laboratory.
Prerequisites: Psychology 101 and credit or concurrent registration in student teaching.
The use of intelligence and achievement tests in the diagnosis and improvement of learning; construction of objective examinations; problems of evaluation in education; the elements of statistical techniques.

571. (114S) Interpretation of Early Childhood Behavior (3) Irregular
For kindergarten-primary teachers, treating the analysis and interpretation of early childhood behavior. Emphasis on understanding and interpreting the causative factors in typical behavior of children to parents, social workers, teachers, and others concerned with the guidance of kindergarten-primary children.

596. (115) Workshop in Elementary Education (1-6) Irregular
To meet the needs of individuals or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching will be provided for members in attendance. Interested persons should contact the Coordinator of Elementary Education. May be repeated with new content for more than six units. Maximum credit six units applicable on a master's degree.

Secondary Education

UPPER DIVISION COURSES

376. (128B) Methods and Materials in Adult Education (2)
Identification, selection and utilization of teaching methods, techniques and materials appropriate for adults.

377. (128C) Psychological Foundations of Adult Education (2)
Educational psychology and developmental problems of adults.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>Instructional Media, Equipment and Production (1) Cr/NC</td>
</tr>
<tr>
<td>401</td>
<td>The Teaching Process (3) I, II</td>
</tr>
<tr>
<td>402</td>
<td>Growth and Development of the Adolescent (3) Irregular</td>
</tr>
<tr>
<td>403</td>
<td>Community ISrequired. Relationships, general methods and materials, planning for teaching, and evaluating learning</td>
</tr>
<tr>
<td>404</td>
<td>Behavioral and Psychological Aspects of Teaching (4) I, II</td>
</tr>
<tr>
<td>405</td>
<td>Teaching of Reading in the Secondary School (3) I, II</td>
</tr>
<tr>
<td>406</td>
<td>The Nature of Growth and Development</td>
</tr>
<tr>
<td>408</td>
<td>Methods of Instruction: Major (2) Minor (2)</td>
</tr>
<tr>
<td>410</td>
<td>Student Teaching Seminar (3) I, II Cr/NC</td>
</tr>
<tr>
<td>411</td>
<td>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.</td>
</tr>
<tr>
<td>412</td>
<td>Directed Participation: Secondary (3-3) I, II</td>
</tr>
<tr>
<td>413</td>
<td>Directed Teaching; Secondary (3-3) I, II Cr/NC</td>
</tr>
<tr>
<td>420</td>
<td>Human Relations and Counseling in Adult Education (2)</td>
</tr>
<tr>
<td>422</td>
<td>Workshop in Adult Education (1-3)</td>
</tr>
<tr>
<td>423</td>
<td>Workshop in Secondary Education (1-3 or 6) Irregular</td>
</tr>
<tr>
<td>430</td>
<td>Practicum in Mental Retardation (2) I, II</td>
</tr>
</tbody>
</table>

**Special Education**

**UPPER DIVISION COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>371</td>
<td>Psychology 454</td>
</tr>
</tbody>
</table>
475. (179.) Curriculum and Instruction for Teaching the Deaf (3) II
Prerequisite: Concurrent registration in Education 485.
General elementary curriculum principles, methods and materials of instruction in teaching auditory subjects, including reading, to deaf children. Twenty-six hours observation in programs for the deaf.

482. (182.) Directed Teaching: Mentally Retarded (4) I, II Cr/NC
Application to take the course should be made during the preceding semester.
Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of the mentally retarded.

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.

561. (161.) Measurement and Evaluation in Special Education (4) II
Three lectures and three hours of laboratory.
Prerequisites: Elementary Education 562 or Secondary Education 563; Secondary Education 413; and Psychology 405.
Characteristics and adjustment problems of normal and exceptional children at all levels in the public schools. Concentration will be on the elementary level. (Recommended for students in elementary education.)

562. (162.) Emotionally Disturbed Children and Youth (3) I, S
Prerequisite: Special Education 567.
Nature, needs and problems of emotional deviants; survey of settings and roles of those who help, and ways they help.

563. (163.) Curriculum and Methods for Teaching Emotionally Disturbed Children and Youth (3) II or Irregular
Prerequisites: Special Education 562 or 567.
Selection, organization and presentation of curricular materials for emotionally disturbed children and youth.

564. (164.) Education of the Neurologically Handicapped (3) I
Prerequisites: Special Education 567 and Psychology 452.
Educational and psychological problems of brain-injured children and youth; identification procedures, educational programs, instructional methods, preparation of materials.

567. (167.) Exceptional Children (3) I, II, S
Characteristics and adjustment problems of mental, physical and emotional deviants.

568. (168.) Curriculum and Methods for Teaching Mentally Retarded Children in the Elementary School (3) II, S
Prerequisite: Psychology 452 or Special Education 567.
Selection, organization and presentation of curricular materials for mentally retarded children at all levels in the public schools. Concentration will be on the elementary level. (Recommended for students in elementary education.)

569. (169.) Curriculum and Methods for Teaching Mentally Retarded Children in the Secondary School (3) I, S
Prerequisite: Psychology 452 or Special Education 567.
Selection, organization and presentation of curricular materials for mentally retarded children at all levels in the public schools. Concentration will be on the secondary level. (Recommended for students in secondary education.)

572. (172.) Counseling Exceptional Children (3) I, S
Prerequisites: Elementary Education 362, and Special Education 567 or Psychology 454.
Educational, mental, social and vocational counseling of exceptional individuals and their parents. Interrelationships of home, school and community agencies.

573. (173.) Education of the Severely Mentally Retarded (3) II, S
Prerequisites: Special Education 567 and Psychology 454, and admission to special education.
Organization and planning of instructional activities; materials and equipment; utilization of resources, records, and reports; and classroom management of those under 50 IQ and those with neurological impairments.
### Counselor Education

**GRADUATE COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>Administration of Pupil Personnel Services (3)</td>
<td>3</td>
<td>Prerequisite: Secondary Education 667. The organization and administration of school guidance services, including the use of community resources and a study of laws relating to children and child welfare.</td>
</tr>
<tr>
<td>610A-610B</td>
<td>Determinants of Human Behavior (3-3)</td>
<td>3</td>
<td>Implications of theory and research in behavioral sciences for the understanding of human behavior. Counselor Education 610A deals with personality theories and psychological determinants of behavior; 610B with social and cultural determinants.</td>
</tr>
<tr>
<td>620</td>
<td>Guidance Services in Public Education (3)</td>
<td>3</td>
<td>Prerequisite: Counselor Education 561, or Elementary Education 362 and 372. Historical, philosophical, and legal bases of pupil personnel services; staff roles and relationships in a variety of organizational patterns.</td>
</tr>
<tr>
<td>630</td>
<td>Workshop in Counseling (3)</td>
<td>3</td>
<td>Prerequisite: Consent of instructor. Application of principles and procedures to specific situations for improvement of counseling services. Individual problems emphasized.</td>
</tr>
<tr>
<td>640</td>
<td>Theory and Process of Appraisal (4)</td>
<td>4</td>
<td>Three lectures and three hours of laboratory. Procedures of investigation, data analysis and reporting. Required of all applicants for advanced degrees in education.</td>
</tr>
<tr>
<td>650</td>
<td>Theory and Process of Vocational Choice (4)</td>
<td>4</td>
<td>Three lectures and three hours of laboratory. Vocational choice theory, occupational and educational materials used in career planning. Not open to students with credit in Counselor Education 690-S. Offered during summer sessions only in combination with Counselor Education 650 as 690-S.</td>
</tr>
<tr>
<td>660</td>
<td>Theory and Process of Counseling (4)</td>
<td>4</td>
<td>Prerequisites: Counselor Education 610A and 640. Counseling process theories, approaches to techniques for counseling, and research concerning counseling effectiveness. Supervised practice in counseling, analyzing counseling, and writing counseling reports. Not open to students with credit in Counselor Education 700-S or Psychology 452 or 650. Offered during summer sessions only in combination with Counselor Education 640 as 690-S.</td>
</tr>
<tr>
<td>670</td>
<td>Theory and Process of Group Counseling (4)</td>
<td>4</td>
<td>Three lectures and three hours of laboratory. Prerequisites: Counselor Education 610B and 660. Group process and individual growth, theories of group interaction, sensitivity training, and group leadership techniques. Not open to students with credit in Counselor Education 670-S. Offered during summer sessions only in combination with Counselor Education 660 as 700-S.</td>
</tr>
<tr>
<td>680A</td>
<td>Introduction to the Rehabilitation Process (3)</td>
<td>3</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Admission to counselor education. Background and legislation related to vocational rehabilitation; overview of client services and role and function of the rehabilitation counselor as a professional person. Orientation to community rehabilitation agencies.</td>
</tr>
<tr>
<td>680B</td>
<td>Medical Aspects of Disability (3)</td>
<td>3</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Counselor Education 680A. Orientation to medicine and illness in relation to work capacity and work outlook. Focus on major diseases and impairments resulting in vocational disability. Lecture and clinical seminars.</td>
</tr>
<tr>
<td>690A-690C</td>
<td>Psychological Aspects of Disability (3)</td>
<td>3</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Counselor Education 680B. Analysis of the psychological component to illness and disease. Focus on functional disorders and vocational implications. Lecture and clinical seminars.</td>
</tr>
<tr>
<td>690D</td>
<td>Placement of the Disabled (3)</td>
<td>3</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Counselor Education 680C. Determination of employment needs of disabled clients, case study method. Follow-through to placement. Continuous survey of employment needs and opportunities in the wider community.</td>
</tr>
<tr>
<td>690-S</td>
<td>Appraisal and Vocational Choice (6)</td>
<td>6</td>
<td>Five lectures and three hours of laboratory. Measurement test, interpretation of test results, vocational choice theory, occupational and educational information in career planning. Not open to students with credit in Counselor Education 640 or 650. Application to take the course must be made early during the preceding semester.</td>
</tr>
</tbody>
</table>
Educational Administration

GRADUATE COURSES

600. (260.) Principles of School Administration (3)
Federal, state and local school administrative relationships including the financial and legal structures at these three levels.

610. (261.) Education Leadership (3)
Prerequisite: Teaching credential.
Concepts and techniques of leadership, analysis of the factors and practice in the procedures of group and individual leadership in four areas: (a) the community; (b) the teaching staff; (c) the student personnel; (d) the professional field of educational administration and supervision.

620. (262.) Legal and Financial Aspects of School District Policies (3)
Prerequisite: Teaching credential.
Relationship of the school district to attendance units. The legal basis for policy formation in the selection and retention of certified personnel, in the admission and assignment of pupils, in the instructional programs and in related budgetary considerations.

630. (263.) Curriculum Development and Evaluation (3)
Prerequisite: Teaching credential.
Curriculum development in both elementary and secondary schools, with emphasis on relationships between these levels, responsibilities of curricular and supervisory personnel, and use of research.

640A-640B-640C. (264A-264B-264C.) Seminar in Elementary School Administration and Supervision (2-2-2)
Prerequisites: Educational Administration 600, 610, 620, 630, and admission to Program of Educational Administration; concurrent registration in 660A-660B-660C.
Analysis of theories and practices in the administration and supervision of the elementary school.
EDUCATION

EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

GRADUATE COURSES

674. (274.) Seminar in Educational Technology (3)
Prerequisite: Educational Technology and Librarianship 540.
Research reviewed and the findings related to current practices. Relationships of educational technology to educational philosophies and current issues. Recent trends evaluated.

675. (275.) Seminar in the Administration of Instructional Media Centers (3) I, II
Prerequisites: Educational Technology and Librarianship 445 and 540.
The relationship of school, district, and regional media centers to the educational program. Concepts of leadership and management, review of current practices and policies.

676. (276.) Seminar in Instructional Design (3) I, II
Prerequisite: Educational Technology and Librarianship 541.
Design and production of self-instructional sequences. Instructional materials design will be investigated. Student entry behavior, objectives, media characteristics and learning will be considered.

677. (277.) Reference Materials in Subject Areas (3)
Prerequisite: Educational Technology and Librarianship 546.
Reference materials in humanities, social sciences, and sciences with emphasis on their use in the school library media center.

678. (278.) Literature for Children (3)
Prerequisite: Educational Technology and Librarianship 547.
Literature and other library materials suited to the elementary school student. Standard, classic and current books for children; aids and criteria for selection.

679. (279.) Literature for Adolescents (3)
Prerequisite: Educational Technology and Librarianship 547.
Literature and other library materials suited to the high school student. Standard, classic and current books for the adolescent; aids and criteria for selection.

775. (275.) Directed Internship for the Instructional Media Specialist (2-6) Cr/NC
Application to take the course must be made during the preceding semester. Supervised internship in an instructional media center.

ELEMENTARY EDUCATION

GRADUATE COURSES

670. (270.) Curriculum Construction and Evaluation in Elementary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of the research in curriculum development, construction and evaluation.

671. (271.) Seminar in Reading in Elementary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences and interests. Students will develop individual projects or problems.

672. (272.) Seminar in Language Arts in Elementary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of the scientific research in the field.

673. (273.) Seminar in Mathematics in Elementary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school mathematics.

674. (274.) Seminar in Social Studies in Elementary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field.

Secondary Education

GRADUATE COURSES

610. (210.) Curriculum Construction and Evaluation in Secondary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of the research in curriculum development, construction and evaluation.

611. (211.) Seminar in Reading in Secondary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences and interests. Students will develop individual projects or problems.

612. (212.) Seminar in Language Arts in Secondary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of the scientific research in the field.

613. (213.) Seminar in Mathematics in Secondary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school mathematics.

614. (214.) Seminar in Social Studies in Secondary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field.

615. (215.) Seminar in Science in Elementary Education (3)
Prerequisite: Credit or concurrent registration in Education 690.
Advanced study of the problems of teaching science in the elementary school with emphasis on the literature of science education.

616. (216.) Advanced Diagnosis and Treatment of Learning Difficulties (3)
Prerequisites: A teaching credential and Elementary Education 562 or Secondary Education 656.
Principles and techniques of diagnosis and treatment of difficulties in learning the school subjects. Supervised experience in working with individual pupils and their parents.

621. (221.) Advanced Diagnosis in Reading (3)
Prerequisites: Psychology 654 and Elementary Education 521.
Principles and techniques of individual and group diagnosis of reading difficulties. Experience in administration and interpretation of individual and group instruments in diagnosis.

624. (224.) Seminar in Elementary Social Studies Curriculum Development (3)
Prerequisite: Elementary Education 414, and credit or concurrent registration in Education 690.
Current theories of instruction pertaining directly to elementary social studies teaching and curriculum development; critique of current social studies courses of study and guides; experience in elementary social studies curriculum planning at the classroom, school and district levels.

Guidance Problems in Secondary Education (3)
Prerequisites: Twelve units in secondary education and consent of instructor.
Current practices and trends in secondary schools. Extensive individual work on related problems submitted by students.

617. (217.) Research in Curricular Problems (1-3)
Prerequisites: Consent of the Coordinator of Secondary Education and instructor.
An analysis of the scientific research and philosophical principles in secondary school instruction.

618. (218.) Advanced Curriculum and Instruction in Mathematics (3)
Factors directing the changing mathematics curriculum; recent trends and current research in the teaching of secondary mathematics.

619. (219.) Recent Trends in Secondary Curriculum (3)
Prerequisites: Twelve units in secondary education and consent of instructor.
Current practices and trends in secondary schools. Extensive individual work on related problems of interest to members of the class.

619. (229.) School and Changing Sex Roles (3)
Prerequisite: Open to teachers and those enrolled in education credential programs.
The role of the role of males and females in education.

677. (227.) Leadership Problems in Secondary Education (3)
Prerequisites: Twelve units in secondary education and consent of instructor.
The role and practice of guidance, emphasizing advanced mental hygiene techniques needed by teachers and counselors.

681. (225.) Seminar in Secondary School Reading (3)
Prerequisite: Education 690.
Sources of research on reading; reading and criticism of selected studies; identification of research trends and needs.

685. Schools and Changing Sex Roles (3)
Prerequisite: Open to teachers and those enrolled in education credential programs.
Impact of schools upon the role of males and females and the role the educational systems play in maintaining traditional roles.
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<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>301. (187A.)</td>
<td>Methods of Analysis</td>
<td>3, 1, II</td>
<td>Mathematics 152, selected topics from ordinary differential equations, the Laplace transform, Fourier series, and linear algebra, with engineering applications.</td>
</tr>
<tr>
<td>302. (115.)</td>
<td>Fluid Mechanics</td>
<td>3, 1, II</td>
<td>Engineering 250, and credit or concurrent registration in Engineering 301.</td>
</tr>
<tr>
<td>304. (108.)</td>
<td>Thermodynamics</td>
<td>3, 1, II</td>
<td>Mathematics 152, development of the basic laws of thermodynamics from the macroscopic and microscopic viewpoints and their application to engineering systems.</td>
</tr>
<tr>
<td>306. (508.)</td>
<td>Engineering Mechanics I</td>
<td>3, 1, II</td>
<td>Engineering 200 and credit or concurrent registration in Mathematics 152. Kinematics of a particle; central force motion; systems of particles; work and energy; impulse and momentum; moments and products of inertia; Euler's equations of motion; vibration and time response; engineering applications.</td>
</tr>
<tr>
<td>308. (116.)</td>
<td>Introduction to Solid Mechanics</td>
<td>3, 1, II</td>
<td>Engineering 210 and 250; and credit or concurrent registration in Engineering 301. Mechanics of solid deformable bodies involving analytical methods for determining strength, stiffness, and stability of load-carrying members.</td>
</tr>
<tr>
<td>309. (166.)</td>
<td>Honors Course</td>
<td>1-3, 1, II</td>
<td>Refer to Honors Program.</td>
</tr>
<tr>
<td>310. (168A.)</td>
<td>Structural Analysis</td>
<td>3, 1, II</td>
<td>Principles of mechanics applied to analysis of beams, frames, trusses, and three-dimensional frameworks. Graphical methods; influence lines; deflections; introduction to statically indeterminate structures and moment distribution.</td>
</tr>
<tr>
<td>311. (145A.)</td>
<td>Elements of Machine Design</td>
<td>3, 1, II</td>
<td>Design of mechanisms wherein displacement, velocity, acceleration are paramount considerations.</td>
</tr>
<tr>
<td>312. (146A.)</td>
<td>Application of Mechanics, physical properties of materials, and strength of materials to the design of machine elements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>313. (118A.)</td>
<td>Transfer and Rate Processes</td>
<td>3</td>
<td>Engineering 260; fundamentals of rates of change in enthalpy and composition of matter; heat and mass transfer and chemical reaction rates.</td>
</tr>
<tr>
<td>314. (100.)</td>
<td>Electrical Energy Conversion</td>
<td>3, 1, II</td>
<td>Engineering 260; magnetic circuits, transformers and polyphase AC networks; fundamentals of electromechanical energy conversion; induction motors, synchronous machines and DC machines.</td>
</tr>
<tr>
<td>315. (100L.)</td>
<td>Electrical Energy Conversion Laboratory</td>
<td>1</td>
<td>Engineering 260; experimental study of DC, single and polyphase AC circuits, transformers, and machines.</td>
</tr>
<tr>
<td>316. (111.)</td>
<td>Network Analysis</td>
<td>3, 1, II</td>
<td>Engineering 260 and Mathematics 152; loop and nodal analysis using general network equations; network theorems; frequency and time response using poles and zeros. Two-port parameters.</td>
</tr>
</tbody>
</table>
352. (101.) Fundamentals of Engineering Electronics (3) I, II
Prerequisite: Engineering 260.
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.

352L. (101L.) Engineering Electronics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering 352.
Experimental study of laboratory instruments, diodes, rectifier circuits, filters, silicon controlled rectifiers, tubes, transistors, and amplifiers.

354. (102.) Electric and Magnetic Fields (3) I, II
Prerequisites: Engineering 250 and 260.
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.

361. (112.) Advanced Network Analysis (3) I, II
Prerequisites: Engineering 351, and 301 or Mathematics 340A.
Transient analysis of circuits containing resistance, inductance, and capacitance with various input wave forms by means of the Laplace-transform method.

362. (114.) Analysis and Design of Electronic Circuits (3) I, II
Prerequisites: Engineering 351, 352, and 301 or Mathematics 340A.
A unified treatment of vacuum-tube and transistor voltage and power amplifiers utilizing graphical methods and equivalent circuits; feedback theory and tuned amplifiers.

362L. (114L.) Electronic Circuits Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering 362.
Vacuum-tube and transistor dynamic characteristics; single stage and multistage amplifier circuits including feedback and tuned amplifiers.

370. (116.) Logic Design and Switching Circuits (3) I, II
Prerequisite: Engineering 352.
Combinational switching networks. Introduction to sequential circuits.

380. (150A.) Low Speed Aerodynamics (3) I
Prerequisites: Credit or concurrent registration in Engineering 302 and 302L.
Subsonic flow, airfoil and wing theory, experimental characteristics of wing sections, high lift devices.

381. (150B.) High Speed Aerodynamics (3) II
Prerequisites: Engineering 380 or 538.
Supersonic flow, two- and three-dimensional compressible flow, wings in compressible flow, two- and three-dimensional characteristics, transonic flow.

382. (154.) Experimental Aerodynamics (2) I
One lecture and three hours of laboratory.
Prerequisites: Credit or concurrent registration in Engineering 380.

386A-386B. (151A-151B.) Aerospace Structural Analysis (3-3) I, II
Prerequisites: Engineering 306 and credit or concurrent registration in Engineering 301 or Mathematics 340B. Engineering 386A is prerequisite to 386B.
Methods of structural analysis including both the static and dynamic aspects of problems encountered in the flight of aerospace vehicles.

390. (153A.) Aerospace Flight Mechanics (3) II
Prerequisites: Engineering 250, and 301 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.

400. (170.) Intermediate Engineering Problem Analysis (3) I, II
Prerequisite: Engineering 170.
Advanced use of Fortran and other computer programming languages for engineering problem analysis.

401. (180.) Principles of Engineering Economy (3) I, II
Application of the mathematics of finance to engineering and managerial decision making.

402. (192A.) Air Environment (2) I, II
Effects of air pollution, sources of pollution, atmospheric chemistry, measurement and instrumentation, automobile development and emissions.

403. (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.

404. (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.

410. (121.) Reinforced Concrete (3) II
Prerequisite: Engineering 310.
Properties and characteristics of reinforced concrete; design of structural components. Introduction to plastic theory and limit design.

411. (190A.) Civil Engineering Structural Design (3) II
One lecture and six hours of laboratory.
Prerequisites: Engineering 310 and 416.
Structural design in steel, structural connections; tension and compression members; beams; building code requirements applied to design of buildings of various structural materials including steel.

412. (184.) Experimental Strain Measurements and Analysis (3)
Two lectures and three hours of laboratory.
Prerequisites: Engineering 260 and 306.
Laboratory methods for measuring deformation, strains, and forces. Emphasis on instrumentation.

414. (123A.) Water Resources Engineering I (2) I
One lecture and three hours of laboratory.
Prerequisites: Engineering 414.
Two lectures and three hours of laboratory.
Prerequisites: Geology 153, Engineering 306, and credit or concurrent registration in Engineering 302.
Mechanics of soils; physical and mechanical properties; soil classification, compaction, swelling, consolidation, and shear strength. Laboratory tests and design problems.

417. (14I.) Foundation Engineering (3) II
Prerequisite: Engineering 416.
Soil mechanics theories applied to the design of shallow and deep foundations; lateral pressure of soils; design of retaining walls.

420. (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.
421. (127.) Highway Engineering (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Engineering 318 and credit or concurrent registration in Engineering 414. Highway planning, economics, and administration; geometric design; traffic engineering; subgrade structure; bituminous and portland-cement concrete pavements.

426. (148.) Engineering Thermodynamics (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Engineering 302.
Further development of the laws of classical thermodynamics. Applications to energy conversion devices.

437. (140.) Principles of Heat Transfer (3) I, II
Prerequisites: Engineering 301, and 304 or 305.
Heat transfer by conduction, convection, radiation, and combinations thereof; introduction to aerodynamic heating and heat transfer by phase change.

438. (141.) Internal Combustion Engines (3) II
Prerequisite: Engineering 436.
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.

441. (161.) Creativity in Design (3) II
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.

445A-445B. (190C-190D.) Mechanical Engineering Applications (2-2) I, II
Six hours of laboratory.
Prerequisites for 445B: Engineering 331, 332, 436 and 445A.
Applications of engineering principles to design of machinery and energy conversion systems. Individual student projects.

456. (137.) Communication Networks (3) I
Prerequisites: Engineering 351, 354, and 301 or Mathematics 340A.
Theory and application of transmission lines, including analysis by matrix notation; use of Smith chart and other transmission line charts; impedance-matching with transmission line stubs and lumped constants; theory and design of constant-k, m-derived, and other types of filter networks.

461. (172.) Interactive Computing (2) I, II
One lecture and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering 362.
Use of electronic calculators and timesharing terminals for circuit analysis computation and plotting.

465. (163.) Biomedical Instrumentation (3) I
Prerequisite: Engineering 303 or 352.
Instrumentation systems to monitor, control and record physiological functions.

467. (167.) Control System Components (3) II
Prerequisites: Engineering 350, 351 and 352.
Position transducers, phase-sensitive demodulators, static magnetic and rotating amplifiers, and servomotors. Derivation of component transfer functions.

467L. (167L.) Control Systems Components Laboratory (1) I, II
Prerequisite: Credit or concurrent registration in Engineering 467.
Experimental determination of transfer functions for control system components.

468L. (113L.) Analog Computation of Electrical Engineering Problems (1)
Three hours of laboratory.
Prerequisites: Engineering 301, 352, and credit or concurrent registration in Engineering 361.
Use of the analog computer in the solution of typical electrical engineering problems.
551. (192) Modern Power Systems I (3) I
Prerequisites: Engineering 301, 350 and 351.
Modern power system elements; calculation of load flow, fault currents, and system stability.

552. (194) Modern Power Systems II (3) II
Prerequisite: Engineering 550.
Transient response of modern power system elements; positive, negative and zero sequence impedance; subharmonic effects.

553. (133) Stochastic Signals (3) II
Prerequisite: Engineering 301 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
Prerequisite: Engineering 362.
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
Three hours of laboratory.
Prerequisites: Engineering 362L.
Regulated power supply systems; oscillator, modulator, detector, and switching circuits; superheterodyne receivers and television circuits.

555. (135) Modulation Theory (3) I
Prerequisite: Engineering 361.
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.

556. (139) Microwave Communications (3) II
Prerequisites: Engineering 362 and 456.
Applications of Maxwell's equations to wave propagation; skin effect, circuit impedance elements; vector potential, and other time-varying electrical phenomena; waveguides and resonators, strip line circuits, electromagnetic radiation.

556L. (139L) Microwave Measurements Laboratory (1) II
Three hours of laboratory.
Prerequisites: Credit or concurrent registration in Engineering 362L and 556.
Experimental study of microwave generation including klystrons, Gunn and IMPATT oscillators, TWT and microwave transistor amplifiers. Microwave modulation and detection, Microwave transmission and antennas.

557. (191) Microwave Devices (3) II
Prerequisite: Credit or concurrent registration in Engineering 556.
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.

562. (162) Transistor Circuit Analysis (3) I, II
Prerequisite: Engineering 362.
Analysis and design of transistor voltage and power amplifier circuits by use of duality and matrix methods. Feedback amplifiers, audio amplifiers, video amplifiers, power supplies, and oscillators; transient analysis and noise considerations.

564. (164) Solid-State Devices (3) I
Prerequisite: Engineering 362.
Conduction theory of solids. Characteristics of tunnel, backward, breakdown, multilayer and varactor diodes; silicon controlled-rectifiers and switches, unjunction transistors, hot electron devices. Lasers and laser applications.

568. (168) Feedback Control Systems (3) I
Prerequisite: Engineering 467.
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.
569. (169.) Advanced Feedback Control Systems (3) II
Prerequisite: Engineering 568.
A continuation of Engineering 568 to include feedback compensation, advanced
compensation techniques, signal flow theory, state-variable techniques, introduction to
nonlinear and sampled-data control systems.
569L. (169L.) Feedback Control Systems Laboratory (1)
Three hours of laboratory.
Prerequisites: Engineering 362L, 467, and credit or concurrent registration in Engineering 568.
Analysis of steady-state and transient response of uncompensated and compensated
feedback control systems using transfer functions and frequency response techniques.
570. (175.) Advanced Pulse and Digital Circuits (3) II
Prerequisite: Engineering 470.
Digital system design using linear elements. Microcircuit amplifiers, sweep circuits, FETs
and MOS devices, A/D and D/A converters.
571. (177.) Advanced Logic Design and Switching Circuits (3) I, II
Prerequisite: Engineering 370.
Detailed synthesis of synchronous and asynchronous sequential circuits. Impact of
microcircuit technology on practical logic design.
573. (178.) Computer Organization (3) I, II
Prerequisites: Engineering 170 or Mathematics 107, and Engineering 370.
Data and information structure, machine and assembly language programming, arithmetic
and control units microprogramming, memory devices, input-output devices, channels and
operating systems concepts.
583. (157.) Intermediate Fluid Mechanics (3)
Prerequisites: Credit or concurrent registration in Engineering 302, and 501 or
Mathematics 340B.
Kinematics of fluid motion. Conservation of mass, momentum, and energy. Ideal and
viscous flows and applications. Boundary layer approximations.
584. (152.) Aircraft Propulsion Systems (3)
Prerequisite: Engineering 380 or 436.
Theory and performance characteristics of aircraft propulsion systems including
reciprocating engines, turboprops, jet engines, etc.
585. (181.) Hydrodynamics (3)
Prerequisites: Engineering 250, and 301 or Mathematics 340A or 350 or 533.
Kinematics, equations of continuity, energy, and momentum of perfect fluids. Introduction to
conformal transformations. Three-dimensional and two-dimensional irrotational motion,
with applications to physical problems. Vector notation will be used.
587. (155.) Matrix Methods in Aerospace Structures (3)
Prerequisite: Engineering 386B.
Static and dynamic analysis of aerospace structures utilizing matrix methods.
588. (156.) Intermediate Dynamics (3)
Prerequisites: Engineering 250, 260, and 301 or Mathematics 340A.
Kinematics and kinetics of systems of particles and rigid bodies. Dynamic analysis
procedures for studying mechanical, electrical, and electromechanical systems. Variational
methods.
590. (153B.) Intermediate Aerospace Flight Mechanics (3) I
Prerequisite: Engineering 390.
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.
591. (158.) Aircraft Design and Performance (3)
Prerequisite: Engineering 381.
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.

Aerospace Engineering

600. (200.) Seminar (1-3)
Prerequisite: Consent of the graduate adviser and instructor.
Intensive study of topics in aerelasticity, aerodynamic noise, aero thermal structural
analysis, hydrodynamic stability, hypersonic flow theory, magnetohydrodynamics, raredified
and real gas flows, electromagnetic propulsion, boundary layers, and other areas of aerospace
engineering.

612. (242.) Supersonic Flow Theory (3)
Prerequisite: Engineering 381.
Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady
flight, slender-body theory, methods of characteristics.
671. (205.) Flight Dynamics—Theory of Flight Paths (3)
Prerequisite: Engineering 381.
Analysis of trajectories of aircraft, missiles, satellites, and spacecraft subjected to uniform
or central gravitational forces, aerodynamic forces, and thrust.

Civil Engineering

600. (200.) Seminar (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in advanced civil engineering, topic to be announced in the class
schedule. Maximum credit six units applicable on a master's degree.
601. (201.) Advanced Theory of Structures (3)
Prerequisites: Engineering 510 and Mathematics 340A.
Analysis of statically indeterminate structures based on principles of deflected structures.
Approximate analysis of structures under lateral loads for rigid and shear wall structures.
602. (202.) Design of Thin Shell Structures (3)
Prerequisite: Engineering 510.
Analysis and design of typical civil engineering thin shell structures.
603. (203.) Plastic Design in Steel (3)
Prerequisite: Engineering 510.
Analysis and design of steel framed structures for ultimate load. Connections, secondary
design problems, column stability, and repeated loading.
605. (205.) Prestressed Concrete Structures (3)
Prerequisite: Engineering 510.
Fundamental concepts of prestressed concrete theory. Design applications to various types of
structures.
606. (206.) Matrix Analysis of Structures (3)
Prerequisite: Engineering 510.
Development of matrix methods for the analysis of structural systems. Force methods,
displacement methods. Application of the digital computer to structural analysis.
Seminar in Feedback Control Systems (1-3)

Prerequisite: Engineering 564.

An intensive study in feedback control systems. Maximum credit six units applicable on a master's degree.

Seminar in Communications Systems (1-3)

Prerequisite: Engineering 568.

An intensive study in communication theory and systems. Maximum credit six units applicable on a master's degree.

Seminar in Computer Engineering (1-3)

Prerequisite: Engineering 568.

An intensive study in computer engineering topics. Maximum credit six units applicable on a master's degree.

Linear System Analysis (3)

Prerequisites: Engineering 351 and credit or concurrent registration in Engineering 501 or Mathematics 340B.

Loop and nodal system equations based on topological considerations, four-terminal network theory using matrices. Fourier integral transform theory as applied to linear system analysis. Positive real functions and associated testing methods.

Synthesis of Active and Passive Networks (3)

Prerequisite: Electrical Engineering 610.

Frequency-domain synthesis of driving point and transfer impedances in passive and active networks. Canonical forms and network equivalents. Time-domain synthesis and considerations of pulsed-data systems.

Computer-aided Network Analysis and Design (3)

Prerequisites: Engineering 361 or equivalent computer-aided circuit design, Electrical Engineering 610, and Fortran programming.

Approximation theory, device modeling, topological analysis of networks, applications of general purpose computer programs, passive and active filter design, circuit optimization.

Noise in Electrical Devices (3)

Prerequisite: Engineering 562.

Major types and origins of electrical noise and the effects of noise on system behavior. Emphasis on concepts of noise as a random process, as distinguished from systematic or periodic interference.

Feedback Control Systems (3)

Prerequisite: Engineering 568.

Analysis and synthesis of feedback control systems using feedback compensation. Multiple-loop control systems; a-c feedback control systems, optimization.

Sampled-Data Systems (3)

Prerequisite: Engineering 568.

Analysis and synthesis of sampled-data and digital control systems; techniques for the design of time optimal sampled-data control systems; z-transform calculus and difference equation synthesis techniques for determining stability and system response.

State Space Analysis of Control Systems (3)

Prerequisite: Engineering 568.

State space representation of control systems, state transition flow graphs, methods of solution of the state equation, controllability and observability, and introduction to optimal control systems.

Integrated Circuits (3)

Prerequisite: Engineering 470.

Fabrication methods, logic gates, multivibrators, medium- and large-scale integration techniques and devices. Linear integrated circuits and MOS technology. Emphasis on proper application of devices through knowledge of circuit operation and interpretation of manufacturers' specification sheets.

Linear Semiconductor Circuit Design (3)

Prerequisite: Engineering 562.

Field effect transistors and circuits; quantitative variable nature of transistor parameters; differential and chopper stabilized dc amplifiers; high efficiency switching-mode power amplifiers, converters and inverters; noise, reliability considerations and high speed switching.

Quantum Electronics (3)

Prerequisite: Engineering 564.

Quantum mechanics for engineers concerned with its application to solid-state devices. Basic principles and engineering applications of lasers.

Optical Communications (3)

Prerequisite: Electrical Engineering 620.

Fundamentals of electro-optical technology from ultraviolet through infrared. Characteristics of thermal and laser radiation including generation, transmission, detection, data processing and display.

Coding Theory (3)

Prerequisite: Engineering 553.

The theory of coding as a method of combating noise in communication channels. Redundancy added to messages to assure arbitrarily small error rates at a given information rate. Discussion of channels and capacity. Block codes, cyclic codes, BCH codes, convolutional code.

Semiconductor RF Circuit Design (3)

Prerequisite: Engineering 554.

Wide band amplifiers, low level RF amplifiers and mixers, IF amplifiers, AGC, tuning and stability problems, unilateralization and mismatching techniques, harmonic oscillators, VHF power amplifiers including varactor multipliers.

Antennas and Propagation (3)

Prerequisite: Engineering 566.

Impedance characteristics and radiation patterns of thin linear antenna elements; field intensity calculations. Tropospheric and ionospheric propagation; propagation anomalies.

Microwave Networks (3)

Prerequisite: Engineering 556.

Equivalent circuits for waveguide discontinuities developed on the basis of mode theory, linearity, reciprocity, and symmetry. Application of general network theory to wave guides, cavity resonators and antennas.

Radar Systems (3)

Prerequisite: Engineering 556.

The radar equation; characteristics of CW, FM, MTI, pulse-doppler and tracking radar systems; transmitters, antennas and receivers; detection of signals in noise, extraction of information; propagation effects; system engineering and design.

Digital Processing of Signals (3)

Prerequisite: Engineering 555.


Modern Communication Theory I (3)

Prerequisite: Engineering 553 or Mathematics 550.

Probability theory, random variables, random processes, Gaussian process, random signals through linear systems, noise considerations, optimum receiver design, applications to digital and wave-form communication.

Modern Communication Theory II (3)

Prerequisite: Electrical Engineering 660.


Microprogramming (3)

Prerequisite: Engineering 573.

Fundamentals of microprogramming and read only storage technology as related to the design of digital computers.

Computer Input/Output Devices and Systems (3)

Prerequisite: Engineering 567.

Control programs, interrupt procedures, I/O programming techniques, interfaces, channels, magnetic recording techniques, I/O devices.
246 / Engineering

672. (272.) Minicomputer Design and Applications (3)
Prerequisite: Engineering 573.
Current minicomputer architectures, CPU-oriented and universal bus-oriented machines.
Prerequisite: Engineering 370.
676. (276.) Fault Tolerant Computing (3)
Prerequisite: Engineering 370.
Triple modular redundancy, standby sparing, quod logic, parity and residue checking of computer systems and subsystems. Diagnostic programming and fault testing fundamentals.
677. (277.) Topics in Logic Design (3) II
Prerequisite: Engineering 571.
Review of current technical periodic literature in logic design and digital systems. Stress on specialized synthesis techniques and recent theoretical developments.
678. (278.) Electronic Digital Systems (3)
Prerequisite: Engineering 575.
Design of arithmetic, control and memory units. Detailed comparative analysis of the system organization and operation of several digital computers, with special attention to the interdependence of design decisions and their dependence upon the intended system application.
796. (196.) Advanced Topics in Electrical Engineering (2 or 3)
Advanced study in the field of electrical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
797. (297.) Research (1-3) Cr/NC
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

Engineering Mechanics

GRADUATE COURSES

600. (200.) Seminar (1-3)
Prerequisite: Consent of the graduate adviser and instructor.
Intensive study of topics in nonlinear vibrations, random vibrations, continuum mechanics, anisotropic elasticity, energy methods, plasticity, and other areas of engineering mechanics.
601. (201.) Advanced Dynamics (3)
Prerequisites: Engineering 250, and 301 or Mathematics 340A.
621. (221.) Theory of Elasticity (3)
Prerequisites: Engineering 306 and credit or concurrent registration in Engineering 501 or Mathematics 340B.
Analysis of stress and strain; stress-strain relations; the equations of elasticity; uniqueness theorem; compatibility conditions; flexure and torsion. Vector and tensor notation will be used.
643. (243.) Advanced Fluid Mechanics I (3)
Prerequisites: Engineering 302 and credit or concurrent registration in Engineering 501 or Mathematics 340B.
Fluid kinematics and kinetics. Conservation of mass, energy, and momentum, applied to Newtonian fluids. Navier-Stokes equations. Couette and Poiseuille flow. Potential flow. Introduction to turbulence and boundary layer theory. Vector and tensor notation will be used.
703. (203.) Theory of Vibrations (3)
Prerequisites: Engineering Mechanics 601 and credit or concurrent registration in Engineering 501 or Mathematics 340B.
Linear and nonlinear periodic phenomena as applied to discrete systems and continuous media with application to physical problems.
725. (225.) Theory of Plates (3)
Prerequisite: Engineering Mechanics 621.
Bending and buckling theory of plates; application of small deflection and large deflection theories to plates with various boundary conditions; use of approximate methods and exact methods in solution.
726. (226.) Theory of Shells (3)
Prerequisite: Engineering Mechanics 621.
Membrane and bending theory of shells of revolution and shells of arbitrary shape; exact and approximate methods of solution of shells subjected to axisymmetric and arbitrary loads.
727. (227.) Theory of Elastic Stability (3)
Prerequisite: Engineering Mechanics 621.
744. (244.) Advanced Fluid Mechanics II (3)
Prerequisite: Engineering Mechanics 643.
796. (296.) Advanced Topics in Engineering Mechanics (2 or 3)
Advanced study in the field of engineering mechanics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
797. (297.) Research (1-3) Cr/NC
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

Mechanical Engineering

GRADUATE COURSES

600. (200.) Seminar (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
A continuation of Engineering 331. Problems from recent publications.
611. (211.) Stress Analysis (3)
Prerequisites: Engineering 501 and 532.
Topics in applied elasticity, advanced study of the resistance of materials and experimental stress analysis. Failure theories, energy methods, limit design, theory of plates and shells, Photoclasticity, brittle lacquers, strain gages, and analogs in determining static, dynamic and residual stress distributions.
613. (213.) Engineering Design: Advanced Mechanisms (3)
Prerequisites: Engineering 331, 501 and 541.
A continuation of Engineering 331. Problems from recent publications.
616. (216.) Bearing Design and Lubrication (3)
Prerequisite: Engineering 501.
Friction and wear of materials. Boundary and thick film lubrication. Design of compressible and compressible fluid bearings; rolling-element bearings.
621A-621B. (221A-221B.) Mechanical Vibrations (3-3)
Prerequisites: Engineering 501, 534 and 541.
Topics in vibration relating to mechanical design such as nonlinear vibrations, distributed mass systems, random vibrations, mobility analysis, isolater design.
631. (231.) Fluid Power and Control Systems (3)
Prerequisite: Engineering 335.
Analysis of dynamic performance of physical systems such as pneumatic, hydraulic and hot-gas. Transient forces and valve instability. Servo characteristics.
632. (232.) Advanced Topics in Automatic Controls (3)
Prerequisite: Engineering 335.
Analysis of nonlinear systems by describing function and phase plane methods. Sampled data systems analysis; statistical design techniques and adaptive control.
641. (241.) Advanced Science of Materials (3)
Prerequisite: Engineering 330.
Structure and physical properties of solids. Imperfections in materials and their effect on various properties. Elasticity, plasticity, and fracture of metals related to atomic and crystal structure.
643. (3) Physical Metallurgy for Engineers
Prerequisites: Engineering 304 and 330.
Fundamentals of crystallography, imperfections, alloying and deformation. Composition, temperature, prior thermal and mechanical treatment on structure of metal; relationship of structure to mechanical properties.

645. (3) Mechanical Metallurgy for Engineers
Prerequisites: Engineering 304 and 330.
Fundamentals of plastic deformation of crystalline solids; elementary theory of statics and dynamics of dislocations, deformation, fracture and metallurgical variables on mechanical properties; environment-failure interactions.

647. (3) High Temperature Materials
Prerequisite: Engineering 330.
Behavior of metals, cerments, and nonmetallic materials at high temperatures. Effect of environment and service conditions on composition, structure, and physical properties.

651. (3) Analytical Thermodynamics
Prerequisite: Engineering 301.
Advanced concepts of macroscopic thermodynamics. Application of thermodynamics to special systems.

661. (3) Gas Dynamics
Prerequisites: Engineering 501 and 538.
Further consideration of the flow of compressible fluids in conduits. Shock fronts, unsteady flow and real gases.

663. (3) Boundary Layers in Internal Flows
Prerequisites: Engineering 437 and 501.
Conservation laws applied to boundary layers in viscous, heat conducting fluids; analysis of the boundary layer equations; applications to internal flows.

671. (3) Conduction Heat Transfer
Prerequisites: Engineering 437 and 501.
Conduction heat transfer, multidimensional conduction processes, transient analysis.

673. (3) Convection Heat Transfer
Prerequisite: Mechanical Engineering 663.
Convection heat transfer. Advanced theories of forced and free convection.

675. (3) Radiation Heat Transfer
Prerequisites: Engineering 437 and 501.
Radiation heat transfer. Solid body and gaseous radiation.

681. (3) Cryogenic Engineering
Prerequisite: Engineering 436.
Analysis of low-temperature processes and equipment. Physical properties of structural and other materials used in producing, maintaining, and using low temperatures.

682. (3) Aircraft and Missile Propulsion
Prerequisites: Engineering 501, 537 and 538.

683. (3) Propulsion Systems for Spacecraft
Prerequisites: Engineering 436 and 501.
The physical and chemical laws that govern the performance, selection and design of non-air-breathing propulsion systems for space applications.

684. (3) Theory of Turbomachines
Prerequisite: Engineering 380 or 538.
Application of the fundamental laws of fluid mechanics to the problems of energy transfer between fluid and rotor. Performance characteristics or turbomachines. Study of loss mechanisms.

685. (3) Direct Energy Conversion
Prerequisites: Engineering 536 or Mechanical Engineering 651, and Engineering 301.
Application of physical and chemical laws to the analysis, design, and evaluation of various direct energy conversion systems.

696. (2 or 3) Advanced Topics in Mechanical Engineering
Advanced study in the field of mechanical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

697. (1-3 Cr/NC) Research
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

795. (3) Seminar in Environmental Engineering
Prerequisite: Engineering 402, 403, or 404.
Environmental problems including an intensive investigation of selected topics.

79/ (1-3 Cr/NC) Special Study
Prerequisite: Consent of staff, to be arranged with department chairman and instructor.
Individual study. Three units maximum credit.

799A. (3) Thesis or Project
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.
**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 64 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.)

**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, and 516.

Modern English: English 513, 514, 516, 544, and 545.

American Studies: English 521, 531, 541, 547, and 560, 562, and 563.

Creative Writing: English 570, 571A-571B, 572, 579, 580, 581, 582, and 589.

NOTE: In addition to the courses listed above, appropriate sections of English 496, 499, 520, 540, 579, 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, in subject to general university regulations (see "Credit for Upper Division Courses" in this 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 or general education.

**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. (90.) 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.
1. Experimental Topics (2-4)
   Refer to the catalog statement on Experimental Topics on page 115. Limit of nine units apply 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.

British Literature

   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 193)

Creative Writing

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

General

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

496. (190.) Selected Topics in English (2-3) I, II
   Specialized study of a selected topic in literature. May be repeated with new content. Maximum credit six units.

497. (194.) Individual Reading (1) I, II
   Selected works by a major author. May be repeated with new content. Maximum credit two units.

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

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) II
   The theory and practice of selected nineteenth and twentieth century critics, with emphasis on the distinctive features of their approaches to literature.

American Literature

510. (130.) Early 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.
GRADUATE COURSES

600. (290.) Introduction to Graduate Study (3)
Prerequisite: Twelve upper division units in English.
Introduction to research methods and critical approaches common in the graduate study of literature, with attention to basic reference works, scholarly and critical journals, bibliographical techniques, editorial procedures, etc. Recommended for first semester graduate students. Prerequisite to graduate seminars.

610. (234.) Literature of the Middle Ages (3)
Prerequisite: Twelve upper division units in English.
Selected works in the literature of the Middle Ages with emphasis on Middle English prose and poetry exclusive of Chaucer.

612. (235.) Renaissance Literature (3)
Prerequisite: Twelve upper division units in English.
Selected works in the literature of the Renaissance.

614. (236.) Restoration and Eighteenth Century Literature (3)
Prerequisite: Twelve upper division units in English.
Selected works in the literature of the late seventeenth and the eighteenth centuries.

616. (237.) Earlier Nineteenth Century Literature (3)
Prerequisite: Twelve upper division units in English.
Selected works in the literature of the early nineteenth century.

617. (238.) Later Nineteenth Century Literature (3)
Prerequisite: Twelve upper division units in English.
Selected works in the literature of the later nineteenth century.

620. (239.) Twentieth Century Literature (3)
Prerequisite: Twelve upper division units in English.
Selected works in the literature of the twentieth century.

625. (233.) American Literature (3)
Prerequisite: Twelve upper division units in English, with courses in American literature strongly recommended.
Selected works of an author, period, or subject in American literature. Maximum credit six units applicable on a master's degree.

630. (243.) Poetry (3)
Prerequisite: Twelve upper division units in English. Poetry as a literary form.

631. (244.) Fiction (3)
Prerequisite: Twelve upper division units in English. Fiction as a literary form.

632. (245.) Drama (3)
Prerequisite: Twelve upper division units in English. The drama as a literary form.

640. (260.) Workshop in Creative Writing (3)
Prerequisite: Consent of instructor and departmental adviser.
Criticism and coaching in the larger forms. Maximum credit six units applicable on a master's degree.

642. (279.) Tutorial in Creative Writing (3)
Prerequisites: Twelve upper division units in English, including at least six units in creative writing.
Individual guidance for advanced writers who wish to work on special projects in creative writing.

700. (291.) Seminar: A Major Author (3)
Prerequisite: An appropriate upper division or graduate level background course, and English 600. The critical study of a major author, such as Shakespeare, Dickens, Mark Twain. May be repeated with new content. Maximum credit six units applicable on a master's degree.

710. (292.) Seminar: A Cultural Period (3)
Prerequisite: An appropriate upper division or graduate level background course, and English 600. Advanced study, through its literature, of a cultural period such as the Renaissance, the Enlightenment, the Romantic revolution. May be repeated with new content. Maximum credit six units applicable on a master's degree.

720. (293.) Seminar: Special Topics (3)
Prerequisite: English 600. Advanced study of such literary problems as Regionalism in America and Continental Influences on British Literature, or such topics as esthetics, the creative process, literary translation, teaching of composition and literature, and others. May be repeated with new content. Maximum credit six units applicable on a master's degree.

730. (294.) Seminar: A Literary Type (3)
Prerequisite: English 600. Advanced study of a literary type, such as the Personal Essay, Epic, Tragedy. May be repeated with new content. Maximum credit six units applicable on a master's degree.

798. (286.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
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, Economics, 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 School of Business Administration. 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 64 of this catalog.

Preparation for the major.

Twenty-seven units to include Art 258 or 259; Economics 120 and 121, or Geography 101 and 102, or Political Science 110 and 130; History 105A-105B; and 12 units in Latin or one of the major European languages (French, German, Italian, Russian, Spanish) beyond the minimum of four units required in liberal arts and sciences.

Major. A minimum of 30 upper division units to be chosen with approval of the advisor 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 advisor.

LOWER DIVISION COURSES

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.)

130. 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 330. (Formerly numbered Humanities 52.)

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

301-S. European Civilization (3) S
The civilization of Europe through a conducted travel tour. (Formerly numbered Humanities 48-S.)

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 42.)

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 43.)

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 44.)

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 45.)

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 42.)

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 43.)

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 44.)

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 45.)

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 40.)

400-S. (148-S) European Civilization (3) S
The civilization of Europe through a conducted travel tour.

401A-401B. The Cultural Heritage of Europe I, II (3-3) I, II
European history, literature, philosophy, art and music from the Middle Ages to the French Revolution, stressing major cultural movements: Romanesque, Gothic, Renaissance, Baroque, Rococo, and Classicism. (Formerly numbered Humanities 150A-150B.)
402A-402B. The Cultural Heritage of Europe III, IV (3-3) I, II
European history, literature, philosophy, art and music during the 19th and 20th centuries, stressing major cultural movements: Romanticism, Realism, Naturalism, Symbolism, Expressionism, Existentialism, and Structuralism. (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.

580. 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: Comin, Thomas
Professors: Cannon, Dorris, Fulcomer (Director), Somerville, Warmer
Associate Professors: Anderson, Gunning, Mihne, Price
Assistant Professors: Boggs, Dickerson, Hambleton, Kwallek, Martin, M., Martin, M., Schupp, Wertz
Lecturers: Considine, Hewes, Hill, Kripke, Mikiika, Pollock, Richards, Ross, Warner, Wesolowski

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

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, 104; Family Studies and Consumer Sciences (Family Studies and Child Development) 270; Art 101; three units of biology; Business Administration 210A; Chemistry 100A-100B, 160; Economics 120; Physics 107; Sociology 101; and Microbiology 210. (49 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 adviser from Business Administration.

Plan A: Emphasis in Foods and Nutrition

Preparation for the major. Family Studies and Consumer Sciences (Home Economics) 115, 240, 245; Family Studies and Consumer Sciences (Foods and Nutrition) 103, 104; Family Studies and Consumer Sciences (Family Studies and Child Development) 270; Art 101; three units of biology; Business Administration 210A; Chemistry 100A-100B, 160; Economics 120; Physics 107; Sociology 101; and Microbiology 210. (49 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 adviser from Business Administration.

Plan B: Home Economics

Preparation for the major. Family Studies and Consumer Sciences 204, 119, 151, 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 100A, 100B. Family Studies and Consumer Sciences 103 is needed for Home Management sequence. (36-39 units.)

Major. A minimum of 36 upper division units selected from one of the core professional sequences listed below.
Core Professional Sequences.


Housing and Environmental Factors: Family Studies and Consumer Sciences 343, 345, 440, 446, 451, 454, 461; Art 550; Business Administration 231, 370; Geography 354; Public Administration 320. The prerequisites for Art 550 and Geography 354 have been waived.

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 or general education.

Home Economics Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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, 204, 119, 151, 240, 245; Family Studies and Consumer Sciences (Family Studies and Child Development) 135, 270, Anthropology 101 or Sociology 101; Art 101; Chemistry 100A, 100B; Economics 103 or 121. (39 units)

Major. A minimum of 34 upper division units in Family Studies and Consumer Sciences to include 315 or 518, plus three additional units in clothing and textiles: 335 or 536, 343, 371, 400 or 401, 440, 451, 483, 545, 584.

LOWER DIVISION COURSES

299. (99.) Experimental Topics (2-4) I
Refer to the catalog statement on Experimental Topics on page 115. 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.

Foods and Nutrition

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.

204. (4.) Fundamentals of Nutrition (3) I, II
Nutrition as applied to the stages of the normal life cycle.

Home Economics

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.
Prerequisite: Chemistry 100B.
Fibers, yarn, fabric construction, and finishes as related to selection, use, and care.

151. Home Management Decision Making (3) I, II
Examination of values systems and application of principles of decision making to individual, professional and family management in changing situations.

240. (40.) Family Income Management (3) I, II
Financial problems involved in the effective management of the family resources.

245. (45.) Fundamentals of Housing and Interiors (3) I, II
Prerequisite: Art 101.
Architectural, functional and aesthetic factors of housing and interiors as related to family needs.

Family Studies and Child Development

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.

270. (70.) Principles of Child Development (3) I, II
Prerequisites: Psychology 101 and Sociology 101.
Study of the child from conception through adolescence, with emphasis on principles of growth and development. Directed observations of children. Not open to students with credit in Psychology 330, or Elementary Education 372.

UPPER DIVISION COURSES

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

496. Experimental Topics (2-4) I
Refer to the catalog statement on Experimental Topics on page 115. 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.

590. (190.) Advanced Studies in Family Economics (2-4) 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.

Foods and Nutrition

400. (109.) Meal Management and Service (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 103 and 104.
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 100B or 200B, and Physics 107.
Study of the chemical and physical properties of foods; principles underlying preparation of food products of standard quality; function and interaction of food constituents.

402A. (102A.) Advanced Nutrition (3) I, II
Prerequisites: Family Studies and Consumer Sciences 204; one course in biochemistry; 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
Eight hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 400.
Planning, preparation and service of quantity foods in various food service operations with students working under joint supervision of facility 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.
Managerial 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
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 402A.
Dietary modifications for pathological conditions.

### 480. (180.) Food Demonstration Techniques (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Nine units in Family Studies and Consumer Sciences.
Organizing materials and developing techniques for demonstrations; observation, evaluation and participation in professional demonstrations for photography, the classroom and mass media.

### 507. Processing Food and Nutrition Data (3) II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 402A and 403.
Application of computer logic to food service management, diet planning and analysis.

### 508. (108.) Advanced Food Systems Management (3) II
One lecture and six hours of laboratory.
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.
Exploration of nutrition problems in the community with consideration of current and potential means of resolving them.

### Home Economics

#### 315. (115.) Advanced Clothing (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 115 or competency examination.
Fitting and construction processes applied to wool, silk, and synthetics, emphasizing fundamental principles of handling.

#### 316. (116.) Tailoring (3)
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Principles of tailoring, planning and construction of coats and suits.

#### 317. (117.) Fashion Analysis and Clothing Selection (3) I, II
Analysis of fashion as it relates to clothing selection. Emphasis on fashion trends, wardrobe planning, buying practices, and standards of quality.

### 423. (123.) Fabric Structure and Design Processes (3)
One lecture and six hours of laboratory.
Prerequisite: Art 101.
A study of stitchery, knitting, crocheting, weaving, macrame, and textile decoration.

### 343. (143.) Household Equipment and Processes (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Chemistry 100B.
Study and laboratory experience to acquaint students with current research findings in relation to equipment and household supplies. Emphasis placed upon characteristics and composition of household materials, use and care.

### 345. Housing and Interiors: Historical Influences (3) I
Historical influences of structures, interiors and furnishings as they express cultural needs and values. Critical appraisal of aesthetic and functional qualities of historical and contemporary housing environments.

### 350. (150.) Principles of Home Management (3) I, II
Efficient management of the home, family cooperation, establishment of goals, and productive use of money, time, and energy. Not open to home economics majors, or to students with credit in Family Studies and Consumer Sciences 451.

#### 351. 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.

### 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.

### 446. Housing and Interiors: Contemporary Design (3) II
One lecture and six hours of laboratory.
Influence of contemporary designers on structure, interiors and furnishings used in planning the total housing environment.

### 451. (151.) Home Management Theory and Analysis (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 151, 240 and 400.
Concepts of home management related to ethnic and socioeconomic needs of families.
Practical application in home management residence and field experience.

### 452. (152.) Home Management Laboratory (3) I, II
Five weeks' residence in a family-size unit.
Prerequisites: Family Studies and Consumer Sciences 451 and written request made to department chairman one year prior to enrollment.
Application of theories and principles of all disciplines of home economics.

### 462. Fashion Merchandising Seminar (3)
Prerequisite: Family Studies and Consumer Sciences 361.
Intensive and specific consideration of practices and problems related to the apparel industry.

### 481. (181.) Materials and Techniques for Teaching Home Economics (3) II
Prerequisite: Fifteen upper division units in Family Studies and Consumer Sciences.
Use of instructional materials in home economics. Application and development of individualized instructional products, demonstration materials and other instructional aids. Selection and evaluation of instructional materials for home economics.
482. (182.) Educational Practices and Instructional Resources (3) I, II
Prerequisite: Fifteen units in Family Studies and Consumer Sciences.
Principles of learning as they relate to teaching home economics to adults. Organization of material; selection, use and evaluation of teaching techniques.

483. Program Development in Home Economics (3) I, II
Prerequisites: Twelve upper division units in Family Studies and Consumer Sciences; admission to secondary education credential program.
Development and design, instructional procedures and evaluation strategies for consumer home economics programs.

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 purpose 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 100B.
Analysis based on physical and chemical tests for quality differences due to variation in fibers, content, structure, and finishes and their suitability for specified uses.

520. (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.
Experience 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.

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 546.
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.
Prerequisites: 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.

584. Occupational Home Economics Programs (3) I
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences.
Vocational education legislation; development and administration of occupational and career programs in all areas of home economics.

Family Studies and Child Development

335. (135.) Family Interaction (3) I, II
Prerequisite: Family Studies and Consumer Sciences 135.
Marriage adjustment and family interaction throughout the life cycle.

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.

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.

476. (176.) Creativity in the Young Child (3) II
Prerequisite: Family Studies and Consumer Sciences 575.
An examination of creativity; philosophical approach to experiences which would be appropriate for use with young children.

478. (178.) Working with Parents (3) I, II
Prerequisite: Family Studies and Consumer Sciences 270 or Psychology 330 or Elementary Education 372.
An investigation of philosophy, issues, and current trends in working with parents.

536. (136.) Family Study (3) I, II
Prerequisites: Family Studies and Consumer Sciences 135 and Sociology 101.
Dynamics of family living; attitudes, practices, social and psychological interaction and family life patterns in different cultures, social classes and ethnic groups.

539. Family Relationships in Literature (3) 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.

570. (170.) Human Development: Infancy (3) I, II
Prerequisite: Family Studies and Consumer Sciences 270.
Physiological, psychological, social and cultural development and behavior of the human organism through age two.

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 course must be made during the preceding semester.
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 476 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.

GRADUATE COURSES

Foods and Nutrition

600. (200.) Seminar: Foods and Nutrition (3)
Prerequisites: Family Studies and Consumer Sciences 401 and 402.
An intensive study of research in technological advances in the fields of foods and nutrition, with emphasis on professional organizations and ethical procedures.
266 / Family Studies and Consumer Sciences

603. (203.) Advanced Readings in Food Technology (3)
Prerequisite: Family Studies and Consumer Sciences 401.
Reading and analysis of selected research in food technology.

605. (205.) Assay for Nutrients in Foodstuffs and Tissues (3)
Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 401 and 402.
Determination of energy values, organic nutrients, and minerals in foodstuffs and tissues by chemical, biological, and microbiological methods.

606. (206.) Physiological Bases of Diet Therapy (3)
Prerequisite: Family Studies and Consumer Sciences 406. Chemistry 361B or 560B is recommended.
The biochemical and/or physiological lesions in pathological states and the modifications of diet which should accompany medical treatment to prevent or alleviate patient symptoms.

607. (207.) Child Nutrition (3)
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 402.
Nutrition, health, and biochemical growth in children. Conditions leading to malnutrition, the prevention and correction of same.

608. (208.) Advanced Readings in Nutrition (3)
Prerequisite: Family Studies and Consumer Sciences 402.
Reading and analysis of selected research in nutrition.

Home Economics

615. (215.) Seminar: Clothing (3)
Prerequisite: Nine units in the area of clothing.
Selected problems in the field of clothing.

681. (281.) Seminar: Home Economics Education (3)
Prerequisite: Eighteen units in family studies and consumer sciences.
The study and evaluation of home economics research and philosophical principles which have implications for the secondary homemaking teacher.

682. (282.) Current Development in Home Economics Education (3)
Prerequisite: Eighteen units in Family Studies and Consumer Sciences.
Current issues and recent developments in home economics education with implications for secondary and post-high school programs.

Family Studies and Child Development

631. (231.) Family Life and Sex Education (3)
Prerequisite: Six units in child development and family relations.
Content, resources and alternative methods of presentation of family life and sex education for schools, colleges, churches and social agencies.

634. (234.) Seminar: Marriage Adjustment (3)
Prerequisite: Family Studies and Consumer Sciences 335.
Individual study, seminar reports, and group discussion of selected topics in marriage adjustment.

670. (270.) Seminar: Child Development and Guidance (3)
Prerequisite: Family Studies and Consumer Sciences 270 and 579.
Emphasis on personality theories and on research and clinical findings relevant to a systematic study of human development and the guidance of children.

671. (271.) Advanced Readings in Human Development (3)
Prerequisites: Family Studies and Consumer Sciences 270 and 579.
Analysis of selected research in human development.

700. (290.) Research Methods (3)
Prerequisite: Twelve upper division or graduate units in Family Studies and Consumer Sciences.
Analysis of research in the area of Family Studies and Consumer Sciences; criteria and procedures for conducting research.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with the director and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
French

In the College of Arts and Letters

Faculty
Emeritus: Brown
Professors: Max, Messier, Nelson, Piffard
Associate Professors: Branen, Glasgow, Jackson (Chairperson)
Assistant Professors: Gilhabert, Palmer, Woodle

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 64 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.
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 or general education.

French Major
For the Single Subject Teaching Credential in Foreign Languages
All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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. 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, and nine units of upper division courses in the language.

High School Equivalents
High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.
The first two years of high school French may be counted as the equivalent of French 101; three years the equivalent of French 102; and four years the equivalent of French 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

LOWER DIVISION COURSES
Native speakers of French will not receive credit for taking lower division courses except with advance approval from the department.
All 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.
Prerequisites: French 101 or two 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

Prerequisites: French 202 and 212.
Advanced grammar and stylistics; intensive writing practice; reports based on outside reading.

Prerequisites: French 202 and 212.
Important movements, authors, and works in 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.

401. (150.) Advanced Phonetics and Diction (3) Irregular
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.

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. (148.) Applied French Linguistics (3)
Prerequisites: French 311A-311B.
Phonemics, morphemics, syntax and semantics of present day French.
### GRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>496</td>
<td>Topics in French Studies</td>
<td>Prerequisites: French 311A-311B (when offered in French).</td>
<td>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.</td>
</tr>
<tr>
<td>499</td>
<td>Special Study</td>
<td>(1-3) I, II. 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.</td>
<td></td>
</tr>
<tr>
<td>501A-501B</td>
<td>French Poetry</td>
<td>Prerequisites: French 311A-311B.</td>
<td>The French poetic tradition and its development from the Middle Ages to the present.</td>
</tr>
<tr>
<td>511</td>
<td>Renaissance and Baroque Literature</td>
<td>Prerequisites: French 311A-311B.</td>
<td>Readings from the major writers of the Renaissance and Baroque periods.</td>
</tr>
<tr>
<td>521A-521B</td>
<td>Seventeenth Century French Literature</td>
<td>(3-3) Prerequisites: French 311A-311B. Semester I: Major seventeenth century dramatists with emphasis on Corneille, Molière, and Racine. Semester II: Major works of seventeenth century poets and prose writers.</td>
<td></td>
</tr>
<tr>
<td>531A-531B</td>
<td>Eighteenth Century French Literature</td>
<td>(3-3) Prerequisites: French 311A-311B. The works of Montesquieu, Voltaire, Rousseau, the Encyclopedists, as well as the theatre and novel of the period. Outside reading and reports.</td>
<td></td>
</tr>
<tr>
<td>541A-541B</td>
<td>Nineteenth Century French Novel</td>
<td>(3-3) Prerequisites: French 311A-311B. Major novelists of the nineteenth century.</td>
<td></td>
</tr>
<tr>
<td>551</td>
<td>Twentieth Century French Novel</td>
<td>(3) Prerequisites: French 311A-311B. Major novelists of twentieth century France.</td>
<td></td>
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<tr>
<td>552</td>
<td>Twentieth Century French Theatre</td>
<td>(3) Prerequisites: French 311A-311B. Major dramatists of twentieth century France.</td>
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</tbody>
</table>

### PREREQUISITES

- Eighteen upper division units in French.
- Consent of staff.

### COURSE DESCRIPTIONS

- **Topics in French Studies**: 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.

- **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.

- **French Poetry**: Prerequisites: French 311A-311B. The French poetic tradition and its development from the Middle Ages to the present.

- **Renaissance and Baroque Literature**: Prerequisites: French 311A-311B. Readings from the major writers of the Renaissance and Baroque periods.

- **Seventeenth Century French Literature**: Prerequisites: French 311A-311B. Semester I: Major seventeenth century dramatists with emphasis on Corneille, Molière, and Racine. Semester II: Major works of seventeenth century poets and prose writers.

- **Eighteenth Century French Literature**: Prerequisites: French 311A-311B. The works of Montesquieu, Voltaire, Rousseau, the Encyclopedists, as well as the theatre and novel of the period. Outside reading and reports.

- **Nineteenth Century French Novel**: Prerequisites: French 311A-311B. Major novelists of the nineteenth century.

- **Nineteenth Century French Theatre**: Prerequisites: French 311A-311B. Intensive study of nineteenth century plays.

- **Twentieth Century French Novel**: Prerequisites: French 311A-311B. Major novelists of twentieth century France.

- **Twentieth Century French Theatre**: Prerequisites: French 311A-311B. Major dramatists of twentieth century France.

### GENERAL COLLEGE

Students interested in enrolling in General College 200 or 400 should contact the faculty adviser of the on-campus association sponsoring the activity. These courses may not be used to satisfy course requirements for the major or minor. No combination of General College 200 and 400 in excess of six units may be counted for credit on a bachelor's degree program.

- **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. No combination of General College 200 and General College 400 in excess of six units may be counted for credit in a bachelor's degree program.

- **Topics in French Literature**: Prerequisites: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

- **Seminar in Eighteenth Century French Literature**: Prerequisites: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

- **Seminar in Nineteenth Century French Literature**: Prerequisites: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

- **Seminar in Twentieth Century French Literature**: Prerequisites: Eighteen upper division units in French. Study of movement, genre, theme, myth or individual author. May be repeated with new content. Maximum credit six units applicable on a master's degree.

- **Topics in French Literature**: Prerequisites: Eighteen upper division units in French. Study of movement, genre, theme, myth or individual author. May be repeated with new content. Maximum credit six units applicable on a master's degree.

- **Topics in French Language**: Prerequisites: Eighteen upper division units in French. The history of the French language from the beginnings through the sixteenth century.

- **Methods of Literary Criticism**: Prerequisites: Eighteen upper division units in French. Theory and practice of various traditional and modern critical approaches to specific literary texts.

- **Medieval French Literature**: Prerequisites: Eighteen upper division units in French and French 611. Readings in the principal movements and genres of medieval French literature from the beginnings through François Villon.

- **Literature of the French Renaissance**: Prerequisites: Eighteen upper division units in French and French 611. Literature and thought of the 16th century as represented in the works of Rabelais, Montaigne, Ronsard, Du Bellay, etc.
Geography

In the College of Arts and Letters

Faculty
Emeritus: Molitor, Post, Richardson, Storm
Professors: Eidenmiller, Finch, Greenwood, Keen (Chairman), Kiewiet de Jonge, O'Brien, Taylor, Wright, Yahra
Associate Professors: Blick, Ford, Heiges, Johnson, Pryde, Quastler, Stutz
Assistant Professors: Colombo, Fredrich, Griffin, McArthur
Lecturer: Klee

Offered by the Department

Master of Arts degree in geography
Major in geography with the A.B. degree in liberal arts and sciences.
Minor in geography.

Geography Major

With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 64 of this catalog. Students majoring in geography must complete a minor in another field to be approved by the major adviser.

Preparation for the major. Geography 101 and 102. (6 units.) Four to six units selected from Geography 103, 104, 105, 154 and 170 are strongly recommended.

Major. A minimum of 24 upper division units in geography to include three units from courses numbered 501-509; three units from courses numbered either 310-311, 350-371, or 551-576; three additional units from either of the above groups; three units from courses numbered 320-339; three units from 382, 583, 587, 589; three units from 380 or 381; three units from 498 taken from three different instructors; and three units of electives.

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 or general education.

LOWER DIVISION COURSES

101. (14) Introduction to Physical Geography (3) I, II
The nature of maps, weather and climates of the world; natural vegetation; land forms and their associated soils, with reference to their climatic relationships; the seas and their coasts. Related field observations.

102. (14) Introduction to Cultural Geography (3) I, II
Introduction to cultural geography, covering the elements of culture, such as technology, race, language, religion, political organization, methods of livelihood, settlement patterns and population, and the regional distribution of these elements over the earth. A maximum of six units will be allowed for Geography 102 and 312A or 312B.

103. (3) Introduction to Meteorology (3) I, II
The composition, structure, and circulation of the atmosphere, including elementary theory of storms and other weather disturbances. May be followed by, or taken with, Geography 104.

104. (4) Introduction to Meteorology Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Geography 103.

105. (5) Physical Geography Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Geography 101.
Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. Designed to supplement Geography 101.

154. (54) Urban Geography (3) I, II
Prerequisite: Geography 101 or 102.
The principles and concepts of urban geography, the origin and development of cities, urbanization, and urban problems. Not open to students with credit in Geography 354.

170. (7) Man and the Environmental Problem (3) I, II
Man's impact upon and interaction with the natural environment, including suggested alternatives to existing abuses.

180. (18) Basic Map and Aerial Photograph Reading (3)
Two lectures and three hours of laboratory.
The nature and use of maps and aerial photographs in geography.

299. (99) Experimental Topical (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (110) Historical Geography (3) I, II
Prerequisite: Geography 101 or 102.
Transformation of the natural and cultural landscape with emphasis on the utilization and significance of resources. Exploration, migration, and settlement in relation to geographic phenomena.

311. (111) Principles of Geographical Analysis (3)
Prerequisites: Geography 101 and 102.
Major concepts and techniques of the field of geography.

312A-312B. (112A-112B) Culture Worlds (3-3)
The evolution, distinguishing cultural characteristics, and physical features of the major cultural regions of the world, with emphasis on the role man has played in the alteration of the natural landscape. Maximum credit of six units will be allowed for Geography 102 and 312A or 312B.

320. (120) California (3) I, II
Prerequisite: Geography 101 or 102.
Systematic and regional analysis of the topography, climate, natural vegetation, and their relationships with the past and present activities of man and his use of the land; field trip. Offered in summer with a 10-day tour.

321. (121) United States (3) I, II
Prerequisite: Geography 101 or 102.
The natural regions of the United States, their formation and economic and historical development.

322. (122) Canada and Alaska (3) II
Prerequisite: Geography 101 or 102.
The physical and historical bases of Canadian and Alaskan regionalism; the economic and strategic importance of these two areas.

323. (123) Middle America (3) I, II
Prerequisite: Geography 101 or 102.
The land and peoples of Mexico, Central America, and the islands of the Caribbean; a survey of the resources, economies, and trade of the region.

324. (124) South America (3) I, II
Prerequisite: Geography 101 or 102.
The physical regions and human geography of South America, including the history of colonization and the exploitation of resources.

325. (119) Geography of San Diego County (3)
Saturday field trips to be arranged.
Prerequisites: Geography 101 and 102.
Analysis of the physical and cultural geographic aspects of San Diego County. Completion of Geography 501, 505, 508, and 509 will be helpful to students enrolling in this course.
503. (103.) **Fluvial and Eolian Physiography** (3)
Prerequisites: Geography 101 and Geology 100 and 101, or Geology 100 and Geography 105.
Flowing water and the wind as agents in shaping the land. Transportation of material by water and air, drainage basin characteristics, river channel shape and dimension, sand dunes, and loess.

504. (104.) **Coastal and Submarine Physiography** (3)
Prerequisites: Geography 101, and Geology 100 and 101, or Geology 100 and Geography 105.
Marine physiographic processes and their effects on developing the landforms of coasts, continental shelves, and ocean floors.

505. (105.) **Geography of Soils** (3) II
Prerequisite: Geography 101.
The nature, properties and distribution of soils and their relationships to the influence of climates, landforms, and human activity.

506. (106.) **Geography of Soils Laboratory** (1)
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geography 505.
Theories of soil genesis, edaphology and structure related to empirical phenomena through laboratory experimentation and observation. Best suited to concurrent enrollment in Geography 503.

507. (107.) **Geography of Natural Vegetation** (3) I, II
Prerequisite: Geography 101.
The natural vegetation associations of the world, their distribution, classification and development, including relationship to human activities.

508. (108.) **Physical Climatology** (3) I
Prerequisite: Geography 103.
Effects of latitude, altitude, mountains, ocean currents, wind systems, and various surfaces on the distribution of solar radiation, temperature, precipitation, and other climatic elements.
Statistical reduction and interpretation of climatic data.

509. (109.) **Regional Climatology** (3) II
Prerequisite: Geography 103.
The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

551. (153.) **Location Analysis and Geographic Theory** (3)
Prerequisite: Geography 311.
Spatial arrangement and interrelationships of resources, production, exchange and consumption of goods and services, and a study of location theory in economic geography.

554. (157.) **Quantitative Methods of Urban Analysis** (3)
Prerequisites: Geography 552 or 556, and 583.
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.

555. (155.) **Urban Location and Settlement Geography** (3)
Prerequisite: Geography 154 or 354.
Analysis of urban and other agglomerated settlements in terms of their spatial arrangement, principal functions, economic base, and supporting areas.

556. (136.) **Internal Spatial Structure of Cities** (3)
Prerequisite: Geography 154 or 354.
Geographic principles and characteristics concerning the internal structure and functioning of urban centers, including discussions of internal problems of our cities today. Field reconnaissance in the local urban "laboratory."

558. (160.) **Advanced Transportation Geography** (3)
Prerequisite: Geography 358 or 559.
Topics in the spatial analysis of transportation, e.g., spatial interaction patterns, diffusion process, models in spatial analysis.
GRADUATE COURSES

600. (205.) Geographic Research and Techniques of Presentation (3)
Prerequisite: Approval of departmental graduate advisory committee.
Seminar in the use of research materials in the different aspects of geography and the
effective presentation of research findings in written and oral form.

601. (255.) Seminar in Geophysics (3)
Prerequisite: One course in geophysics and consent of instructor.
Directed study and research on selected topics in geophysics.

608. (204.) Seminar in Advanced Physical Climatology (3)
Prerequisites: Geography 508 and approval of departmental graduate advisory committee.
Characteristics of climatic elements for a selected area of climatic type, and a statistical
analysis of the elements studied. Maximum credit six units applicable on a master's degree.

609. (206.) Seminar in Advanced Regional Climatology (3)
Prerequisites: Geography 509 and approval of departmental graduate advisory committee.
Selected regions. An interpretation of regional variations of world climatic patterns.
Maximum credit six units applicable on a master's degree.

610. (210.) History of Geography (3)
Prerequisite: Approval of graduate adviser.
The evolution of concepts concerning the nature, scope, and methodology of geography.

620. (220.) Seminar in Regional Geography (3)
Prerequisite: Approval of departmental graduate advisory committee.
Intensive study of a major world region, such as South America, Southeast Asia, or
Northern Europe. Maximum credit six units applicable on a master's degree.

650. (255.) Seminar in Systematic Geography (3)
Prerequisite: Approval of departmental graduate advisory committee.
Intensive study of an aspect of systematic geography, such as climatology, economic
geoecraphy, or graphic presentation. Maximum credit six units applicable on a master's degree.

654. (255.) Seminar in Urban and Settlement Geography (3)
Prerequisites: Geography 555 or 556 and approval of departmental graduate advisory
committee.
Selected topics in urban geography. Field reconnaissance in the local urban “laboratory” is
essential part of the research undertaken.

655. (256.) Seminar in Location of Urban Activities (3)
Prerequisites: Geography 356 and approval of departmental graduate advisory committee.
Systematic analysis of the locations and linkages of activities in urban areas.

658. (258.) Seminar in Geography of Transportation (3)
Prerequisite: Geography 358.
Directed study and research on selected topics in transportation geography.

659. (259.) Seminar in Urban Transportation (3)
Prerequisites: Geography 559 and approval of departmental graduate advisory committee.
Intensive study and research on topics in urban transportation geography. Emphasis on
transport innovations and their impact on urban spatial patterns.

660. (260.) Seminar in Spatial Structure of Transport Systems (3)
Prerequisites: Geography 358 and approval of departmental graduate advisory committee.
Transportation systems and networks, optimal route patterns, and commodity flows.

670. (272.) Seminar in Environmental Quality (3)
Prerequisites: Geography 170 and three upper division units in geography, or 370, and
approval of departmental graduate advisory committee.
Geographic factors affecting environmental quality, such as congestion, crowding, and
pollution.

671. (270.) Seminar in Theory of Resource Use (3)
Prerequisites: Geography 170 and three upper division units in geography, or 370, or 371,
and approval of departmental graduate advisory committee.
Selected topics in resource use. Emphasis on conflicts between resource systems and
conservation philosophies.
Geology
In the College of Sciences

Faculty
Emeritus: Brooks
Professors: Berry, Gastil, Krummenacher, McEuen, Peterson (Chairman), Roberts, Thomas, Threat
Associate Professors: Abbott, Frederiksen, Kern, Pucek
Assistant Professors: Bertine, Dorman, Ganus, Walawender
Lecturer: Schebout

Offered by the Department of Geological Sciences
Master of Science degree in geology.
Minor in geology.

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 64 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) Paleontology, (c) Geophysics, (d) Geochemistry, and (e) Engineering Geology.

Basic Requirements for all Students
Preparation for the major. Geology 100 and 101, 105, 221, 224; Biology 100 and 100L; and Chemistry 200A-200B. (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 Geology 305, 307, 308, 395A-395B, 508. (16 units.) Other courses may be substituted for 498A-498B and 508 in the geophysics option and for 498A-498B in the engineering 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. Geology 230 (or Geology 530 may be taken in the major); Mathematics 119 and 150; Physics 124A-124B and 125A-125B, or Physics 195A-195B-195C. Recommended: Chemistry 310A-310B or 410A-410B; Mathematics 107, 151, 152; Physics 195A-195B-195C.
Major (continued). Geology 506, 507, 524, 525, 530 (if Geology 230 not taken under preparation for the major), and at least one of the following: Geology 314, 502, 505, 520, 521, 526, 540, 550, 551, or 560. Electives approved by the departmental adviser to complete 36 upper division units.

(b) Paleontology

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 195A-195B-195C. Recommended: Chemistry 310A-310B or 410A-410B; Mathematics 107, 151, 152; Physics 195A-195B-195C.
Major (continued). Geology 506, 507, 516 or 573, 526, and three courses from the following: Biology 520, 531; Botany 572; Zoology 506, 510, 560.

(c) Geophysics

Major (continued). Geology 510, 512, 520, 521, 530; Mathematics 530; Physics 350B, 357; either Mathematics 531 and Physics 520, or Physics 350A and 542. Recommended: Engineering 318.

(d) Geochemistry

Major (continued). Geology 530; Chemistry 410A-410B; either Geology 506 and 526, or Geology 524 and 525; six units of electives approved by the departmental adviser. Recommended: Geology 531.

(e) Engineering Geology

Additional preparation for the major. Geology 230; Engineering 150 or 151, 160, 200; Mathematics 150, 151, 152; Physics 195A-195B-195C, or 195C and 195E. (35 units.)
Major (continued). Geology 510 or 512, 526, 550; Engineering 306, 318, 414, 416; either Engineering 415 or Geology 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 Engineering 306, 414 and 416.

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 or general education.

LOWER DIVISION COURSES

100. (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.
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geology 100.
Recognition of common earth features and materials with experience in both field and map relationships. Designed to accompany and augment Geology 100. Not open to students with previous laboratory credit in geology.

105. (3) Historical Geology (4) I, II
Three lectures and three hours of laboratory. Arrangement for field study during the semester.
Prerequisites: Geology 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. (3) 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 Geology 101.

221. (2) Mineralogy (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Credit or concurrent registration in Geology 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. (2) Petrology (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geology 100 and 101; and credit or concurrent registration in Geology 221.
The origin, occurrence, identification, and classification of rocks in hand specimen.
300. (166.) Honors Course (1-3) I, II
Refer to Honors Program.

301. Geology of National Parks and Monuments (3) I
Prerequisites: Geology 100 and 101.
Geology of a group of national parks and monuments, selected for their geological significance, scenic beauty, and visitor popularity. (Not acceptable for a major in geology but acceptable for a minor in geology.)

303. Environmental Geology (3) I, II
Prerequisites: Geology 100 and 101.
Study of geologic processes and man, including landslides, flooding, earthquakes, and ground water resources.

305. (166.) Structural Geology (3) I, II
Two lectures and three hours of laboratory per week with occasional field trips.
Prerequisites: Geology 105 and trigonometry.
Structural features of the earth, both deformational 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: Geology 305 and credit or concurrent registration in Geology 224.
Techniques and methods of geologic observation, interpretation, and field mapping.

314. (104.) Geomorphology (3) I
Prerequisite: Geology 105.
Development and classification of landforms with consideration of processes involved.

318-S. (118-S.) Summer Field Problems (4-6)
Prerequisites: Geology 308 and consent of instructor.
Field techniques in the investigation of selected geological problems. This course cannot be substituted for Geology 508.

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 (1-3) 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 Cr/NC
Prerequisite: Consent or concurrent registration in Geology 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: Geology 498A and credit or concurrent registration in Geology 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.

502. (102.) Geology of North America (3) I
Prerequisite: Geology 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) I
Two lectures and three hours of laboratory.
Prerequisites: Geology 305 and 314.
Geologic interpretation of aerial photographs, elementary stereoscopy and stereometry applied to structural and stratigraphic problems, and compilation of geologic maps from annotated aerial photographs.

506. (106.) Paleontology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Geology 105 and Biology 100 and 100L.
Principles and methods, exemplified by a study of the morphology, classification, habit, and geologic significance of fossil invertebrates.

Vertebrate Paleontology, see Zoology 560.

507. (107.) Stratigraphy (3) I
Two lectures and three hours of laboratory.
Prerequisites: Geology 105 and 224.
Stratigraphic principles and practices. Consideration of the North American stratigraphic record.

508. (108B.) Field Geology (4) I, II
Prerequisite: Geology 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: Geology 305, Mathematics 152, Physics 195A-195B-195C.
Airborne, surface, and bore-hole geophysical techniques as presently used in oil exploration.

512. (112.) Mining Geophysics (3) I
Two lectures, and three hours of laboratory or occasional field trips.
Prerequisites: Geology 305, Mathematics 152, Physics 195A-195B-195C.
Airborne, surface, and bore-hole geophysical techniques used for delineation of ore bodies.

516. (116.) Micropaleontology (3) II
One lecture and six hours of laboratory.
Prerequisite: Geology 506.
The morphology, classification and geologic significance of the various microfossils.

520. (120.) Ore Deposits (3) I
Prerequisites: Credit or concurrent registration in Geology 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 Geology 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: Geology 221.
Theory and use of the polarizing microscope for determining optical properties of minerals as an aid to their identification.

525. (125.) Petrology (4) II
Three lectures and three hours of laboratory.
Prerequisite: Geology 524.
a study of rocks with the polarizing microscope; identification of mineral constituents; interpretation of textures; classification of rocks; problems of genesis.
526. (125.) Sedimentology (3) I
Two lectures and three hours of laboratory.
Prerequisite: Geology 105 and 224.
Origin, description, and classification of sedimentary rocks and structures.

530. (115.) Geochemistry (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geology 224; Chemistry 200B; Mathematics 121 and 122, or 150.
The relationship of basic chemical principles to geologic phenomena and environments, including applications to geologic exploration problems.

531. (115.) Advanced Geochemistry (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geology 320.
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: Geology 105, and either Geology 224, 314, 502, or 506.
The morphology, composition, structure, history, and geologic processes of the earth beneath the sea.

550. (150.) Engineering Geology (3) I
Two lectures and several weekend field trips.
Prerequisite: Geology 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: Geology 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 200A-200B; Mathematics 150; Physics 124A-124B and 125A-125B, or 195A-195B-195C; and credit or concurrent registration in either Chemistry 301 or 410, Engineering 210, Geology 221, or Physics 354.
Theory and application of x-ray diffraction to the study of materials.

573. (172.) Advanced Palynology (3) II
One lecture and six hours of laboratory.
Prerequisite: Botany 522.
Investigating problems in anthropology, botany and geology using spores, pollen grains and microplankton.

GRADUATE COURSES

600. (200.) Seminar (1-3)
Prerequisite: Consent of instructor.
An intensive study in advanced geology, topic to be announced in the class schedule.

608. (208.) Graduate Field Geology (3)
One lecture and nine Saturday field sessions.
Prerequisite: Geology 508.
Experience in one or more specialized aspects of field mapping.

609. (209.) Igneous Petrology (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 525.
Investigation of problems in igneous petrology, using petrography, geochemistry, and experimental methods.

611. (211.) Metamorphic Petrology (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 525.
Investigation of problems in metamorphic petrology using petrography, geochemistry, and experimental methods.

612. (212.) Petrology of Carbonates (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 524 and 526.
Thin-section and hand-specimen description and classification of carbonate rocks and other chemical sediments. Emphasis on recent depositional processes, diagenesis, and geochemistry.

620. (220.) Biostatigraphy (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 507.
Development of concepts and practices in stratigraphic and geochronologic synthesis critically reviewed in context of current knowledge of the fossil record.

625. (225.) Paleoeocology (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 506 and Biology 520.
Problems and methods in the study of relationships between fossil organisms and their environment: interpretation of paleoenvironment, paleoclimate, and biologic relationships among fossil organisms.

629. (229.) Seminar: Advanced Studies in Stratigraphy (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 507.
Regional stratigraphic patterns in North America and their historical implications.

635. (235.) Petrology of Terrigenous Rocks (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 524 and 526.
Thin-section and hand-specimen description and classification of sandstones and mudrocks. Emphasis on mineralogy, modern depositional processes, environmental interpretation, and paleogeographic reconstruction.

640. (240.) Geotectonics (3)
Prerequisite: Geology 305.
A consideration of topics on continental genesis and evolution, orogeny, plate tectonics and a survey of classic geologic provinces.

645. (245.) Advanced Structural Geology (3)
Prerequisite: Geology 305.
Topics in advanced structural geology in the light of petrography, geophysical, and experimental data, combined with classic field observations.

650. (250.) Seminar: Physical Properties of Earth Materials (3)
Prerequisite: Geology 510 or 512.
Theoretical principles and instrumental techniques used to remotely determine the physical properties of earth materials.

660. (260.) Isotope Geology (3)
Two lectures and three hours of laboratory.
A survey of isotopic and geochronologic topics with individual projects in isotopic analysis.

670. (280.) Sedimentary Geochemistry (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 530.
Problems in low temperature geochemistry, including clay mineralogy and diagenesis.

685. (285.) Genesis of Ore Deposits (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 520, 525, and Geology 530 or four units of physical chemistry.
Application of mineralogy, petrography, and chemistry to an understanding of the origin of ore deposits.

797. (297.) Research (1-3) Cr/NC
Prerequisite: Consent of the department.
Supervised research in an area of geology. Maximum credit six units applicable on a master's degree.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a thesis for the master's degree.
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

German

In the College of Arts and Letters

Faculty

Emeritus: Walker
Professors: Boney, Kozlik (Chairman), Lawson, Paulin, Schaber, Tanaka, Westervelt, Wolf, Wulber
Associate Professor: Dunkle
Assistant Professor: Cross
Lecturers: Frederikson, Wolter

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 64 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)

Major. A minimum of 24 upper division units in German to include German 301A, 301B, 311A-311B, and 12 units in additional literature courses excluding German 490, 493 and 495; or a minimum of three units in additional literature courses (with exclusions as above) 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 or general education.

German Major

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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 German major for the single subject teaching credential in foreign languages are being revised. For further information consult the department.

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

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 course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.
LOWER DIVISION COURSES

Native speakers of German will not receive credit for taking lower division courses in German except with advance approval from the department.

101. (1) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: German 101 or two years of high school German.
Continuation of German 101. Not open to students who have completed four years of high school German.

102. (2) Elementary (4) I, II
Four lectures and one hour of laboratory.
Prerequisite: German 102 or four years of high school German.
Continuation of German 101. Not open to students who have completed four years of high school German.

105. Elementary (8) I
Eight lectures and two hours of laboratory.
The elements of German; oral emphasis. A one-year course concentrated in one semester. Primarily for credential candidates in German.

203. (3) Intermediate (4) I, II
Prerequisite: German 102 or 105 or three years of high school German.
Practical application of the basic principles of the language. Oral practice, reading in German of cultural material.

204. (4) Intermediate (4) I, II
Prerequisite: German 203 or four years of high school German.
Continuation of German 203.

206. (68) Scientific Reading (2)
Prerequisite: German 102 or 105 or three years of high school German.
Readings taken from the fields of biology, chemistry, medicine, physics, zoology, etc.

210. (10) Conversation (2) I, II
Prerequisite: German 102 or three years of high school German.
Practice in the spoken language with emphasis on the articulation of German sounds; practical vocabulary; conversation on everyday cultural topics.

211. (11) Conversation (2) I, II
Prerequisite: German 203 or 210, or four years of high school German.
Continuation of German 210.

299. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

301A-301B. (101A-101B) Grammar and Composition (3-3)
Prerequisites: German 204 and 211.
Grammar and stylistics; intensive writing practice; reports based on outside reading.

311B. (102A-102B) Survey of German Literature (3-3)
Prerequisite: German 204.
Important movements, authors, and works in German literature from the Middle Ages to the present.

403A-403B. (125A-125B) Advanced Oral and Written German (2-2)
Prerequisite: German 301A-301B.
Advanced forms of oral and written German.

490. (44) 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. (45) Modern German Literature (3)
Outstanding modern German writers, including Nietzsche, Rilke, Hesse, Kafka, Mann, Brecht, and others. Taught in English.

495. (45) 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in German available in any given semester.

505. (188) 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)
Prerequisite: German 204.
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

600. (290) Research and Criticism (3)
Prerequisite: Twelve upper division units in German.
Purpose and methods of research in the language and in the literature; theories and practice of literary criticism. Recommended for the first semester of graduate study.

601. (201) History of the German Language (3)
Prerequisite: Twelve upper division units in German.
The historical development of the German language, with source readings from the Gothic Bible to Luther's translation of the Bible.
610. (202.) Middle High German (3)
Prerequisite: Twelve upper division units in German or six upper division units in linguistics.
The grammatical structure of Middle High German; reading and analysis of selected literary works.

620. Gothic (3)
Prerequisites: German 610 or 601 or three graduate units in linguistics or six upper division units in linguistics.
Phonology, grammar and reading of Gothic texts; the relationship of Gothic to Indo-European and to other Germanic languages.

650. (207.) Renaissance and Baroque Literature (3)
Prerequisite: Twelve upper division units in German.
German literature of the sixteenth and seventeenth centuries.

655. (208.) Goethe (3)
Prerequisite: Twelve upper division units in German.
Goethe’s lyric, epic, and dramatic poetry excluding Faust.

665. (209.) The German Drama of the Nineteenth Century (3)
Prerequisite: Twelve upper division units in German.
Representative works of German dramatic literature from Kleist to Hauptmann.

670. (210.) German Lyric Poetry from Hölderlin to Rilke (3)
Prerequisite: Twelve upper division units in German.
The major German lyric poets from the beginnings of Romanticism to Rilke.

675. (211.) The German Novel (3)
Prerequisite: Twelve upper division units in German.
The development of the Novel as a literary form from Goethe to the present.

680. (212.) The German Novel in the Twentieth Century (3)
Prerequisite: Twelve upper division units in German.
Selected German novels of the twentieth century.

700. (265.) Seminar in Germanic Linguistics (3)
Prerequisite: Eighteen upper division units or graduate units in German.
Directed research in a specialized area of Germanic linguistics or philology. Maximum credit six units applicable on a master’s degree.

710. (251.) Seminar in Eighteenth Century Literature (3)
Prerequisite: Eighteen upper division units in German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the eighteenth century. Maximum credit six units applicable on a master’s degree.

720. (255.) Seminar in Nineteenth Century Literature (3)
Prerequisite: Eighteen upper division units in German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the nineteenth century. Maximum credit six units applicable on a master’s degree.

730. (260.) Seminar in Twentieth Century Literature (3)
Prerequisite: Eighteen upper division units in German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the twentieth century. Maximum credit six units applicable on a master’s degree.

797. (267.) Research (3) Cr/NC
Prerequisite: Advancement to candidacy.
Individual research in a specialized subject in German literature or linguistics.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Eighteen upper division units in German and consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master’s degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
Greek

In the College of Arts and Letters

Faculty
Professors: Schaber, Warren
Associate Professors: Eisner, Genovese

Offered by the Department of Classical and Oriental Languages and Literatures

Courses in Greek.

Major and minor work in Greek is offered under classics. (Refer to this section of the catalog under Classics.)

LOWER DIVISION COURSES
(See also courses in classics.)

101. (1) Elementary (5) I
Introduction to ancient Greek, emphasizing grammatical foundations of New Testament and Attic prose. Aimed toward rapid comprehension.

202. (2) Elementary (5) II
Prerequisite: Greek 101.
Continuation of Greek grammar with selections illustrating syntax and style.

299. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

303. (103) Readings in Greek Prose (3) I
Prerequisite: Greek 202.
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.

304. (104) Readings in Greek Poetry (3) II
Prerequisite: Greek 303.
Readings selected from Greek masterpieces in epic, elegy, tragedy. Authors may include Homer, Sophocles, Euripides.

440. (106) New Testament Greek (3)
Prerequisite: Greek 202.
Study of Koine and Byzantine Greek characteristics with selected readings from New Testament and ecclesiastical sources.

450. (155) 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.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (109) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor.

Health Science and Safety

In the College of Professional Studies

Faculty
Emeritus: Kitzinger
Professors: Burgess (Chairman), Grawunder, Harper, McTaggart
Associate Professors: Barnes, Bender, Boskin, Fellers, Keister, Noto, Sorochan
Assistant Professor: Beasley
Lecturer: Sleet

Offered by the Department

Master of Arts degree in health science.
Major in health science with the B.S. degree in applied arts and sciences.
Minor in health science.
Teaching major in health science for the single subject teaching credential in social science.

Health Science Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 64 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, 351, 352, 353, 354, 400 and 545; Psychology 320; 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 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 and 545; Psychology 320; 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 402; 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 560.

Courses in the minor may not be counted toward the major or general education.

Health Science Major

For the Single Subject Teaching Credential in Social Science

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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. 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. (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 462; 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. (2.) 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, firefighters, 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
Two lectures and three hours of laboratory.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

301. (122.) Concepts of Health Science (3) I, 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.) 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.
471. Death Education (3) I
Cultural, psychological, physical and personal aspects of death with emphasis on educational approaches.

490. (196.) Measurement and Evaluation in Health Science and Safety (3)
General and specific approaches to measurement in health science and safety: data gathering techniques; organization; presentation and interpretation of data; basic principles of evaluation of student achievement.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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 special study adviser.

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. (155.) 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, responsibilities, 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.

600. (200.) Seminar (3)
Prerequisite: Fifteen units in Health Science and Safety.
An intensive study of advanced problems in health education. Maximum credit six units applicable on a master's degree.

601. (201.) Interdisciplinary Factors in Health Education (3)
Prerequisite: Fifteen units in Health Science and Safety.
Synthesis of basic scientific and cultural principles which contribute to an understanding of human well-being and how it is deliberately influenced.

620. (252.) Health Science Curriculum Development (3)
Prerequisite: Health Science and Safety 320 or 321.
Structuring educational experiences in the health sciences; developing curriculum materials, performance standards and ways of incorporating health education in open learning environments.

640. (240.) Administration of Traffic Safety (3)
Prerequisite: Health Science and Safety 347 and 545.
Research and trends in traffic safety with emphasis on the problems of administration.

645. (245.) School Safety Programs and Procedures (3)
Prerequisite: Health Science and Safety 545.
Advanced consideration of school safety programs including legal bases and requirements, personnel responsibilities, liability, instruction, maintenance, and school transportation.

660. (264.) Program Planning and Evaluation in Community Health Education (3)
Prerequisite: Health Science and Safety 560.
Program planning and evaluation theories, systems and techniques in community health education.

671. (270.) Problems in Disease Control (3)
Prerequisite: Health Science and Safety 470.
New concepts in the community management of disease. Individual investigation and discussion.

672. (271.) Drug Abuse Education (3)
Prerequisite: Health Science and Safety 574.
Drug abuse education in the school and community.

791. (291.) Health Science and Safety Research (3)
Prerequisites: Health Science and Safety 490 and advancement to candidacy. Methods and techniques of research appropriate to health science, the process by which potential problems in health science are analyzed, and the standards for the writing of research papers and theses.

792. (292.) Analysis of Professional Literature (3)
Prerequisite: Health Science and Safety 490.
Investigation and study of literature in the fields which have an important bearing on health science and safety programs in the school and community.

793. (293.) Evaluation Procedures (3)
Prerequisite: Health Science and Safety 490.
Construction, selection and analysis of evaluation instruments in health science and safety.

797. (297.) Research (3) Cr/NC
Prerequisites: Health Science and Safety 791, 792, and advancement to candidacy.
Supervised research in an area of health science and safety. Limited to students following Plan B for the Master of Arts degree in Health Science.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department special study adviser and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A
in which the student expects to use the facilities and resources of the university; also student
must be registered in the course when the completed thesis is granted final approval.

Hebrew
In the College of Arts and Letters

Faculty
Assistant Professor: Gefter
Lecturer: Naveh

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

LOWER DIVISION COURSES

101. (1) Elementary (4) I
Four lectures and one hour of laboratory.
Beginning reading, writing, and conversational skills. Essentials of grammar. Not open to
students who have completed three years of high school Hebrew.

102. (2) Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Hebrew 101.
Continuation of Hebrew 101. Not open to students who have completed four years of high
school Hebrew.

203. (3) Intermediate (4) I
Four lectures and one hour of laboratory.
Prerequisite: Hebrew 102.
Continuation of Hebrew 102. Applications of grammar and reading skills. Additional
practice in conversation.

204. (4) Intermediate (4) II
Four lectures and one hour of laboratory.
Prerequisite: Hebrew 203.
Continuation of Hebrew 203. Completion of conversational and grammar sequences.
Composition and reading for comprehension.

299. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

496. (1185) Topics in Hebrew Studies (1-4)
Topics in Hebrew 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.

History
In the College of Arts and Letters

Faculty
Emeritus: Nasatir, Ragen, Rohlfleisch
Professors: Appleby, J., Berge, Cox, Cox, Detweiler, Hanchett, Merrill, Munter, Norman,
Pincetl, Rader, Ridout, Ruetten, Schatz, Smith, R., Starr, Steele, Strong (Chairman),
Sutherland, Weber
Associate Professors: Check, Chu, Cunniff, Davies, DuFaut, Dunn, Flemion, J., Hamilton,
Hoidal, O'Brien, Smith, C., Stites, Vanderwood, Vartanian
Assistant Professors: Appleby, A., Bartholomew, Filner, Flemion, P., Heyman, McDean,
Oades, Phillips
Lecturers: Cumbler, Hsi, 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.
Major in history with the A.B. degree in liberal arts and sciences.
Minor in history.
Teaching major in history for the single subject teaching credential.

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 84 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.)

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 by the department chairman) and a
minimum of six units in each of three of the following fields: (a) Ancient and Medieval; (b)
Modern Europe; (c) United States; (d) Latin America; (e) South, Southeast, and East Asia; (f)
Africa and the Middle East; (g) Topical Subjects. It is the student's obligation, in consultation
with the department chairman, to determine which courses fulfill his field requirements.

History 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 or general education.

History Major
For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements for the applicable
specialization outlined in the section of this catalog on 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. (44-4B) 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 societies 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. (6A-6B.) 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.

299. (90.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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
Acceptable for Undergraduate Credit Only

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

305A-305B. (105A-105B.) 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. The course satisfies the requirement in Western Civilization but cannot be used to satisfy requirements for the major.

310A-310B. (184A-184B.) 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: Since 1877.

399. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

403. (108.) History Through Film (3)
Critical analysis of selected historical problems, eras 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.
53IA-53IB. (174-175B.) Central and Eastern Europe (3-3)

Prerequisite: History 105A-105B

Semester I: Political, social and cultural 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)

Prerequisite: History 105A-105B

The political and cultural record of the Germanic peoples of Northern and Central Europe from Tacitus 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 is prerequisite to 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.

524A-524B. (155A-155B.) Intellectual History of Modern Europe (3-3)

Selected problems in European intellectual history beginning with the 17th century, with special attention to social and political thought.

527A-527B. (184A-184B.) Diplomatic History of Modern Europe (3-3)

Prerequisite: History 520A-105B.

Diplomatic relations of the various European states with European and non-European powers. Semester I: From the Concert of Europe (1815) to the Era of Realpolitik in the late 19th century. Semester II: The diplomatic backgrounds and results of two wars.

Field (c). 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, institutions and ideals; 532A meets the requirement in U.S. Constitution; and 532B includes materials which meet the requirements in California state and local government.

533A-533B. (173A-173B.) Jacksonian Democracy, Civil War and Reconstruction (3-3)

Semester I: Territorial expansion, democratic politics, revivalism, 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.
55A-55B. (1st-12th centuries) The Middle East (3-3) Development of the Middle East area with emphasis on the 20th century.

55A. (16th century) The Ottoman Empire to 1880 (3) The historical development of the Ottoman Empire to 1880.

55A. (18th century) The West Coast Nations of South America (3) The historical development of South American nations.

55A-56A. (16th-19th centuries) 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: Latin American culture — the Latin American self-image reflected in family relations, folklore, myth, legend, popular music and art and mass expression. Semester II: Intellectual trends and major themes in intellectual history, with a focus on the development of social themes in the major works of literature, history and sociology.

55A-55B. (16th-17th centuries) Diplomatic History of Latin America (3-3) Origins of inter-American 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


56A-56B. (1st-12th centuries) India — Hindu, Muslim, and Modern (3-3) Semester I: Indian civilization from earliest times to the 18th century, emphasizing the growth of Hinduism, challenges from Buddhism and the interaction of Hinduism and Islam under Muslim rule. Semester II: British colonialism, Hindu and Muslim nationalism, Gandhi's significance, the Partition crisis and India and Pakistan since 1947.

56A-56B. (1st-12th centuries) 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.

56A. (1st-12th centuries) Chinese Civilization (3) Chinese internal history and institutions during the period of relative isolation; religions, philosophy, literature and the arts.


56A. (1st-12th centuries) Japanese Civilization (3) Japanese internal history and institutions during the period of indigenous development and Chinese influence including religions, philosophy, literature and the arts.

57A-57B. (1st-12th centuries) Modern Japan (3) Japan's development as a modern state, particularly in the 19th and 20th centuries.

57A-57B. (1st-12th centuries) Intellectual History of Modern Asia (3-3) Asian intellectual history during the 19th and 20th centuries, with special attention to social and political thought.

Field (f). Africa and Middle East

57A-57B. (1st-12th centuries) History of the Near East from the 7th Century to World War I (3-3) Pre-requisite: History 105A-105B. Semester I: The Ottoman Empire to 1878. Semester II: The Ottoman Empire to 1914.

645. (243.) Seminar in Latin American History (3)
Prerequisite: Six upper division units in Latin American history.
Directed research on topics selected from a designated area of Latin American history.
Maximum credit six units applicable on a master's degree.

650. (243.) Directed Reading in Asian History (3)
Prerequisite: Six upper division units in Asian history.
Selected readings in source materials and historical literature in a designated area of Asian history.
Maximum credit six units applicable on a master's degree.

655. (253.) Seminar in Asian History (3)
Prerequisite: Six upper division units in Asian history.
Directed research on topics selected from a designated area of Asian history. Maximum credit six units applicable on a master's degree.

660. (243.) Directed Reading in African and Middle Eastern History (3)
Prerequisite: Six upper division units in African or Middle Eastern history.
Selected readings in source materials and historical literature in a designated area of African or Middle Eastern history. Maximum credit six units applicable on a master's degree.

665. (253.) Seminar in African and Middle Eastern History (3)
Prerequisite: Six upper division units in African or Middle Eastern history.
Directed research on topics selected from a designated area of African or Middle Eastern history. Maximum credit six units applicable on a master's degree.

670. (249.) Directed Reading in Selected Topics (3)
Prerequisite: Consent of the instructor.
Selected readings in source materials and historical literature of various fields of history such as war, science, technology, urbanization, minority groups, immigration, capitalism, conservation, and imperialism. Maximum credit six units applicable on a master's degree.

690. (259.) Seminar in the Philosophy of History (3)
The major philosophies of history and directed research on topics selected from various philosophers of history such as Bury, Collingwood, Croce, Freud, Hegel, Marx, Pareto, Sorokin, Spengler and Toynbee.

795. (296.) Area Studies in History (1-3) Cr/NC
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examinations in the major and minor fields of history for those students taking the M.A. under Plan B. Maximum credit six units applicable on a master's degree.

797. (270.) Research (3) Cr/NC
Prerequisite: Advancement to candidacy and written approval of the History Department graduate coordinator.
Independent research in a specialized subject in history.

798. (268.) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis (3) Cr/NC
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

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.

LOWER DIVISION COURSES
All classes are conducted in English.

130. (30.) The Jewish Heritage (3) I, II
Major Hebrew 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) I
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) II
Integrated survey of contemporary movements in art, literature and mores, comparing American attitudes with traditional genres values, and aesthetics.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

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
Lectures open to the public.
Weekly lectures on literature, language, philosophy and cultural history. Reading and reports required of students enrolled for credit. Maximum credit three units.

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) II
Individual study. Maximum credit six units.
Prerequisite: Consent of the instructor.
Industrial Arts
In the College of Professional Studies

Faculty
Emeritus: Ford, Luce, McLoney
Professors: Anderson, Bailey, Hammer, Irgang, McMullen, Thiel
Associate Professors: Dirksen, Guentzler, Marsters (Chairman), McEowen
Assistant Professors: Blackmun, Ferree, Lybarger, Rasmussen, Sorenson
Lecturers: Bussard, Teague

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

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 64 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 110, 115, 131-140, 151, 161, 171 and 181. (17 units)
Major. A minimum of 24 upper division units to include nine units in each of two of the following fields: industrial drawing, general metalworking, plastics, general woodworking, electricity-electronics, transportation, graphic arts, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 498 and 499.

Industrial Arts Minor
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, industrial drawing, photography, plastics, and graphic arts. Choose electives in consultation with the adviser.
Courses in the minor may not be counted toward the major or general education.

Industrial Arts Major
For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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.
The history and philosophy of industrial arts with emphasis on the current status and development of the secondary school curriculum. Discussion of professional requirements, obligations and development.
106. (6) Survey of Electronics (3)
One lecture and six hours of laboratory.
A nonmathematical survey of electronics, practical utilization of tools and equipment of today's industry.

110. (10) General Crafts (3)
One lecture and six hours of laboratory.
The practical utilization of tools, materials and methods employed in industrial craft areas. The fundamentals of good design.
115. (15) General Plastics (3) I, II
One lecture and 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
One lecture and six hours of laboratory.
The history and philosophy of industrial arts with emphasis on the current status and development. 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
One lecture and 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.

UPPER DIVISION COURSES
300. (166) Honors Course (1-3) I, II
Refer to Honors Program.
301. (101) Industrial Arts Crafts (3) I, II
One lecture and 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, lapidary, leather and mosaics. Stress on creativity in design and in utilization of materials.
305. (105.) Workshop in Instructional Materials (3)
One lecture and six hours of laboratory.
Industrial arts laboratory experiences adapted to individual needs; practice in use of tools
common to problematic needs. Preparation of materials and instructional aids for classroom
use. Not open to industrial arts majors.

315. (115.) Tooling for Plastics Production (3) I, II
One lecture and 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
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 121.
Activities selected to develop individual competence.

331. (131.) Machine Tool Processes (3) I, II
One lecture and 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
Two lectures and three hours of laboratory.
Exposure theory, sensitometry, contrast control, specialized development, distortion and
perspective control, and advanced studies of photographic lenses and equipment.

351. (151.) Machine Woodworking (3) I, II
One lecture and 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
One lecture and 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.) Engines and Drive Trains (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 171.
Advanced study of the operational theory of engines, transmissions and differentials.
Emphasis on precision individual systems overhaul.

381. (181.) Intermediate Graphic Arts (3) I, II
One lecture and 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
One lecture and 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)
One lecture and 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)
One lecture and 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
One lecture and 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
One lecture and 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)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 341.
Technical problems and techniques in photography.

444. (144.) Color Photography (3)
Two lectures and three 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
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 351.
Designed to increase professional skills, craftsmanship, advanced technical skills, and
equipment maintenance procedures.

462. (162.) Advanced Electronics (3)
One lecture and 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)
One lecture and 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)
One lecture and 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
One lecture and 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)
One lecture and 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. 240 hours of clinical training required.

492. (120.) 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.

493. (120.) 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. (150.) 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. (190.) Senior Project (3) I, II
One lecture and 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. (190.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor.

503. (102.) Advanced Industrial Crafts (3)
One lecture and 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.) Thermostat Plastics (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 315.
Composition and selection of materials, evaluation of physical and mechanical properties of various thermostet plastics, special techniques for processing and production of thermostet plastics.

523. (123.) Industrial Arts Drawing (3) I, II
Two lectures and three 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
One lecture and 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)
One lecture and 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
One lecture and 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
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 351.
Industrial arts woodworking resources and materials: experience in industrial arts planning, laboratory and equipment organization, and personnel management.

563. (163.) Industrial Electronics (3)
One lecture and 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
One lecture and 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)
One lecture and 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

600. (200.) Seminar (3)
An intensive study in industrial arts; topic to be announced in the class schedule.

601. (201.) Advanced Teaching Problems (3)
Prerequisites: Teaching experience in area selected and consent of instructor.
Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-radio; (e) transportation; (f) graphic arts; (g) photography; (h) comprehensive industrial arts. Stress on project design and visual materials. Maximum credit six units applicable on a master's degree.

610. (210.) Problems in Industrial Crafts (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 503.
Research in selected areas of industrial crafts with emphasis on instructional materials and techniques. Specifically designed for teachers, recreation workers and therapists.

615. (215.) Problems in Plastics (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 517.
Research with selected plastics processes and materials. Development of projects, aids, resource material, oral and written presentations.

620. (202.) Industrial Arts Problems in Graphics and Design (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 523.
The theories and procedures of industrial drafting, including monographs, descriptive geometry, and graphic solutions. Emphasis on special applications to industrial arts.

630. (203.) Industrial Arts Problems in Machining (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 533.
Problems involved in industrial arts machining. Individual research project dealing with instructional materials or processes.
314 / Industrial Arts

640. (204.) Problems in Photography (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 443, 444 or 542.
Advanced problems in photography in industry and photography in education. Individual research project dealing with instructional materials or industrial processes.

650. (205.) Industrial Arts Problems in Woodworking (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 553.
Intensive study in selected areas of the woodworking industry as it relates to materials, production and construction. Presentation of research findings.

660. (206.) Problems in Electronics (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 463.
Recent developments in the electronics areas. Special research projects and resource materials.

670. (207.) Research in Vehicular Power Systems for Industrial Arts (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 573.
Research in selected areas of the vehicular power systems and effective presentation of findings in oral and written form.

680. (208.) Industrial Arts Problems in Graphic Arts (3)
One lecture and six hours of laboratory.
Prerequisite: Industrial Arts 583.
Selected areas of the graphic arts industry related to materials, production methods, and allied pursuits. Techniques of presentation of findings in effective written and oral form.

720. (220.) History and Philosophy of Industrial Education (3)
A study of the philosophical foundations and development of industrial education and its continuing role in American culture. Contemporary practices and trends will be given consideration.

721. (221.) Curriculum Construction in Industrial Arts Education (3)
Selection of teaching content for school situations in compliance with the best known procedures regarding analysis, objectives, methods and learning, and development of instructional devices related directly to course content.

722. (222.) Instructional Resources for Industrial Arts Education (3)
Survey, selection, and compilation of materials used in the development of resource units for instruction in industrial education, involving publications, organized talks, field trips, visual materials, technical literature and related materials. Organization and evaluation of such materials.

723. (223.) Evaluation in Industrial Arts Education (3)
Principles, methods, and criteria of evaluation including the special problems of measuring growth, achievement, and performance in various phases of industrial education.

724. (224.) Organization, Administration and Supervision of Industrial Education Programs (3)
The principles, objectives, methods and techniques employed in the supervision of industrial education programs. Emphasis on organizing and administering programs at all levels in industry and education.

790. (290.) Research Procedures in Industrial Arts (3)
Location, selection and analysis of scientific and professional literature, research data and specialized bibliographies.

795. (295.) Selected Topics in Industrial Arts (3)
Prerequisites: Industrial Arts 790 and advancement to candidacy for the Master of Arts degree. Study in selected topics of industrial arts culminating in a research paper.

796. (296.) Field Work in Industrial Arts (3)
Prerequisites: Teaching experience in industrial arts and consent of instructor. Application of the principles of laboratory organization, management and planning in reference to the objectives of industrial arts in development of school programs.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

799A. (299) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis in industrial arts for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
### 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 64 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 100A-100B; 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. (46 units.)

**Major.** A minimum of 42 upper division units to include Industrial Technology 321, 361, 374, 423, 455, 497, 591 and 594; Industrial Arts 361, 462, 464, 465, 498, 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. (67 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, 460, 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.

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#### UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>316 (127)</td>
<td>Industrial Design Problems</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 121.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>323 (127)</td>
<td>Technical Illustration</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 121.</td>
</tr>
<tr>
<td></td>
<td>Theory and techniques of axonometric projections with emphasis on isometric drawings and their application to technical illustration.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>326 (127)</td>
<td>Commercial Building Layout</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 422.</td>
</tr>
<tr>
<td></td>
<td>Layout of light and medium commercial building using concrete, steel and wood construction.</td>
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<tr>
<td>334 (127)</td>
<td>Technology of Ferrous and Nonferrous Metals</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 131.</td>
</tr>
<tr>
<td></td>
<td>A study of metalurgy dealing with physical properties, heat treatments, testing and industrial applications.</td>
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<td></td>
</tr>
<tr>
<td>354 (127)</td>
<td>Wood Processes and By-Products</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 452.</td>
</tr>
<tr>
<td></td>
<td>Study of wood by-products manufactured from macerated wood fibres, laminates, dielectric glue equipment and other processes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>361 (167)</td>
<td>Industrial Controls</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 161.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
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<tr>
<td>374 (174)</td>
<td>Fluid Power</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 171.</td>
</tr>
<tr>
<td></td>
<td>Study of fluid power, including hydraulic and pneumatic systems. Emphasis on circuit design and applications.</td>
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<td></td>
</tr>
<tr>
<td>384 (184)</td>
<td>Printing Processes and Operations</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 381.</td>
</tr>
<tr>
<td></td>
<td>Recent advancements in the technology of graphic arts—study of work related to various printing processes.</td>
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<tr>
<td>418 (189)</td>
<td>Plastic Fabrication and Finishing</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 115.</td>
</tr>
<tr>
<td></td>
<td>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.)</td>
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</tr>
<tr>
<td>423 (124)</td>
<td>Technical Illustration</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 121.</td>
</tr>
<tr>
<td></td>
<td>Theory and application of single- and multiple-point perspectives. Shading and rendering techniques as applied to presentation-type drawings will also be emphasized.</td>
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<tr>
<td>435 (135)</td>
<td>Quality Assurance</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 131.</td>
</tr>
<tr>
<td></td>
<td>A study of quality control systems in manufacturing; dimensional, nondestructive and statistical systems are emphasized.</td>
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<tr>
<td>455 (155)</td>
<td>Wood Inspection and Testing</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 452.</td>
</tr>
<tr>
<td></td>
<td>Macro and micro wood identification, chemical and physical testing of wood and wood refined products.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>485 (185)</td>
<td>Photo-offset Lithographic Principles and Operations</td>
<td>3</td>
<td>One lecture and six hours of laboratory. Prerequisite: Industrial Arts 381.</td>
</tr>
<tr>
<td></td>
<td>Study and experimentation in the field of offset lithography.</td>
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</tbody>
</table>
318 / Industrial Technology

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. (195.) Plant Layout and Material Handling (3)
Study of education and industrial plant layout for expeditious flow of materials.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page . 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.

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,
assembling 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, I.

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 or general education.

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.
Prerequisites, 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (106.) Honors Course (1-3)
Refer to Honors Program.
311. (101A.) Advanced Oral and Written Composition (3)
Prerequisites: 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)
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 Galilei to contemporary poets and novelists.
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 Boiardo; Machiavelli, Ariosto, Michelangelo, Cellini and Tasso.
496. (185.) Selected Topics (3)
Topics in Japanese language, literature, culture and linguistics. Conducted in English or in Japanese. 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.
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: Wimer
Professors: Bucklew, Holowach (Chairman), Julian, Odendahl, Sorensen
Associate Professors: Haberstroh, Whitney
Assistant Professors: Lancaster, Spevak
Lecturers: Clayton, Lean, 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 64 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. (9 units.)
Major. A minimum of 24 upper division units in journalism to include Journalism 460, 470, 480, 485 or 583, 490, 500 or 508 and nine units of electives selected from Journalism 320, 481 or 507, 485, 490 (Internship in public relations), 502, 583.

Emphasis in Radio-TV News
Preparation for the major. Journalism 120 and 150. (6 units.)
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.

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 or general education.

Journalism Major

For the Single Subject Teaching Credential in English/Journalism
All candidates for a teaching credential must complete all requirements for the applicable specialization 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:
1. Literature—12 units selected from Comparative Literature 220A, 220B, 561, 562, 563, 570, 571; English 250A-250B, 260A-260B, 505, 513, 514, 533; Journalism 100, 502, 503;
2. Composition—12 units selected from English 100, 200, 280, 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;
4. Oral Communication—six units selected from Journalism 474, 475; Speech Communication 103, 104, 105, 111A, 111B, 135, 391;
5. Advising School Publications—four units selected from Journalism 150, 340, 431, 438, 499, 539;
6. Competency in News-gathering and Reporting—two units selected from Journalism 330, 490.

LOWER DIVISION COURSES

100. (40) 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. (51) News Reporting (3) I, II
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
Two lectures and three 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.
230. (92.) Newspaper Production (1-3) I, II
Three hours of laboratory required for each unit. Total credit in Journalism 230, 240, 330, 340 limited to eight units. A maximum of three units of Journalism 230, or its equivalent, and 340 limited to eight units. A maximum of three units of Journalism 230, or its equivalent, and 340 limited to eight units. Prerequisite: Consent of instructor. 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.

240. (92.) Magazine Production (1-3) I, II
Three hours of laboratory required for each unit. Total credit in Journalism 230, 240, 330, 340 limited to eight units. Special work in yearbook and magazine production by arrangement with the instructor. Includes editing and photographic work on campus magazines.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (156.) Honors Course (1-3) I, II
Refer to Honors Program.

320. (51B.) Advanced News Reporting (3) I, II
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
Three lectures and two 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 230, 240, 330, 340 limited to eight 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 (1-3) I, II
Three hours of laboratory required for each unit. Total credit in Journalism 230, 240, 330, 340 limited to eight units.
Prerequisite: Journalism 320.
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)
Principles and policies of editorial composition for mass communications media.

431. (194.) Editorial Conferences (1-3) I, II
More than three hours a week per unit of credit.
Prerequisites: Journalism 330 or 340, and consent of publication adviser. Techniques for solving problems in publication production through individual daily conferences with faculty adviser. Open only to editorial executives of The Daily Aztec and department magazine. Maximum credit six units.

438. (152.) High School Journalism (3)
Methods of conducting high school journalism classes. Editorial, business and mechanical aspects of school publication work, with emphasis on copy editing, headline writing and layout. Not open to journalism majors.

441. (101.) Magazine Article Writing (3) I, II
Gathering material and writing articles for specialized areas, with emphasis on the business press. Production of eight articles and marketing of at least one article emphasized.
485. (184.) Public Relations Practices (3) I
Prerequisite: Journalism 480.
Examination of current public relations practices in a wide variety of local commercial, industrial, financial, governmental, cultural and social organizations. Use of the local community's public relations resources.

490. (191.) Internship in Journalism (1-3) I, II
Prerequisites: Journalism 320 or 470 or 460 or 480; and consent of the instructor. Prerequisite must be consistent with the nature of the internship. PRE-arranged 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

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. (111.) History of Mass Communications (3) I, II
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.

505. (118.) The Foreign Press (3) I

507. (122.) Public Opinion Measurement (3) I
(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. (162.) Mass Communications and Society (3) I, II
Prerequisite: Sociology 101. Social factors underlying nature, function of mass media. Theories, models, research in mass media as culture carriers, as opinion shapers, and in relation to government.

509. (177.) Research Methods in Mass Communications (3) I, II
Prerequisite: Sociology 160. Investigate tools and methods of mass media; content analysis, readership studies, audience measurement, experimental designs, and representative studies.

522. (144.) Reporting of Public Affairs (3) I, II
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) I
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) I, II
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: Ingham, 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.

299. (99.) Experimental Topics (0-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

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, Property, Petronius, Juvenal. Emphasis on style, content, interpretation. Maximum credit nine units.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.
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 Thomas M. Davies, Jr. is the undergraduate adviser.

Offered by Latin American Studies

- Master of Arts degree in Latin American Studies
- Major in Latin American Studies with the A.B. degree in liberal arts and sciences.

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 64 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 units); 12 units selected from Anthropology 101, Economics 120 and 121, Geography 101, History 115A-115B, Latin American Studies 120, Political Science 110 and 130.

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.

Courses acceptable for the Latin American Studies Major include: Latin American Studies 341, 346, 498, 580, Anthropology 360, 361, 525, 542, 543, 570, 575, 576, 577, Art 561, 562, Economics 336, 365, 464, 483; Geography 323, 324, 325, 326, 327, History 315A-315B, 496 (when relevant); History 515A-515B, 551A-551B, 552A-552B, 553A-553B, 554, 557A-557B, 558A-558B; Mexican-American Studies 333, 335, 376; Political Science 561, 566, 567, 568, 570, 571, 572; Portuguese 485 (when relevant), 535; Spanish 496, 594A-594B, 515A-515B, 520, 522, 524, 570, 571, 572; and 499 (when relevant) taken in one of the departments listed above.

LOWER DIVISION COURSE

120. Latin American Heritage (3)
Introduction to Latin American cultures and peoples from an interdisciplinary perspective.

UPPER DIVISION COURSES

341. Latin American Civilization (3)
The principal aspects of the Latin American cultures with emphasis on literature, philosophy and the arts. Not open to students with credit in Spanish 441. (Formerly numbered Humanities 141.)

346. Mexican Civilization (3)
The principal aspects of Mexican civilization with emphasis on literature, philosophy and the arts. Not open to students with credit in Spanish 442. (Formerly numbered Humanities 146.)

498. Seminar on Latin America (3)
Exploration of the interdisciplinary approach to Latin America including evaluation of relevant resources and methods. Taught by a team of instructors representing two or more disciplines.
Linguistics
In the College of Arts and Letters

Faculty
Professors: Frey, Tidwell
Associate Professors: Donahue, Drake (Chairman), Seright
Assistant Professors: Elgin, Underhill
Lecturers: Dil, Lacy, Van Lancker

Offered by the Department
Master of Arts degree in linguistics.
Major 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 64 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, the 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.)
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 505, 510, 515; Journalism 508, 509; Philosophy 521, 522, 531; Sociology 512, 522, 524, 525, 540, 548, 557; Russian 570, 580, 581; Spanish 548, 549; Speech Communication 391, 493 (when appropriate), 530, 535; Speech Pathology and Audiology 305.

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, 522, 524, 550, 551, 552; Anthropology 510, Philosophy 531.

Courses in the minor may not be counted toward the major or general education.

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.

299. (99.) Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

496. (190.) Experimental Topics in Linguistics (2-4) I, II
Specialized study of a selected topic in linguistics. May be repeated with new content. Maximum credit six units.

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

500. (196.) General Linguistics (3) I
Open only to seniors and graduate students. Recommended: Reading knowledge of Latin, French, Spanish or German.

The principles of linguistic development illustrated chiefly from the Classical, Romanic, and Germanic language groups.

510. (180.) History of English (3) I, II
The history of English and its present-day use.

520. (181.) Modern English (3) I, II
The structure of modern English, including the various approaches to linguistic analysis.

523. (184.) Phonemics and Morphemics (3) I
The study of procedures for arriving at the phonetic inventory of languages and the structuring of sound units (both linear and intonational) into phonemic systems; the study of morphemic hierarchies and their arrangements in forming words.

524. (187.) American Dialectology (3) I, II
The development of American English; regional and cultural differences in pronunciation, grammar and vocabulary.

550. (185.) Theory and Practice of English as a Second Language (3) II
The nature of language learning, evaluation of techniques and materials for the teaching of English as a second language.

551. (186.) Sociolinguistics (3) I
Prerequisite: Three units in linguistics or sociology.

Investigation of the correlation of social structure and linguistic behavior.

552. (187.) Psycholinguistics (3) II
Prerequisite: Three units in linguistics or psychology.

Psychological aspects of linguistic behavior.

GRADUATE COURSES

610. (220.) Indo-European (3)
Prerequisite: Anthropology 304 or Linguistics 522. Phonology, morphology, and syntax of the Indo-European language community, with special attention to "Centum" and "Satem" relationships.

611. (224.) Old English (3)
Study of Old English phonology, morphology, and syntax.

612. (224.) Middle English (3)
Modern linguistics analyses of the Middle English language; emphasis on the development of historical English dialects.

621. Phonology (3)
Prerequisite: Linguistics 500 or 510 or 520.

Phonetics, phonetic transcription, theories of phonology and phonological description.

622. Structure of English (3)
Prerequisite: Linguistics 500 or 510 or 520.

Advanced study of linguistic theory and its application to the analysis of English.

640. Field Methods in Linguistics (3)
Prerequisite: Three units of linguistics, including some knowledge of phonetic transcription and consent of instructor.

Principles and techniques of linguistic analysis working directly with native informants, including phonemic, grammatical, and syntactic analysis and text collection and interpretation.

641. (221.) Structure of a Non-Indo-European Language (3)
The structure of a non-Indo-European language, to be chosen by the instructor, including grammar, reading of texts, and sessions with a native speaker of the language, if possible.

790. (290.) Bibliography and Methods of Linguistic Research (3)
Prerequisite: Twelve upper division units in linguistics.

Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research, including editorial procedures. Recommended for the first semester of graduate work.
334 / Linguistics

795. (295.) Seminar in Linguistics (3)
Prerequisite: Completion of three units of 600-700-numbered courses in the master's program for linguistics.
Research in linguistics, course content varying according to instructor. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the University; also student must be registered in the course when the completed thesis is granted final approval.

335 / Mathematics

In the College of Sciences

Faculty
Emeritus: Clark, Emerson, Lemme, Eagle
Professors: Becker, Bransfield, Bray, Burton, Deaton, Drobnies, Fountain, Garrison, Gindler, Harris, Harvey, Ho, Holmes, Moser, Riggs, Saltz, Shaw (Chairman), Smith, Van de Wetering, Warren, Willerding
Associate Professors: Bryant, Burdick, Davis, Eckberg, Elwin, Hager, Howard, Kopp, Lesley, Lopez, Macky, Marcus, Marosz, Nowor, Romano, Ross, Short, Villone, Whitman
Assistant Professors: Balse, Carpenter, Flanagan, Herndon, Hintzman, Korevaar, McLeod, Park, Salomon, Self, Vinge

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 64 of this catalog.
A minor is not required with this major.

Preparation for the major. Mathematics 107, 137, 150, 151, 152, (20 units.)
Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 541A, 557, 570, 571, 572 and nine units of approved electives.

Computer Science Major

With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 64 of this catalog.
A minor is not required for this major.

Preparation for the major. Mathematics 107, 137, 150, 151, 152, (20 units.)
Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 541A, 557, 570, 571, 572 and nine units of approved electives.

Mathematics Major

With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 64 of this catalog.
A minor is not required with this major.

Preparation for the major. Mathematics 150, 151 and 152, (13 units.) Recommended: Physics 195A-195B-195C.
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 64 of this catalog.

A minor is not required with this major.

Preparation for the major. Mathematics 150, 151 and 152. (13 units.) Recommended: Physics 195A-195B-195C.

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 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 21, 122 and 123 and in the upper division, nine units in mathematics with not more than three units selected from 301, 302, 310A, 330A.

Courses in the minor may not be counted toward the major or general education.

Mathematics Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree.

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, 122 and 140 or 150 and have not completed prerequisite courses at San Diego State University must take the mathematics placement tests. Students in elementary education who expect to enroll in State University must take the Mathematics Education Placement Test. These tests may be used at all or part of the prerequisite requirements for the mathematics major and 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 examinations to be taken by the entering freshman or the transfer student prior to registration. Refer to the calendar.

LOWER DIVISION COURSES

103. (3.) Intermediate Algebra (O L, 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 (O L, II
Prerequisites: Credit in plane geometry in either high school or college combined with either credit in Mathematics 103 at this university or qualification on Mathematics Placement Examination. Mathematics 104 may be taken concurrently with either Mathematics 140 or 150.

Basic concepts of analytic trigonometry.

107. (7.) Introduction to Computer Programming (O L, II
Prerequisite: Mathematics 103
Introduction to machine and data organization; the rudiments of job control; design and analysis of algorithms; flowcharts. Extensive programming of problems on the computer.

118. (18.) Introduction to Mathematics (O L, 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 (O L, II
Two lectures and two hours of laboratory.
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 (O L, II
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.

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.

122. (22.) Mathematical Analysis II (O L, II
Prerequisite: Mathematics 121.

137. (37.) Intermediate Computer Programming (O L, II
Prerequisite: Mathematics 107.
General concept of machine and assembly languages, including data representation, instruction set, and addressing techniques. Subroutine linkages and use of system and programmer-defined macros.

138. Higher Level Languages (O-2)
Prerequisite: Mathematics 103.
Syntactic and semantic features of a given high level language. Units will depend on language. Programs will be run on computer. Possible languages include FORTRAN, COBOL, ALGOL.

140. (40.) College Algebra (O L, II
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.

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. (4G.) Introductory Matrix Algebra (3)  
Prerequisite: Mathematics 140. 
Matrices, vectors, linear dependence and independence, basis, change of basis, similarity and congruence. Applications to systems of equations, characteristic values and orthogonality.

150. (5O.) 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 examination. 
Topics in analytic geometry; differentiation and integration of single variable functions, with emphasis on techniques.

151. (5J.) 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. (5S.) Multivariable Calculus (4) I, II  
Prerequisite: Mathematics 151 with minimum grade of C. 
Partial differentiation, differential equations, multiple integrals, applications.

155A-155B. (5SA-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.

160. (6O.) Introduction to Modern Mathematical Concepts (3) I, II  
Prerequisite: Mathematics 121 or 140. 
Elementary approach to selected topics from mathematical logic, set theory, probability, matrices, linear programming and theory of games.

310A. (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.

310B. (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 (2-4)  
Refer to the catalog statement on Experimental Topics on page 115. 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 the Honors Program.

301. (100.) Mathematical Topics for School Teachers (2 or 3)  
Offered only in Extension to currently employed elementary and secondary school teachers. A study of selected portions of elementary or secondary school mathematics. May be repeated with new subject matter for additional credit. May not be used in a mathematics major or minor.

302. (101.) Basic Mathematical Concepts (3) I, II  
Prerequisite: Mathematics 130. 
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. 
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. 
Integers, rationals, and real numbers as mathematical systems; operations, mappings, properties of relations; coordinate geometry; mensuration. Enrollment limited to those in training for or engaged in teaching in the elementary schools.

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 (2-4)  
Refer to the catalog statement on Experimental Topics on page 115. 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.

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) I  
Prerequisite: Mathematics 122 or 151 and consent of instructor. 
Concurrency of lines, collinearity of points and other properties of figures not altered by projections; construction and study of ellipses, hyperbolae, and parabolae 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.

513. (108.) Differential Geometry (3)  
Prerequisite: Mathematics 152. 
Curves in space, Frenet formulas, curves on surfaces, geodesics, lines of curvature, asymptotic lines, Gaussian Curvature.
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. (150-150B.) Modern Algebra (3) I, II
Prerequisite: Mathematics 122 and 160, or 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)
Prerequisites: Mathematics 122 and 160, or 151.
Selected topics from the theory of numbers to include congruences, Diophantine equations, and a study of prime numbers.

523. (155.) Mathematical Logic (3)
Prerequisite: Mathematics 151 or 160 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.

524. (156.) Logical Foundations of Mathematics (3)
Prerequisite: Mathematics 152 or 523.

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 530.
Study of boundary-initial value problems via separation of variables, Green's function, 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-Riemann equations, theorem of Cauchy, 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.
Topological spaces, functions, mappings, and homeomorphisms. Connectivity, compactness, Metric spaces.

541A. (135.) Numerical Analysis and Computation (3) I
Prerequisites: Mathematics 107 and 152.
Iteration methods to solve nonlinear equations (convergence, error bounds, rate of convergence). Iteration methods to solve systems of nonlinear equations. Floating point arithmetic.

541B. (135B.) Numerical Analysis and Computation (3) II
Prerequisites: Mathematics 540A 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.

550. (134.) Probability (3)
Prerequisite: Credit or concurrent registration in Mathematics 152.
Definition, 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
Prerequisite: Mathematics 550.
Sampling distributions, point and interval estimations and hypothesis testing with applications to problems in various fields.

551B. (140B.) Mathematical Statistics (3) II
Prerequisite: Mathematics 551A.
Elementary Bayesian decision theory and nonparametric statistics. Estimations and hypothesis testing in linear models.

552. (141.) Statistics, Theory and Applications (3)
Prerequisite: Mathematics 551A.
Applications of 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.

560. (136.) Data Structures (3)
Prerequisite: Mathematics 137.
Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multilinked structures.

571. (137.) Finite Mathematics, with Computer Applications (3)
Prerequisite: Mathematics 123 or 152.
Equivalent 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. (158.) 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)
Prerequisite: Mathematics 570 and 572.
Syntactical specification of languages. Scanners and parsers. Precedence grammars. Run-
time storage organization. Code generation and optimization.

576. (177.) Artificial Intelligence (3) II
Prerequisite: Mathematics 523.
Heuristic approaches to problem-solving. Systematic methods of search of the problem
state space. Theorem proving by machine. Resolution principle and its applications.

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 (1-3) 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

600. (202.) Geometrical Systems (3)
Prerequisite: Mathematics 521 and an upper division course in geometry.
Ordered and affine geometries, decompositions, dilations. Projectivities and projective
space. Absolute geometry, isometries, groups generated by inversions.

601. (203.) Topics in Algebra (3)
Prerequisite: Mathematics 521A and 534A.
Unique factorization domains, rings and ideals, groups, algebraic field extensions. A course
designed for secondary school teachers.

602A-602B. (204A-204B.) Topics in Analysis (3-3)
Prerequisite: Mathematics 521A and 534A.
Mathematics 602A is prerequisite to 602B.
Topics in analysis, including the real number system, convergence, continuity, differen-
tiation, the Riemann-Stieljes integral, complex analysis, designed to give the
secondary teacher a broad understanding of the fundamental concepts.

620. (220.) Rings and Ideals (3)
Prerequisite: Mathematics 521B.
A development of the theory of rings.

621. (221.) Theory of Groups (3)
Prerequisite: Mathematics 521B.
A development of the theory of groups.

622. (222.) Theory of Fields (3)
Prerequisite: Mathematics 521B.
A study of both finite and infinite fields, and field extensions.

623. (223.) Linear Algebra and Matrix Theory (3)
Prerequisite: Mathematics 520.
A study of matrices, determinants, and vector spaces.

624. (224.) Advanced Mathematical Logic (3)
Prerequisite: Mathematics 521A or 522.
First-order theories, completeness theorems, arithmetization, Godel's incompleteness
theorem.
Mathematics

690A-690B. Theory of Computability (3-3)
Prerequisites: Mathematics 571 and 574.
Models of computation.

691A-691B. Formal Languages and Syntactic Analysis (3-3)
Prerequisites: Mathematics 570, 572 and 573 or 574.
Definition of formal grammars: arithmetic expressions and precedence grammars, context-free and finite-state grammars. Algorithms for syntactic analysis. Relationship between formal languages and automata.

Computer Architecture and Programming Systems (3-3)
Prerequisites: Mathematics 570, 572.
Topics to include computer architecture, operating systems, I/O hardware and software, translators. Selected applications such as simulation, computer graphics, CAI are additional optional topics.

Advanced Numerical Analysis (3)
Prerequisites: Mathematics 520 and 541B.

Advanced Numerical Analysis (3)
Prerequisites: Mathematics 693A.
Chebyshev polynomials, trigonometric approximation), numerical solution of partial differential equations.

Applications of Computer Science (3)
Prerequisites: Classified graduate standing in mathematics or computer science.
Topic to be chosen from such applications as theorem proving simulation, learning theory, graphics, definition languages. Maximum credit six units applicable on a master's degree.

Seminar (1-3)
Prerequisite: Consent of instructor.
Maximum credit six units applicable on a master's degree.

Research (1-3) Cr/NC
Prerequisite: Six units graduate level mathematics. Research in one of the fields of mathematics. Maximum credit six units applicable on a master's degree.

Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

Mexican-American Studies

In the College of Professional Studies

Faculty
Associate Professor: Serros (Chairman)
Assistant Professor: Villarino
Lecturers: Felix, J., Felix, R., Griswold del Castillo, Palacios, Preston, Salandini, 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 64 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. Students majoring in Mexican-American Studies must demonstrate knowledge of Spanish by satisfactory completion of written and oral examinations administered by 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 or general education.

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.

106B. (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 mathematics 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.
346 / Mexican-American Studies

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 105.

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 Race (3)
Survey and analysis of major 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 the present. The Treaty of Guadalupe Hidalgo; history of Mexican immigration; farm labor and urban Chicano history; contemporary movements. This year course meets the graduation requirement in American Institutions.

200. (50.) Introduction to Mexican-American Art (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. cultures.

230. (60.) Mexican-American Art (3)
Contemporary barrio art in the Southwest. Lectures and exhibitions by Chicano artists of California.

250. (65.) 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. (65B.) 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. (65C.) 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. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.
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)
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 in college.

376. (100.) Mexican-American Culture and Thought (3)
Intellectual history of the Mexican-American from Nahuat and European origins to the synthesis between the two continents in nineteenth and twentieth centuries. The concept of Raza de bronce and Aztlán.

380. Chicano Folklore (3)
Prerequisite: Mexican-American Studies 110A or 110B. Stories, legends, dichos, and common practices of the Chicano storytellers of old; analysis of ancient myths and their contemporary manifestations.

Prerequisite: Consent of instructor. Mexican-American Studies 390A is prerequisite to 390B.
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.

460. (170.) Bilingual and Bicultural Education (3-3, 3-3)
Prerequisite: Mexican-American Studies 110A-110B. Philosophy of bilingual and bicultural education; investigation of bilingual models and exploration of research in area. Introduction to bilingual methods.

461A. (171.) Bilingual Linguistics (3)
Prerequisite: Mexican-American Studies 110A or 110B. Basic elements of linguistics in English and Spanish; definitions and applications. A study of comparative elements in bilingual linguistics. Taught bilingually.

461B. (172A.) Bilingual Linguistics (3)
Prerequisite: Credit or concurrent registration in Mexican-American Studies 461A. A Spanish-English description incorporating the historical and dialectal elements of linguistics. Spanish syntax, phonology, morphology and semantics. Theories and principles of teaching in bilingual systems. This course is taught in Spanish.

461C. (172B.) Bilingual Linguistics, English (3)
Prerequisite: Credit or concurrent registration in Mexican-American Studies 461A. An English-Spanish description incorporating the historical and dialectal elements of linguistics. English syntax, phonology, morphology and semantics. Theories and principles of teaching in bilingual systems. Taught in English.

464A-464B. (174A-174B.) Literature for the Bilingual Student (3-3)
Semester I: The study of Iberian, Spanish-American and Chicano literature for the preschool, elementary, and junior high bilingual student. May be used in lieu of Elementary Education 512. Semester II: The study of Iberian, Spanish-American, and Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

465. (179.) Bilingual Practicum (4)
Eight hours of laboratory. Prerequisites: Mexican-American Studies 460 or 461A, and 470. Methods of teaching Spanish and English in elementary, junior high, and high school, emphasizing all valid linguistic approaches to language learning.
Microbiology in the College of Sciences

Faculty
Emeritus: Myers
Professors: Baxter, Kelly, Moore, Walch (Chairman)
Associate Professors: Anderson, Phelps, Steenbergen

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 64 of this catalog. To satisfy the requirement in foreign language, it is strongly recommended that students select French, German or Russian.
A minor is not required with this major.

Preparation for the major. Biology 100, 100L and 215 or Mathematics 119; Chemistry 200A-200B, 230 or 231, and 250 or 251; Mathematics 121 and 122, or 140 and 150; and Physics 115A-115B, or 124A-124B and 125A-125B. (39-42 units) Recommended Chemistry 140.

Major. A minimum of 24 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 64 of this catalog.
A minor is not required with this major.

Preparation for the major. Biology 100, 100L and 215 or Mathematics 119; Chemistry 200A-200B, 230 or 231, and 250 or 251; Mathematics 121 and 122, or 140 and 150; and Physics 115A-115B, or 124A-124B and 125A-125B. (39-42 units) Recommended Chemistry 140.

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.

Medical Technology Curriculum
In Applied Arts and Sciences
The curriculum in medical technology, which prepares for the licensed profession of Public Health Microbiologist or Clinical Laboratory Technologist or Bioanalyst, may be obtained by taking the microbiology major with the B.S. degree, but following a modified arrangement of courses. A description of the curriculum follows:

Public Health Microbiologist. To fulfill the academic requirements to qualify for the licensing examination given by the California State Department of Public Health for Public Health Microbiologists, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 520, 525, 530, 535, Chemistry 467 and Zoology 535. Recommended: Microbiology 430A-430B, 515, 555L; Zoology 508 and 526.

Clinical Technologist. To fulfill the academic requirements to qualify for the licensing examination given by the State for Clinical Technologists 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, Chemistry 467, and Zoology 535. Recommended: Biology 570 and 571; Microbiology 430A-430B, 515, 555L; 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 64 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 200A-200B, 230 or 231, and 250 or 251; Geology 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, 430A-430B, 520; Biology 540; Engineering 414, 514; Public Administration 320; Zoology 526. The prerequisites for Engineering 414 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 or general education.

Microbiology
For the Single Subject Teaching Credential in Life Sciences
All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in life sciences which includes the area of microbiology are being revised. For further information consult the department.

LOWER DIVISION COURSES

110. (1.) 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. (1.) Microbiology and Man, Laboratory (3) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 110. Laboratory exercises designed to complement material presented in Microbiology 110. Fulfills the general education laboratory requirement in the natural science area.

210. (10.) Fundamentals of Microbiology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 100A-100B or 200A-200B. 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 course listing statement on Experimental Topics on page 115. 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.
### Microbiology

**UPPER DIVISION COURSES**

<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>Honors Course</td>
<td>(1-3)</td>
<td>Refer to Honors Program.</td>
</tr>
<tr>
<td>310</td>
<td>General Microbiology</td>
<td>(4)</td>
<td>Two lectures and six hours of laboratory. Prerequisite: Microbiology 230 or 231. 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.</td>
</tr>
<tr>
<td>320</td>
<td>Microbial Physiology</td>
<td>(4)</td>
<td>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.</td>
</tr>
<tr>
<td>330</td>
<td>Fundamentals of Immunology and Serology</td>
<td>(4)</td>
<td>Two lectures and six hours of laboratory. Prerequisites: Microbiology 310; Chemistry 361A; and one other upper division biological science course. The immunochemistry of antigens and antibodies and their reactions. Immunohematology and hypersensitivity. Serological techniques.</td>
</tr>
<tr>
<td>340</td>
<td>History of Microbiology</td>
<td>(2)</td>
<td>Two lectures and six hours of laboratory. Prerequisite: Microbiology 310, 210, or 310. The development of microbiology as a specialty area of the biological sciences and its influence on social and political developments.</td>
</tr>
<tr>
<td>350</td>
<td>Community Epidemiology</td>
<td>(3)</td>
<td>A course for other than biological sciences majors. Epidemiological concepts and methods as they apply to current community problems.</td>
</tr>
<tr>
<td>360</td>
<td>Principles of Environmental Health</td>
<td>(4)</td>
<td>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.</td>
</tr>
<tr>
<td>370</td>
<td>Environmental Health Administration</td>
<td>(4)</td>
<td>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.</td>
</tr>
<tr>
<td>380</td>
<td>Epidemiology</td>
<td>(2)</td>
<td>Two lectures and six hours of laboratory. Prerequisite: Microbiology 220. Biology 215 or Mathematics 119. Study of the transmission, distribution, and control of infectious and noninfectious diseases in the community.</td>
</tr>
<tr>
<td>390</td>
<td>Investigation and Report in Microbiology</td>
<td>(2)</td>
<td>Three lectures and three hours of laboratory. Prerequisites: Microbiology 310 and at least one additional upper division course in microbiology. Investigation and reports on current microbiological literature.</td>
</tr>
<tr>
<td>400</td>
<td>Methods of Investigation</td>
<td>(2)</td>
<td>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.</td>
</tr>
<tr>
<td>499</td>
<td>Experimental Topics</td>
<td>(2-4)</td>
<td>Refer to the catalog statement on Experimental Topics on page 115. 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>
590. (180.) Electron Microscopy (4) II
Two lectures and six hours of laboratory.
Prerequisites: Physics 115A-115B or 124A-124B and Microbiology 310. Recommended:
Microbiology 353, and Zoology 508.
Principles and techniques in the biological application of the electron microscope.

GRADUATE COURSES

600. (200.) Seminar (2 or 3)
Prerequisite: Consent of instructor.
An intensive study in advanced microbiology; topic to be announced in the class schedule.
Maximum credit six units applicable on a master's degree.

610. (240.) Seminar in General Microbiology (2)
Prerequisite: Microbiology 320.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

620. (280.) Seminar in Microbial Physiology (2)
Prerequisite: Microbiology 320.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

630. (260.) Seminar in Immunology and Serology (2)
Prerequisite: Microbiology 330.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

640. (215.) Seminar in Bacterial and Viral Genetics (2)
Prerequisite: Microbiology 515.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

650. (210.) Seminar in Pathogenic Bacteriology (2)
Prerequisite: Microbiology 520.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

660. (230.) Seminar in Medical Mycology (2)
Prerequisite: Microbiology 525.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

670. (250.) Seminar in Virology (2)
Prerequisite: Microbiology 535.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

680. (245.) Seminar in Aquatic Microbiology (2)
Prerequisite: Microbiology 320 or 560 or Biology 531.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

720. (272.) Advanced Pathogenic Bacteriology (3)
Prerequisites: Microbiology 520 and consent of instructor.
Biological and chemical nature of disease-producing bacteria. Application of experimental information to diagnostic laboratory procedures.

725. (270.) Biology of Animal Pathogenic Fungi (3)
Prerequisite: Microbiology 525.
Distribution and pathogenesis of fungi-causing disease in man and other animals.

790. (290.) Bibliography (1)
Use of basic reference books, journals, pertinent bibliographies preparatory to the writing of a master's thesis.
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., Springston
Professors: Anderson, Blyth, Bruderer, Brunswick, Estes, Forman, Genzlinger, Hogg, Hard, Lambert, Morse, Savage, Sheldon, Smith (Chairman), Snider, Ward-Steinman
Associate Professors: Almond, Loomis, Meadows, Mitchell, Moe, Rothfleisch, Yates
Assistant Professors: Flye, Hill, Logan, Murphy
Lecturers: Greenbush, Lloyd, O'Donnell

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 and 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.

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 64 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 230; 258A-258B. (31-35 units.)

Music / 357
Major. A minimum of 37 upper division units to include Music 358A-358B; five units selected from courses numbered Music 370 through 390; 446A-446B-446C; one unit selected from Music 448A or 449A; four units of Music 450; 552A-552B; 555; elect one course from Music 351C, 351D, or 510.

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 64 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), 158A-158B, 258A-258B; six units selected from courses numbered Music 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 448A-448B or 449A-449B, 358A-358B, 552A-552B, six units selected from courses numbered 270 through 290, 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)
(b) Music History and Literature: Ten units to include four units of Music 499 and six units of courses to be selected with the aid of the departmental adviser from related fields such as history, etc.
(c) Composition: Ten units to include two units of Music 207, two units of Music 497, 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 recitals.

Foreign Language Requirement. Eight to twelve units (or equivalent knowledge demonstrated in a test of reading knowledge administered by the foreign language department concerned in consultation with the Department of Music) as follows:
1. Vocalists—one semester each of French, German, and Italian. 2. Music History and Literature students—12 units of French, German, or Italian. 3. All other-eight units of one foreign language chosen from French, German, or Italian (except that classical guitar students may substitute Spanish).

Music 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 or general education.

Music Major
For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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; 138A-138B; four units selected from courses numbered 170 through 190; 246A-246B; four units of Music 250-258A-258B. (21-25 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; two units of Music 450; 552A-552B; and 555.

**Electives in Music**

The Music Department offers certain courses for students who are interested in music as an elective study area for the enrichment of their cultural background. Courses particularly suited for these needs are Music 151 and 351 and the music courses numbered 170 to 190 and from 370 to 390. Some students will be musically prepared to elect courses which may or may not be included in this group. Enrollment by qualified students who wish to elect these courses is encouraged.

**Performances Studies for Credit**

- Credit may be allowed for performance studies under the following conditions:
  1. Properly enrolled music majors may enroll for performance studies with resident faculty without an additional fee.
  2. Properly enrolled music majors who elect to study off campus with a teacher approved by the Department of Music may do so and may apply for credit by examination. Application for such credit must be made each semester in the Office of the Registrar within the official time limits for filing a change of 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 dropped 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/NR

Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals with departmental requirements. Maximum credit four units.

102. (2.) Basic Musicianship for Non-Music Majors (1) 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. (104-108) Piano—Elementary Class Instruction (1-1) I, II

Two hours.

Prerequisite: Music 110A is prerequisite to 110B.

Effective 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.

115B. (15B.) Voice—Elementary Class Instruction (1) I, II

Two hours.

Prerequisite: Music 115A.

Observation of individual or group lessons; critiques and discussion; performance in class.

120A. (20A.) 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 320A.

120B. (20B.) Strings—Elementary Class Instruction (1) I

Two hours.

Prerequisite: Music 120A or 320A.

Fundamentals of viola, 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 320B.

125A. (25A.) 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 325A.

125B. (25B.) Oboe and Bassoon—Elementary Class Instruction (1) I, II

Two hours.

Fundamentals of oboe and bassoon by lecture and acquisition of elementary skills. Not open to students with credit in Music 325B.

130. (30.) Brass—Elementary Class Instruction (1)

Two hours.

Fundamentals of brass instruments by lecture and acquisition of elementary skills. Not open to students with credit in Music 330.

135. (35.) 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 335.

140. (40.) Guitar—Elementary Class Instruction (1) I, II

Two hours.

Open only to music or elementary education majors. Fundamentals of guitar by acquisition of elementary skills. Not open to students with credit in Music 340.

151. (51.) Introduction to Music (3) I

Practical approach to hearing music with understanding and pleasure, through study of representative compositions of various styles and performance media, great musicians and their music correlated with other arts through lectures, recordings, concerts. Closed to music majors and minors.

153. (53.) Opera Theatre (2) I, II

Four hours.

The interpretation and characterization of light and grand opera. Specific work in coordination of operatic ensemble. Maximum credit eight units.

158A-158B. (84-88) Comprehensive Musicianship (3-3) I, II

Two lectures and two hours of activity.

Prerequisite: Music 158A is prerequisite to 158B.

Direct analysis of musical styles and forms as they have evolved historically; composition, improvisation, performance, and instrumentation; sight-singing, dictation, harmony. Parallel developments in related arts; comparisons with non-Western musical systems.
Performance Organization Courses

The performance organization courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and designed to provide students with practical experience in rehearsal techniques.

170. (70.) Chamber Music (1) I, II
Three hours. Four hours for opera.
Prerequisite: Consent of instructor.
Sections for string, woodwind, brass, piano, vocal, and mixed ensemble groups. Maximum credit four units.

175. (75.) Marching Band (1) I
Concurrent registration in Music 175 and 176 required. Combined activity, six hours.
Prerequisite: Consent of instructor.
Maximum credit two units.

176. (76.) Symphonic Band (1) I, II
Semester I: Concurrent registration in Music 175 and 176 required. Combined activity, six hours. Semester II: Activity, five hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

177. Wind Ensemble (1) I, II
Five hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

180. (80.) Symphony Orchestra (1) I, II
Five hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

185. (85.) Concert Choir (1) I, II
Five hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

186. (86.) Treble Clef (1) I, II
Three hours.
Maximum credit four units.

187. (87.) Men's Glee Club (1) I, II
Three hours.
Maximum credit four units.

188. (88.) University Chorus (1) I, II
Three hours.
Open to all persons interested in performing oratorio, cantata, opera, and the extended choral works. No entrance auditions are required. Maximum credit four units.

189. (89) Jazz Ensemble (1) I, II
Three hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

190. (90.) Collegium Musicum (1) I, II
Three hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

207. (7.) Composition Laboratory (1) II
Three hours of laboratory.
Prerequisite: Consent of instructor.
Original writing in different homophonic and polyphonic forms for various media.
Maximum credit two units.

246. Practicum in Music (1) I, II
Three hours of laboratory.
Materials and techniques used in instruction with field observation.
A. Performance Areas.
B. General Music.

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-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 the B.M. degree in composition and in music history and literature enroll for one unit of credit per semester. For conditions under which credit is given, see Performance Studies for Credit in the section of the music major. Maximum credit for Music 250 is eight units.

A. Piano
B. Harpsichord
C. Organ
D. Voice
E. Flute
F. Oboe
G. Clarinet
H. Saxophone

258A-258B. (58A-58B.) Comprehensive Musicianship (5-5) I, II
Four lectures and two hours of activity.
Prerequisite: Music 158A. 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 115. 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.

301. (110.) Recital(s) (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) I
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 202A. 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 acquisition 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.

347. (147.) Perspectives in 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.

348. (148.) Ethnic Music (3) I, II
Prerequisite: Music 102 or 158B.
The origin and development of ethnic music; the social instruments and their use. Participation in singing and playing ethnic music.

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 Musics (3)
World music outside the European art tradition with emphasis on the musics 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. Counterpoint from 18th to 20th century, serial techniques, jazz, electronic music. Individual projects in organization, composition, analysis, synthesis, non-Western musics.

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.

370. (170.) Chamber Music (1) I, II
Three hours. Four hours for opera.
Prerequisite: Consent of instructor.
Section for string, woodwind, brass, piano, vocal, and mixed ensemble groups. Maximum credit four units.

375. (175.) Marching Band (1) I
Concurrent registration in Music 375 and 376 required. Combined activity, six hours.
Prerequisite: Consent of instructor.
Maximum credit two units.

376. (176.) Symphonic Band (1) I, II
Semester I: Concurrent registration in 375 and 376 required. Combined activity, six hours.
Semester II: Five hours per week.
Prerequisite: Consent of instructor.
Maximum credit four units.

377. Wind Ensemble (1) I, II
Prerequisite: Consent of instructor.
Maximum credit four units.

380. (180.) Symphony Orchestra (1) I, II
Five hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

385. (185.) Concert Choir (1) I, II
Five hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

386. (186.) Treble Clef (1) I, II
Three hours.
Maximum credit four units.

387. (187.) Men’s Glee Club (1) I, II
Three hours.
Maximum credit four units.

388. (188.) University Chorus (1) I, II
Three hours.
Open to all persons interested in performing oratorio, cantata, opera and the extended choral works. No entrance auditions are required. Maximum credit four units.

389. (189.) Jazz Ensemble (1) I, II
Three hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

390. (190.) Collegeium Musicum (1) I, II
Three hours.
Prerequisite: Consent of instructor.
Maximum credit four units.

446. Practicum in Music (2) I, II
One lecture and two hours of activity.
Advanced materials and techniques used in instruction, with field observation.
A. Choral Music
B. Instrumental Music
C. General Music

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.
Three hours.
Prerequisite: Music 258B. Music 448A is prerequisite to 448B.
Elements of baton technique and development of basic skills common to choral conducting. Representative literature and techniques for choral organizations will be studied and performed. Practical experience in typical conducting situations will be emphasized in various grade levels.

449A-449B. (149A-149B.) Instrumental Conducting (1-1) I, II
Three hours.
Prerequisite: Music 258B. 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. Bassoon
V. Classical Guitar
W. Classical Accordion
X. Composition

496. (196.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

507. (167.) Composition Laboratory (1) II
Three hours of laboratory.
Prerequisite: Music 207 and consent of instructor.
Continuation of Music 207. Maximum credit two units.

541. (144.) 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 258B. Music 552A is prerequisite to 552B.
The chronological development of musical art and forms from the Middle Ages to the present. Analytical score study and assigned recordings. Familiarity with musical resources through individual assignments.

554. (154.) Music Literature (2-3) I, II
Prerequisite: Music 258B.
A concentrated study of the literature in the several areas listed. Analysis by use of scores and of recordings, when available.
A. Chamber Music Literature—Strings
B. Symphonic Literature
C. Keyboard Literature
D. Song Literature

GRADUATE COURSES

600. (200.) Seminar in Music Education (3)
Prerequisite: Consent of instructor.
Seminars in music education are offered to provide an opportunity for concentrated study in the several areas listed.
A. Development and Teaching of Strings
B. Choral and Vocal Techniques
C. General Music

601. (210.) Foundations of Music Education (3)
History and philosophy of music education in relation to current trends in the teaching of music.

602. (202.) Administration and Supervision of Music Education (3)
Curriculum, scheduling, finance, human relations, organizational aspects, and the role of the supervisor-consultant.

604. (204.) Comparative Music Education (3)
Various international philosophical and technical approaches to teaching music to include the Orff, Kodaly, Suzuki and other systems.

607. (207.) Composition (2-3)
Three hours of laboratory and public performance of an extended original work as a project.
Prerequisite: Music 507.
Advanced composition for various media, development of original idiom, intensive study of modern music.

608. (208.) History and Development of Music Theory (3)
Prerequisite: Music 552B.
Survey of important theoretical approaches to music, from pre-Socratic writers to the present.

609. (209.) Advanced Orchestration (2)
Intensive work in the practical scoring for ensemble, full orchestra, and symphonic band.
Score analysis. Selected works of the class members will be performed.

611. (211.) Analytical Studies of Music (3)
Melodic, formal, contrapuntal and harmonic analysis of music.
613. (213.) Seminar: Music Theory (3)
Principles of traditional harmony and ear training.

614. (210.) Electronic Music (3)
Prerequisite: Undergraduate concentration in composition.
Theory, techniques and composition of various kinds of electronic music.

648A. (246A.) Advanced Choral Conducting (2)
Prerequisite: Music 346B.
Course designed to develop skills at professional level; study of different styles of choral literature and their relationship to conductor's art; score analysis and experience in conducting.

648B. (246B.) Advanced Instrumental Conducting (2)
Prerequisite: Music 346B.
Course designed to develop skills at professional level; study of conducting style as related to band and orchestra literature; score analysis and experience in conducting.

650. (250.) Advanced Performance Studies (2)
Fifteen one-hour private lessons.
Prerequisite: Audition before music faculty.
Advanced studies in technical, stylistic and aesthetic elements of artistic performance culminating in a graduate recital. Maximum credit four units applicable on a master's degree.

A. Piano
B. Harpsichord
C. Organ
D. Voice
E. Flute
F. Oboe
G. Clarinet
H. Saxophone
J. Bassoon
L. Trumpet
M. Trombone
N. Baritone Horn
O. Tuba
P. Percussion
Q. Violin
R. Viola
S. Cello
T. Contrabass
U. Harp
V. Classical Guitar
X. Classical Accordion
Y. Composition

652. (252.) Seminar in Music History (3)
Prerequisites: Music 552B and consent of instructor.
Seminars in music history are offered for intensive study in each of the historical eras as listed below.
A. Music of the Middle Ages and Renaissance
B. Music of the Baroque Era
C. Music of the 18th and 19th Centuries
D. Twentieth Century Music
E. American Music

655. (255.) Musicology (3)
Prerequisite: Music 552B.
Problems and research in musicology. Projects in bibliography, source materials, music history, criticism, aesthetics and related fields. Writing and presentation of a scholarly paper.

660. (260.) Seminar: A Major Composer (3)
Prerequisite: Music 552B. Completion of a seminar in Music 652A is recommended.
The life, milieu and works of a major composer, such as Bach, Mozart or Schubert will be studied. Maximum credit six units applicable on a master's degree.

665. (265.) Seminar in the Notation of Polyphonic Music (3)
Prerequisite: Music 552B. Completion of Music 652A is recommended.
Problems related to the notation of Medieval, Renaissance and Baroque music. Examples will be transcribed into modern notation.
A. Notation of Ensemble Music: White Mensural Notation.
B. Notation of Ensemble Music: Black Notation to the End of Franco-Norwegian Notation.

670. (270.) Seminar: Interpretation of Early Music (3)
Prerequisites: Completion of Music 652A and 652B is recommended.
Performance practice in Medieval, Renaissance and Baroque music; projects in music editing; reports; performance on historical instruments. Participation in the Collegium Musicum required.
Nursing

In the College of Professional Studies

Agency Member of the National League for Nursing

Accredited by the California Board of Nursing Education and Nurse Registration and by the National League for Nursing

Faculty
Emeritus: Nye
Professors: Black, Coveny, Johnson, Moses, Salerno, Sirovica, Thomas
Associate Professor: Laito
Assistant Professors: Barton, Flagg, La Monica, Laws, Leslie, Moffett, Rehman, Richards, Roth, Verderber, Warnock
Lecturers: Clerkin, Colwell, Dodson, Ford, Peters, Reimschissel, Schwartz, Wong

Offered by Nursing

Major in nursing with the B.S. degree in applied arts and sciences

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 64 of this catalog. A minor is not required with this major.

Compliance with Assembly Bill No. 2878 necessitates revision of both prerequisites and course offerings in the School of Nursing. All pre-nursing 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 licensing as a registered nurse in California and to apply for the California Certificate of Public Health Nursing.

All students, including registered nurses, are subject to the same requirements. However, graduates of associate degree and diploma programs in nursing may, after evaluation of their competencies, be placed in appropriate advanced nursing classes.

Nursing reserves the right to evaluate for acceptance, prerequisite courses required for nursing major completed over five years prior to application for admission or readmission.

Preparation for the major. Biology 261; Chemistry 200A-200B, 220; Microbiology 210; Psychology 101; Sociology 101, Zoology 108; three units in human growth and development; three units in personality development; three units in marriage and the family. (42 units.) Students must earn a minimum overall G.P.A. of 2.5 in courses listed under preparation for the major prior to acceptance into the nursing major. During the semester that the pre-nursing student is completing the prerequisite courses she must make application for admission to Nursing. Application forms are available in the Nursing office.

Major. A minimum of 50 upper division units in Nursing to include Microbiology 370, Nursing 301, 302, 303A-303B, 304A-304B, 311, 312, 321, 322, 323, 324, 331, 332, 333; and four units selected from Nursing 341, 342, 343, 344 and 345. All courses in the nursing program must be taken in sequence (see below). A minimum grade of C must be earned in each nursing course in order to enroll in the next sequential course. A nursing student who earns less than a grade of C must repeat that course prior to being admitted to the next course in sequence. No course in the major may be repeated more than once.

Sequence of Courses in the Nursing Major (50 Units).

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Third Level Courses

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Fourth Level Courses

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*Selected from one of the following: Nursing 341, 342, 343, 344, 345, 346.

UPPER DIVISION COURSES

300. (166.) Honors Course (3-5) 1, II
Refer to Honors Program.

301. (101.) Maternal-Neonatal Nursing (3) 1, II
Prerequisites: 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.

302. (102.) Maternal-Neonatal Nursing Experience (4) 1, II
Twelve hours of laboratory.
Prerequisites: 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.

303A-303B. (103A-103B) Psychiatric and Mental Health Nursing (2-1) 1, II
Prerequisites: For Nursing 303A, concurrent registration in Nursing 301, 302, and 304A; for Nursing 303B, Nursing 303A and concurrent registration in Nursing 304B, 311 and 312.
Beginning development in the utilization of principles and concepts of mental hygiene in meeting needs of patients exhibiting both normal and deviant behavior.

304A-304B. (104A-104B) Psychiatric and Mental Health Nursing Experience (2-2) 1, II
Six hours of laboratory.
Prerequisites: For Nursing 304A, concurrent registration in Nursing 301, 302, and 303A; for Nursing 304B, Nursing 304A and concurrent registration in Nursing 303B, 311 and 312.
Clinical experience focusing on the utilization of mental health concepts in meeting needs of patients.

311. (130.) Child Health Nursing (3) 1, II
Prerequisites: Nursing 301 and concurrent registration in Nursing 303B, 304B and 312.
Nursing care needs of the well and the sick child from birth through adolescence.

312. (131.) Child Health Nursing Experience (4) 1, II
Twelve hours of laboratory.
Prerequisites: 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.
321. (105.) Adult Health Nursing (4) I, II
Prerequisites: Nursing 311 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.

322. (106.) Adult Health Nursing Experience (4) I, II
Twelve hours of laboratory.
Prerequisites: 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.

323. (132.) Community Health Nursing (3) I, II
Prerequisites: Microbiology 370, Nursing 311 and concurrent registration in Nursing 321,
322 and 324.
Principles and concepts of community health necessary to maintain the health of
individuals, families and groups.

324. (133.) Community Health Experience (3) I, II
Nine hours of laboratory.
Prerequisites: Concurrent registration in Nursing 321, 322 and 323.
Clinical experience, in conjunction with community agencies, directed toward attaining
and maintaining the health of the total population.

331. (136.) Management of Patient Care (2) I, II
Prerequisites: Nursing 323 and concurrent registration in Nursing 332 and 335.
Principles of administration applied to the management and direction of the nursing team.
Focus directed toward the development of the professional nurse in assuming a leadership
role.

332. (137.) Management of Patient Care Experience (3) I, II
Nine hours of laboratory.
Prerequisites: Nursing 324 and concurrent registration in Nursing 331 and 335.
Clinical experience in utilizing tools and skills of management in assessing, providing and
directing health care.

335. (136.) The Professional Role (3) I, II
Prerequisite: Concurrent registration in Nursing 331 and 332.
Development of the nursing profession in Western Civilization. Focus on the multifaceted
role of the professional nurse in modern social order.

341. (151.) Advanced Concepts in Clinical Nursing (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 323.
Theory and selected practices in the care of the patient with complex problems requiring
intensive care, coronary care and/or rehabilitation.

342. (152.) Advanced Psychiatric and Mental Health Nursing (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 323.
Theory of and directed experience in the treatment and rehabilitation of patients with
emotional and psychiatric disorders. Focus on the role of the nurse as a member of the mental
health team in a variety of community settings.

343. (153.) Geriatric Nursing (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 323.
Principles of gerontology as they apply to the nursing care of the older patient in a variety of
settings.

344. (154.) Advanced Maternal-Neonatal Nursing (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 323.
Theory of and experience in the care of the high-risk maternity patient and the high-risk
neonate with emphasis on the needs of the family.

345. (155.) Cancer Nursing (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 323.
Theory and selected experience in the care of the cancer patient. Scope of cancer problem,
pathological processes of malignancies, current medical therapies and appropriate nursing
intervention are included.

346. Ambulatory Child Health Nursing (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 323.
Well child supervision. Emphasis on the physical and developmental assessment of infants.

400. (160.) School Nursing (3) Extension
Prerequisite: Nursing 323.
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. (165A.) The 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. (165B.) The School Nurse Practitioner (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 401A.
Theory and supervised practice of assessing the health-illness of children in the school
system.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.
Oceanography

Administered by the Dean of the College of Sciences

San Diego State University provides preparation for work in the oceans by offering degree programs in fundamental fields supplemented by marine-related course work and oceanographic experience. Interdisciplinary instructional and research activities are coordinated by the Center for Marine Studies. Ocean-oriented courses and bachelor's degree programs are available in the departments of: Biology, Botany, Chemistry, Civil and Mechanical Engineering, Geography, Geological Sciences, Microbiology, Physical Sciences, Physics and Zoology. Master's degree with emphasis on marine problems may be earned in these departments and in the School of Business Administration. The Ph.D. degree is offered in Chemistry, Ecology and Genetics jointly with the University of California. Certification by the San Diego State University Diving Control Board is required for all faculty and students performing SCUBA diving under the auspices of the University. Certification information can be obtained upon application to the Control Board via the Center for Marine Studies.

320. (100.) The Oceans (21, 22)
Prerequisites: One introductory college course in a life science and one in a physical science.
Biological and physical aspects of the oceans and their significance to man; problems of modern oceanography. Not open for credit to students majoring in the sciences.

400. (106.) Practical Oceanography (6) 1, II Cr/NC
Laboratory, field work, or on-the-job training by arrangement.
Prerequisites: Chemistry 200A-200B; Physics 124A-124B and 125A-125B; a course in intermediate college algebra and an elementary course in statistics. Recommended: a course in analytical chemistry (Chemistry 250 or 251).
Practical experience in oceanography at shore installations and at sea. An intensive full-time program in the laboratory and field aspects of the marine sciences. Offered only when ship scheduling permits. Enrollment only by application; students will be notified of selection by the tenth week of the semester preceding the desired interval because of ship berth limitations. Students will normally participate on extended cruises at sea and are advised not to enroll for other courses nor to make employment commitments during the semester.

For additional courses in Oceanography see:
Biology 531, Biological Oceanography
Chemistry 501, Chemical Oceanography
Geology 540, Marine Geology
Microbiology 540, Marine Microbiology
Physical Science 330, Physical Oceanography
Zoology 350, Marine Biology

Philosophy

In the College of Arts and Letters

Faculty
Professors: Crawford, Friedman, Howard, Koppelman, McClurg, Nelson, O'Reilly, Ruja, Shields, Snyder, Warren, Weissman (Chairman)
Associate Professors: Carella, Feenberg, Lauer, Rosensteil, Troxell
Assistant Professor: Weston
Lecturer: Manheimer

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 64 of this catalog. A minor is not required with this major.

Preparation for the major. Nine lower division units in philosophy including Philosophy 120.

Major. A minimum of 24 upper division units in philosophy to include Philosophy 301 and either Philosophy 303, 302, and 304, 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 or general education.

LOWER DIVISION COURSES

101. (J) 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. (J) 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. (J) 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. Use of logic in science and in daily life.

299. (90) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (106) Honors Course (1-3)
Refer to Honors Program.

301. (101) History of Philosophy I (3) I, II
Prerequisite: Three units of philosophy. Thales through Marcus Aurelius.

303. (103) History of Philosophy III (3)
Prerequisite: Philosophy 301. Recommended: Philosophy 502. Nicholas of Cusa through Kant.
dictatorship: ethical problems arising in law, medicine, business, government and interpersonal relationships.

334. (/J4.)

374 / 499.

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.

504. 505A-505B.

502. (102.) History of Philosophy II (3) Prerequisite: Philosophy 301. Plotinus through William of Occam.

504. (104.) History of Philosophy IV (3) Prerequisite: Philosophy 303. Fichte through Royce.


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. 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 or Mathematics 160. 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. Definition, classification and division. The logic of experimentation and statistics. Formation and validation of hypotheses. Probability theories.

523. (123.) Theory of Knowledge (3) Prerequisite: Six units of philosophy. The major theories of human knowledge: mysticism, rationalism, empiricism, pragmatism.
### GRADUATE COURSES

#### 601. (201.) Seminar in Ancient Philosophy (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 301. Directed research in a major author (e.g., Plato or Aristotle), or a school (e.g., the Pythagoreans or the Stoics), or a problem (e.g., causation or the state). Maximum credit six units applicable on a master’s degree.

#### 602. (202.) Seminar in Medieval Philosophy (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 502. Directed research in a major author (e.g., Augustine or Aquinas), or a school (e.g., neoplatonic or Aristotelianism), or a problem (e.g., political philosophy or reason and authority). Maximum credit six units applicable on a master’s degree.

#### 603. (203.) Seminar in Modern Philosophy (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 303. Directed research in a major author (e.g., Hume or Kant), or a school (e.g., the continental rationalists or the British empiricists), or a problem (e.g., the nature of substance). Maximum credit six units applicable on a master’s degree.

#### 605. (205.) Seminar in Contemporary Philosophy (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 505A or 505B. Directed research in a major author (e.g., Dewey or Wittgenstein), or a school (e.g., the pragmatists or the language analysts), or a problem (e.g., perception or personhood). Maximum credit six units applicable on a master’s degree.

#### 611. (211.) Seminar in Legal Philosophy (3)
Prerequisite: Twelve upper division units in philosophy. Directed research in recurrent themes of philosophical significance in jurisprudential literature.

#### 612. (212.) Seminar in Political Philosophy (3)
Prerequisite: Twelve upper division units in philosophy. Directed research in a major problem in political philosophy or the work of a major political philosopher.

#### 621. (221.) Seminar in Deductive Logic (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 521. A comparison of deductive systems in logic. Problems of definability, consistency and completeness. The role of logic in the foundations of mathematics.

#### 623. (223.) Seminar in Epistemology (3)
Prerequisite: Twelve upper division units in philosophy. Basic problems concerning meaning, perception and knowledge.

#### 625. (225.) Seminar in Metaphysics (3)
Prerequisite: Twelve upper division units in philosophy. An inquiry into the search for significant qualities of reality.

#### 628. (228.) Seminar in Ethics (3)
Prerequisite: Twelve upper division units in philosophy. Contemporary ethical issues. Critical analysis of the works of some leading theorists, such as Moore, Dewey, Stevenson and Toulmin.

#### 631. (231.) Seminar in Semantics and Logical Theory (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 521 and 531. Contemporary issues in the foundations of logic and theories of language.

#### 635. (235.) Seminar in Philosophy of Religion (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 535. A philosophical investigation of the nature of religious thought: its structure, growth and significance.

#### 636. (236.) Seminar in Philosophy of Art (3)
Prerequisite: Twelve upper division units in philosophy. An analysis, criticism and comparative study of selected philosophies of art.

#### 637. (237.) Seminar in Philosophy of Science (3)
Prerequisite: Twelve upper division units in philosophy including Philosophy 522 and 537. The methodology of the empirical sciences. The logical structure of science.
Physical Education
In the College of Professional Studies

Faculty
Emeritus: Schwob, Shannon, Sportman, Terry, Tollefsen
Professors: Andrus, Benison, Carter, Cullen, Fox, Governali, Kasch, Lockman, Murphy, Olsen, A., Olsen, L., Phillips, Schulte, Stall, Ziegenfuss
Associate Professors: Barone, Broadbent, Cave, Franz, Friedman, Moore, Seider, Supec
Wells (Chairman), Williamson
Assistant Professors: Gutowski, Hollyfield, Lamke, Landis, Quinn, Smith, Whitby, Wilhelm, Willis
Lecturers: Freischlag, Howell, Iverson, Lee

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 64 of this catalog.

Preparation for the major. Biology 462; Physical Education 141, 175, 190; Psychology 101; Zoology 108. (17 units.)

Major. A minimum of 24 upper division units in physical education to include 12 units from Physical Education 371, 356, 361, 370, 375, 385 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 64 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; Zoology 108; and 16 units selected from Art 101, 157, 201, 220, 258, 259; Drama 105, 130, 231, 250; Music 110A, 135, 151; Speech Communication 111A. (28 units.)

Major. A minimum of 24 upper division units to include four units from Physical Education 345D, 345E or 554A, 345F, 350, 351, 352, 353, 555A, 555B; 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 Major

For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements as outlined in the section of this catalog on 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 462; 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, 356, 361, 370, 375, 385 and 380; two units from each of the following groups for a total of 14 units: Physical fitness (345A); team sports (345L-men; 341C, 345M or 345N-women); individual sports (341L-men; 345L or 345N-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.

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 or general education.

Dance Minor

The minor in dance consists of Physical Education 133A-133B, 134A-134B, 150A-150B, 153, 154; two units selected from Physical Education 350, 351, 352 or 555A, 555B; and three upper division units selected from the areas of art, drama and music with the approval of the adviser in dance. (15 units.)

Courses in the minor may not be counted toward the major or general education.

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, 101B. (4A) Physical Fitness and Figure Control (1-1)
102A-102B. (2A-2B) Conditioning (1-1)
103A-103B. (3A-3B) Jogging (1-1)
104A-104B. (4A-4B) Weight Training (1-1)
105A, 105B. (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.
110A-110B, 111A-111B. (4A-4B) Soccer (1-1)
112A-112B, 113A-113B. (12A-12B) Field Hockey (1-1)
117A-117B, 118A-118B. (12A-12B) Archery (1-1)
119A, 119B. (12A-12B) Tennis (1-1)
130A (30A-30B) Synchronized Swimming (1-1)

131 (31.) Life Saving (1)

132A-132B (32A-32B) Ballroom Dance (1-1)

133A-133B (33A-33B) Folk and Square Dance (1-1)

134A-134B (34A-34B) Modern Dance (1-1)

135A-135B (35A-35B) Ballet (1-1)

136A-136B (36A-36B) Jazz (1-1)

138 (38.) Selected Activities (1)

May be repeated with new activity for additional credit. See class schedule for semester offerings.

139 (39.) Women's and Coed Teams (1)

Maximum credit four units.

A. Archery
B. Badminton
C. Basketball
D. Fencing
E. Field Hockey
F. Golf
G. Gymnastics

141. (41.) Physical Education of Children (2)

Four hours of activity.

A. Movement exploration activities for children
B. Rhythm and dance activities for children
C. Baseball
D. Track and Field (including Cross Country)
E. Gymnastic activities for children
F. Additional sports (offered on student demand) may be repeated with new content.

142. (42.) Rhythmic Gymnastics (Women) (1)

143. (43.) 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.

144. (44.) Advanced Modern Dance (1-1)

Two hours of activity.

Prerequisite: Physical Education 134.


152. (52.) 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.
### 380. (160.) 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.

### 382A-382B. (182A-182B.) Administration of Interscholastic Sports and Extracurricular Activities (3-3)
Materials covering the organization and administration of activities such as interscholastic sports, drill teams, extracurricular clubs, special events and programs, cheerleaders, intramural and extramural activities.
- A. Interscholastic sports
- B. Extracurricular activities

### 397. (197.) Workshop in Physical Education (1-2)
Methods, techniques and development of skills in such areas as aquatics, combatives, gymnastics, rhythms and dance, and individual and team sports. Designed for secondary school administrators, teachers, coaches, recreation and youth leaders. Maximum credit six units.

### 398. (198.) Supervised Field Experience (1-3)
Prerequisite: Consent of department chairman. Supervised practical experience in the area of physical education.

### 496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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 department chairman.

### 554A-554B. (154A-154B.) Problems in Dance (2-2)
Prerequisite: Physical Education 150A
Problems in ethnic or modern dance; history, anthropological basis, stagecraft, accompaniment, costuming.

### 555A-555B. (155A-155B.) Choreography in Contemporary Dance (3-3)
Two lectures and two hours of activity.
Prerequisite: Consent of instructor.
Experimentation in dance, relating contemporary theories to other art forms. Force and time-space relationships as factors of choreography.

### 556. (156.) History and Philosophy of Dance (2)
The cultural background of all forms of dance in various civilizations with emphasis on the relationship of the social structure to the existing dance forms.

### 560. (160.) Applied Anatomy and Kinesiology (3)
Prerequisites: Biology 462 and Zoology 108.
Anthropology, syndesmology and myology, with emphasis on movement analysis. Muscle groups and their functional relationships. Application of simple mechanical principles to movement analysis.

### 561. (161.) Physiology of Exercise (3)
Prerequisite: Biology 462 and Zoology 108.
Effects of physical activities on the physiological functions of the body.

### 563. (163.) Biomechanics of Human Movement (2)
Prerequisite: Zoology 108.
Mechanical principles as applied to movement; analysis and application to selected motor skills.

### 565. (165.) Prevention and Rehabilitation of Injuries to Athletes (2)
One lecture and three hours of laboratory.
Prerequisites: Physical Education 560 and 561.
384 / Physical Education

567. (167.) Adapted and Special Physical Education (2)
Prerequisites: Physical Education 560 and 561.
Adaptation of programs for atypical and handicapped individuals, including prescribed exercises, activities and evaluation.

570. (170.) Psychological Bases of Physical Education (3)
Prerequisite: Psychology 161.
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 appropriate to physical education criteria for test selection, construction and evaluation of tests; and the administration of a testing program in physical education.

GRADUATE COURSES

600. (200.) Seminar (3)
An intensive study in advanced physical education, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

604. (204.) Problems in Recreation (3)
(Same course as Recreation 604.)
Current problems facing the recreation profession, through a review of literature, discussion of trends, and observation of school and community situations. Analysis and evaluation of actual problems. Written reports required.

631. (206.) Seminar in Competitive Athletics (3)
Prerequisite: Major or minor in physical education or recreation.
Knowledge and appreciation of the skills, techniques and teaching methods involved in the coaching of athletics; the study of possible solutions to problems associated with the program of competitive school athletics.

660. (207.) Advanced Kinesiology and Biomechanics (3)
Prerequisite: Physical Education 560.

661. (208.) Advanced Physiology of Exercise (3)
Prerequisite: Physical Education 560 and 561.

662. (223.) Advanced Exercise Physiology Laboratory (3)
Nine hours of laboratory.
Prerequisite: Physical Education 567.
A laboratory course designed to develop competency in respiratory metabolism pulmonary function, gas analysis, blood chemistry and ergometry. Experience in the application of exercise procedures with human subjects and analysis and interpretation of results.

663. (221.) Exercise Electrocardiography (3)
Principles of resting and exercise electrocardiography with emphasis on ergonomic methods and application to exercise physiology.

666. (222.) Fitness of Adults (3)
One lecture and six hours of laboratory.
Prerequisite: Physical Education 567.
Evaluation, exercise prescription and training of adults. An understanding of the underlying hypokinetic diseases of adults and the procedures used in coping with the associated health problems of an automated environment.

667. (209.) Advanced Adapted Activities (3)
Prerequisite: Physical Education 567.
Potential diversities, lack of physical development, physical handicaps and special programs. Individual exercise programs. Preventive and corrective exercises. Functional examinations and the physician's report. Ethical procedures and limitations.

668. (226.) Principles of Neuromuscular Tension (3)
Prerequisite: Physical Education 560.
Theories underlying the causes of muscular hypertrophy and the application of hypokinetic principles in daily living.

670. (261.) Seminar in Motor Learning and Motor Performance (3)
Prerequisite: Physical Education 570.
A review of research in physical education and related fields plus experimental laboratory experiences in motor learning.

674. (215.) Philosophical Foundations for Physical Education (3)
Prerequisite: Consent of department chairman.
Major philosophies and their application in physical education.

702. (290.) History of Physical Education (3)
Historical forces guiding the development of physical education from ancient to modern times.

706. (205.) Current Trends and Issues in Physical Education (3)
A critical appraisal of contemporary trends and issues. Investigation and analysis of professional literature.

707. (212.) Problems in Physical Education (3)
Prerequisite: Major or minor in physical education.
A study of selected areas of the physical education program.

708. (211.) Curriculum in Physical Education (3)
Prerequisite: Major or minor in physical education.
Curricula in physical education. Special emphasis on curriculum construction and evaluation.

702. (202.) Administration of Physical Education in the Secondary Schools (3)
Prerequisite: Major or minor in physical education.
Topics include personnel problems, selection and maintenance of equipment and facilities, program organization and evaluation, budget and related items.

708. (211.) Advanced Evaluation in Physical Education (3)
Prerequisite: Physical Education 585.
Methods, statistical techniques and apparatus used in testing physical performance. Sources of error, limitations on application and interpretation. Practice in construction and use of tests.

791. (294.) Research Techniques (3)
Prerequisites: Major in physical education and Physical Education 585.
Principles and methods of planning and carrying out the investigation of problems related to physical education. The development of research designs and practice in formulating and testing hypotheses as well as the interpretation of results. (Prerequisite to thesis.)

795. (295.) Seminar in Physical Education (3)
Prerequisites: Physical Education 791 and advancement to candidacy for the master's degree in physical education.
Selected subjects in physical education culminating in written projects. Limited to students following Plan B for the Master of Arts degree in Physical Education.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of department chairman.
Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university. Student must be registered in the course when the completed thesis or project is granted final approval.
Physical Science
In the College of Sciences

Faculty
Emeritus: Watson
Professors: Dessel, Merzbacher, Shull (Chairman)
Associate Professors: Feher, Ingmanson, Metzer, Springer, Wallace
Assistant Professors: Dowler, Jackson, May, Pfieger, 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, physics and statistics 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 or general education.

LOWER DIVISION COURSES
100A-100B. (2A-2B.) 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 conducted 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. Fulfills 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.

126. (5.) Technology and Human Values (3) 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.

210A-210B. (104-10B.) Structure and Concepts of Physical Science (4-4) I, II
Three lectures and three hours of laboratory.
Physical Science 210A is prerequisite to 210B.
Emphasis on processes of inquiry which are characteristic of physical science. Approach is suited for people interested in science instruction at the elementary level. Not open to students with credit or concurrent registration in Physical Science 100A or 102.

295. (90.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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
305. (130.) Modern Physical Science (3) I, II
Prerequisite: At least one college-level course in the physical sciences or life sciences.
Current topics in physical science. Emphasis on broad interdisciplinary subject areas directed toward extending general education in science related to contemporary issues raised by science and technology. Consult class schedule for topic of current semester. May be repeated with new content. Maximum credit six units.

316-S. (140-) Contemporary Problems in Physical Science (1) S Cr/NC
A series of six weekly lectures on varied aspects of physical science. Reading and reports required of students enrolled for credit. Maximum credit three units. These lectures are open to the public.

311. (130.) Readings in Physical Science (3) I
Reading of selected materials with informal class discussion of topics. Emphasis on the historical background, the philosophical implications and the impact of science on thought and culture.

315. (142.) History of Science I (3) I, II
Prerequisites: Completion of minimum general education requirements in science and six units of history.
The growth and development of science from antiquity to the 15th century. Emphasis on man's cognitive reactions to his environment through the coalescence of the occult arts, empirical practices and rational thought associated with early scientific theory.

316. (143.) History of Science II (3) I, II
Prerequisite: Physical Science 315.
The major developments during the 16th through 19th centuries. The scientific revolution, the rise of empiricism, the emerging role of scientific societies. Histories of particular theories in both the life sciences and physical sciences.

317. (160.) Development of Scientific Thought (3) I, II
Prerequisites: Six units from astronomy, chemistry, geology, physics, or mathematics: 121.
Basic scientific concepts and their historical development with emphasis on the problem of theory construction. The relationship between disciplined imagination and observational fact, as illustrated by selected case histories. Limitations of scientific inquiry.

330. (110.) Physical Oceanography (3) I, II
Prerequisites: Chemistry 200A, Mathematics 140, Physics 115A or 124A.
History and structure of the ocean basins; geochronology and origins of sea water; dynamics of ocean currents, waves and tides; heat budget of the oceans.

405. Seminar (2 or 3) I, II
A directed study of a topic to be chosen by instructor and announced in class schedule. Maximum credit six units.

412A-412B. (120.) Processes and Inquiry in Physical Science (3-3) I, II
Prerequisites: One lower division course in physical or life science.
Investigation of processes in science and the rational thinking skills characteristic of the physical sciences.

422A-422B. (135A-135B.) Curricula in Physical Science (3-3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Introductory course work in physical science, physics or chemistry.
Prerequisites: Principles of physical science as presented in national curriculum study courses such as Project Physics, PSSC, IPS, and PSNS.
430. (167) Interpretation of Quantum Mechanics (3) I, II
Identity, causality, questions of reality: the uncertainty principle. Especially intended for
upper division students in the humanities who are curious about modern science.
431. (167) The Origins of Life (3) II
Prerequisite: Completion of general education requirements in science, including
Chemistry 200A or Physical Science 100A or 102.
Theories of chemical evolution with emphasis on multidisciplinary aspects involving
geology, geochemistry, cosmochemistry and molecular biology.
436. (196) Advanced Physical Science (1-3) I, II
Prerequisite: Consent of instructor.
Selected topics in classical and modern physical science. May be repeated with new
content. Maximum credit six units.
449. (199) Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study or laboratory work on a special problem in physical science selected by the
student. Maximum credit six units.

GRADUATE COURSES

700. (200) Seminar (2 or 3)
An intensive study in advanced physical science, topic to be announced in the class
schedule. Maximum credit six units applicable on a master's degree.
710. (210) Advanced Topics in Physical Science (3) I, II
Prerequisite: Undergraduate major or minor in one of the physical sciences.
Selected topics in classical and modern physical science. Topics covered in a particular
semester to be announced in the class schedule. Maximum credit six units applicable on a
master's degree.
798. (292) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units. Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
799A. (299) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a thesis or project in one of the physical sciences for the master's degree.
799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A
in which the student expects to use the facilities and resources of the university; also student
must be registered in the course when the completed thesis or project is granted final approval.

Chemical Physics Major

With the B.S. Degree in Applied Arts and Sciences
Preparation for the major. Chemistry 200A-200B or 204A-204B, 231 and 251; Mathematics
150, 151 and 152; Physics 195A-195B-195C. (43 units.)
Major. A minimum of 39 upper division units to include Chemistry 410A-410B, 431, 520A

Physics Major

With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the requirements
listed on page 64 of this catalog. To meet the foreign language requirement for graduation, students should choose French,
German or Russian.
A minor in mathematics is required. It should include Mathematics 150, 151, 152,
340A-340B, and three units from Mathematics 521A, 532 or 534A. Mathematics 302 is
acceptable for students preparing for elementary or secondary teaching. Students planning
graduate work in physics should take additional mathematics beyond these listed.
Preparation for the major. Chemistry 200A-200B or 204A-204B; Mathematics 150, 151,
152; Physics 195A-195B-195C. (35 units.)
Major. A minimum of 27 upper division units in physics and mathematics to include
should choose the remaining units with the guidance of the departmental advisor. For
preparation for graduate work in physics, the student should choose from Physics 306, 408,
496, 497, 498, 510, 532, 542, 552 and 564.

Physics Major

With the B.S. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation
requirements listed on page 64 of this catalog. A minor is not required with this major.
Preparation for the major. Chemistry 200A-200B or 204A-204B; Mathematics 150, 151 and
152; Physics 195A-195B-195C. (35 units.)
Major. A minimum of 39 upper division units in physics and mathematics to include
units of electives.
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 or general education.

Physics

For the Single Subject Teaching Credential in Physical Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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 (4) I, II

Three lectures and three hours of laboratory.

Some of the more important phenomena and concepts in physics with practical illustrations and applications. Not open to students with credit for Physics 115A-115B, 124A-124B, 195A-195B, 195C or 195E.

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 195A; 115B is not open to students with credit in 124B, 195B, 195C or 195E.

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 195A; 124B is not open to students with credit in 115B, 195B, 195C or 195E.

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 195A; 125B is not open to students with credit in 115B, 195B, or 195C.

149. (11.) Special Topics in Physics (1-2) I, II

Prerequisite: Credit or concurrent registration in Physics 115B, 124B, or 195B; or credit in Physics 107.

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.

195A-195B-195C. (4A-4B-4C) Principles of Physics (4-4-4) I, II

Three lectures and three hours of laboratory.

Prerequisites for 195A: Completion of high school physics and credit or concurrent registration in Mathematics 150. Prerequisites for 195B: Physics 195A and credit or concurrent registration in Mathematics 151. Prerequisites for 195C: Physics 195B or 195E and credit or concurrent registration in Mathematics 152. 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.

195E. (4E) Principles of Physics for Engineers (4)

Three lectures and three hours of laboratory.

Prerequisites: Completion of high school physics or equivalent and credit or concurrent registration in Engineering 200.

Designed to prepare the engineering student for Physics 195C 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 195A or 195B.

215. (71.) Introductory Electronics (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Physics 115B, or 124B and 125B, or 195B; and Mathematics 122.

Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 311.

299. (59.) Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 115. 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. (766.) Honors Course (1-3) I, II

Refer to Honors Program.

302. (118.) Nuclear Energy (2)

Prerequisite: Physics 115B, or 124B and 125B, or 195C or 195E.

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.

Prerequisites: 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

Prerequisite: Physics 107, 115B, or 124B.

Modern developments in physics for non-physics majors, including relativity, introductory quantum theory, and atomic, nuclear and solid state physics.

306. (106.) Optics (3) II

Prerequisite: Physics 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 195C.

Ray tracing, aberrations, matrix methods, optical instrumentation.

311. (103.) Electromagnetics for Scientists (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Physics 115B or 124B and 125B or 195B; 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 195B.
Modern electronics instrumentation used in making physical measurements. May not be used in the physics major.

350A-350B. (100A-100B.) Classical Physics (3-3) I, II
Prerequisite: Physics 195C and credit or concurrent registration in Mathematics 340A.
Semester I: Newtonian mechanics and wave motion. Semester II: Electrostatics and magnetostatics.

354A-354B. (102A-102B.) Modern Physics (3-3) I, II
Prerequisite: Physics 195C. 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. (116.) Advanced Physical Measurements (3)
One lecture and six hours of laboratory.
Prerequisite: Physics 195C 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. (170.) Electromagnetic Theory (3) I, II
Prerequisite: Mathematics 340B, Physics 350B and 354B.
Electromagnetism and magnetostatics treated by vector methods; Maxwell's equations. Electromagnetic induction, radiation and wave propagation.

408. (175.) Advanced Mechanics (3) I
Prerequisite: 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. (163.) 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, lock-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. (164.) Techniques of Scientific Instrumentation (3) II
One lecture and six hours of laboratory.
Prerequisite: Physics 195C.
Nuclear and optical instrumentation, low temperature and high vacuum techniques, magnet technology.

416. (154.) 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. (192.) Minicomputer Interfacing (3) II
Two lectures and three hours of laboratory.
Prerequisite: Physics 313.
Theory and practice of minicomputer control and interfacing techniques. Elementary machine language programming, computer control of experiments, basics of ADC and DAC, information theory, and minicomputer architecture will be covered.

420. (172.) Physical Electronics (3) I
Prerequisites: Mathematics 340B, Physics 350B and 354B.
Conductors; Fermi model; thermionic, photoelectric and field emission; contact potentials; space charge. Semiconductors; linear equivalent; circuits; elements of frequency and time domain analysis, linear feedback circuits.

431A-431B. (115A-115B.) 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. (196.) Advanced Physics (1-3) I, II
Prerequisite: Consent of instructor.
Selected topics in classical and modern physics. May be repeated with the consent of the instructor. Maximum credit six units.

498A. 196A. Senior Research (1) I, II
One discussion period and two additional hours per week to be arranged.
Prerequisite: Senior standing in physics and an acceptable plan for graduation within one year.
Selection and design of individual research project. Oral and written progress reports.

498B. 196B. Senior Research (2) I, II
Two discussion periods and four additional hours per week to be arranged.
Prerequisite: Physics 498A with grade of C or better.
Laboratory work, progress reports, oral and written final reports.

499. (199.) 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 are to be arranged in each case. Maximum credit six units.

510. (190.) 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.

520. (156.) Digital Computers (3) I
Prerequisites: Mathematics 107 and 340B; Physics 215 or 311.
The binary number system; electronic and magnetic flip-flop circuits; memory devices; programming; complete computer systems. Auxiliary equipment for inserting information and reading out results rapidly. Typical applications and limitations.

532. (189.) 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. (122.) 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. (114.) Acoustics (3) I
Prerequisites: Physics 350B and 357.

552. (186.) Modern Optics (3) I
Prerequisites: Mathematics 340B, Physics 350B and 354B.
Optics of solids, coherence and partial coherence theory, Fourier optics, holography.
553. (187) 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. (148) Nuclear Physics Laboratory (3) II
One lecture and six hours of laboratory.
Prerequisite: Physics 303 or 357.
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. May be repeated with new content with the approval of the instructor for a maximum of four units.

564. (151) Nuclear Physics (3) I, II
Prerequisite: Physics 310.
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 356.
Relative coordinates, Lorenz transformation, covariant formation of the laws of physics, applications of special relativity, introduction to curved space time, cosmology.

GRADUATE COURSES

600. (200) Seminar (1-3)
Prerequisite: Consent of instructor.
An intensive study in advanced physics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

602A-602B. (210A-210B) Mathematics of Physics (3-3)
Prerequisite: Mathematics 340B. Physics 602A is prerequisite to 602B.
Topics from matrix theory, vector and tensor analysis, orthogonal function theory, calculus of variations and probability theory with particular emphasis on applications to physical theory.

604A-604B. (270A-270B) Electromagnetic Theory (3-3)
Prerequisite: Physics 400. Physics 604A is prerequisite to 604B.
Boundary value problems; time varying electric and magnetic fields; propagation of radiation; antennas, wave guides.

606. (219) Statistical Mechanics (3)
Prerequisite: Physics 408 and 510.
Classical and quantum statistics, kinetic theory, low-pressure phenomena, Boltzmann transport equation, irreversible processes.

608. (205) Theoretical Mechanics (3)
Prerequisite: Physics 408.

610A-610B. (275A-275B) Quantum Mechanics (3-3)
Prerequisites: Physics 564 and 408. Physics 610A is prerequisite to 610B.
Quantum theory of radiation, molecular and nuclear systems. Approximation methods.

632. (280) Theory of the Solid State (3)
Prerequisites: Physics 408, 510 and 532.
The band theory of solids, with applications to the electrical and optical properties of dielectrics, semiconductors and metals.

642. (214) Advanced Acoustics (2)
Prerequisite: Physics 542.
The acoustic wave equation in two and three dimensions. Propagation of sound in bounded media and enclosures. Radiation and scattering. Electrical-mechanical-acoustical elements and circuits.

646. (232) Concepts in Relativity (2)
Prerequisites: Physics 431A and credit or concurrent registration in Physics 431B.
The development of the concepts of relative motion from Einstein's assumptions and from experimental results. Designed for physics teachers.
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Political Science

In the College of Arts and Letters

Faculty
Emeritus: Leiffer
Professors: Andrain, Crain, Feierabend, Generales, Gripp, Janssen, Johns, Kahng, Miles, Nexvold, Padgett, Schultz
Associate Professors: Anderson, Conniff, Cutter, Funston, Hobbs, Lewin, Terrell (Chairman)
Assistant Professors: Fairlie, Jones, Keiser, Loveman, Soule
Lecturers: Binion, George, Goldstein, Hyduski

Offered by the Department
Master of Arts degree in political science.
Major in political science with the A.B. degree in liberal arts and sciences.
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 64 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.)

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 520 to 543-5.
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 375A to 394 and 576 to 590.

Political Science Minor

The minor in political science consists of a minimum of 15 units of political science, to include Political Science 110, 120 or 130, and nine units in upper division courses. Courses in the minor may not be counted toward the major or general education.

110. (I.) 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. (I.) 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. (I.) 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.
UPPER DIVISION COURSES

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

395-S. (196-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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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 Sartre. The following topics may be covered: conservatism, liberalism, utilitarianism, socialism, fascism, positivism and existentialism.

303. (106-A) Socialist Political Thought (3) I, II
Prerequisites: Political Science 110 or 120, and 302 or 501B.
Socialist thought from an historical perspective.

310. (116.) 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.

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. (106-B) Socialist Political Thought (3) I, II
Prerequisites: Political Science 110 or 120, and 501B or 302.
Selected topics in socialist thought.

505. (105-A) 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. (111.) 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.

522. (118.) Urban Politics (3)
Prerequisite: Political Science 110 or 120.
The processes by which social conflicts in American urban areas are represented and regulated. Urban political culture, ecology, group development and activity, power structures, and reform movements are surveyed. The character of the urban political "problem" and proposed solutions are evaluated.

523. (119.) Community Political Behavior (3)
Prerequisite: Political Science 110 or 120.
The study of structures 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 or 520.
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; public 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. (122-S) Contemporary American Politics (3) S
Prerequisite: Seminar in political thought or consent of instructor.
The study 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)

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. (135.) 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.

546. (138.) Law and the Political System (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.
400 / Political Science

Research Methods (Group II)

515A-515B. (1004-1006) Research Methods in Political Science (3-3) I, II
Prerequisite: Political Science 140. Political Science 515A is prerequisite to 515B.

Politics (Group III)

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 120. 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
Prerequisite: Political Science 120. Political attitudes, behavior and thought of selected minority groups.

335. (130) Government and Public Policy (3)
Prerequisite: Political Science 120. Theory and practice of the governmental processes of formulating public policy, roles of administrators, legislators, courts, interest groups and political parties: public agencies, policies, practices and studies of formulating public policies.

338. (125) The Legislative Process (3) I, II
Prerequisite: Three upper division units within Group III and consent of instructor.

340. (128) Internship in Politics (2-6) I, II, S
Prerequisite: Three upper division units within Group III and consent of instructor.

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.

520. (116) American National Government (3) I, II
Prerequisite: Political Science 120 or 320, or History 100A-100B. An intensive examination of the primary institutions of the national government. Critical analysis of changing aspects of traditional relationships among the institutions of presidential, congressional and the judiciary.

Comparative Government (Group V)

370. (182) 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.

555. (190) 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.

556. (185) Governments of Continental Europe (3) I, II
The systems of political and governmental systems of western continental Europe.

557. (186) Government of England (3) I, II
The structure and functioning of the English parliamentary system with emphasis on present-day political principles and parties.

558. (186) Comparative Communist Governments (3) I, II
The relations between the theory and practice of modern communism as found in representative communist systems.

559. (187) Government of the Soviet Union (3) I
Theory and practice of government in the Soviet Union, with some attention to foreign affairs.

561. (192) Governments and Politics of the Developing Areas (3) I, II
Prerequisite: Political Science 110 or 130. General pattern of politics and political development in nations which are the focus of current world politics.

562. (187) Governments and Politics of the Far East (3)
The governmental and political structures and the foreign policies of developing nations.

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
The governmental and political structures of representative states 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
The governmental and political structures of African states.

566. (194) Political Change in Latin America (3)
The governmental and political structures of Latin America.

567. (195) Political Systems of Latin America (3)
The governmental and political structures of Latin America.

568. (184) The Mexican Political System (3)
Prerequisite: Political Science 110 or 130. Principles and institutional structures of Mexican government and domestic and foreign policy making.

571. (193) Seminar in Cross-national Studies (3) I, II
Prerequisite: Any upper division course in comparative politics. Cross-national analysis of institutional norms, attitudes and behavior in relation to government: factors which determine patterns and styles of political participation in contemporary societies.
International Relations (Group VI)

375A-375B. (J70A-J70B) International Relations (3-3) 1, II
An historical and analytical consideration of the basic factors—historic, geographic, economic, ideologic and strategic—which underlie and condition the modern conflict between the "sovereign state" and the "community of nations." Semester I: Origins and development through the nineteenth century. Semester II: Twentieth century experimentation and conflict.

378. (171) The Conduct of American Foreign Relations (3) I
The legal, administrative and political organizations by which American foreign policies are formulated and implemented.

393-S. (168-S) Institute on World Affairs (3) S
Contemporary problems in international relations. May be repeated once for credit with permission of the instructor.

394. (178) Special Problems in International Politics (3) I, II
Prerequisites: Political Science 110, 120 and three upper division units within Group VI.

576. (172) International Organization (3) I
The organization by which the international community seeks to provide for the exercise of legislative, administrative and judicial functions on the international level: diplomatic and consular corps; conferences; administration through commissions and unions; amicable procedures for settlement of disputes; the League of Nations—United Nations experiment.

577. (173) Principles of International Law (3)
The function of law in the international community. The historical development of the ideas and rules of international law and their place in the modern diplomatic and legal structure.

579. (174) National Security Policy (3)
Objectives, instruments and consequences of national security policy.

580. (177) Comparative Foreign Policies (3)
Prerequisite: Six units of political science.

581. (176) International Relations of the Developing Nations (3)
Prerequisite: Six units of political science.

582. (175) International Relations of the Latin American States (3)
The foreign policies of the Latin American states; the organization of American states, relationships with the United Nations and with the United States.

590. (165) Dynamics of Modern International Crises (3) I, II
Prerequisite: Consent of instructor.
The determination and analysis of facts surrounding international crises since World War II; the evaluation of these crises and their effects upon external policies of the United States and the operations of the United Nations.

GRADUATE COURSES

601. (206) Seminar in the Scope and Method of Political Science (3)
The discipline of political science and systematic training in its methodology. Required of all applicants for advanced degrees in political science.

605. (210) Seminar in Political Theory (3)
Maximum credit six units applicable on a master's degree.

620. (215) Seminar in American National Government (3)
Maximum credit six units applicable on a master's degree.

622. (255) Seminar in Metropolitan Government and Politics (3)
Prerequisite: Political Science 321 or 522 or 523.
Government and politics in the world's major metropolitan areas. Maximum credit six units applicable on a master's degree.

623. (250) Seminar in Local Government (3)
Selected problems of state and local government and intergovernmental relations. Maximum credit six units applicable on a master's degree.
700. (290.) Bibliography (1)
Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

795. (291.) Problem Analysis (3)

797. (297.) Research in Political Science (3) Cr/NC
Prerequisite: Consent of the department chairman. Research in political theory, political parties, comparative government, international relations, public law or American government.

798. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

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Portuguese

In the College of Arts and Letters

Faculty
Assistant Professor: Windsor

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.
Courses in the minor may not be counted toward the major or general education.

High School Equivalents
High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.
The first two years of high school Portuguese may be counted as the equivalent of Portuguese 101; three years the equivalent of Portuguese 102; and four years 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

301A-301B. 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. Selected Studies (3)
Topics in Luso-Brazilian language, literature, culture and linguistics.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

534. Portuguese Literature (3)
A study of important movements, authors and works in the literature of Portugal from its beginnings to the present.

535. Brazilian Literature (3)
A study of the important movements, authors and works of the literature of Brazil from the colonial period to modern times.

Psychology

In the College of Sciences

Faculty
Emeritus: Carlson, Kidwell, McCollom, Peiffer, Steinmetz, Treat, Turner, Voeks
Professors: Alf, Dicken, Feierabend, Gallo, Graf, Grossberg, Harari, Harrison, Hillis, Hunrichs, Kaplan, O., Karen, Kass, Kinnon, Koppman, Leckart, Leukel, Levine, Linton, McDonald, O'Day, Parker, Penn (Chairman), Radlow, Sattler, Schulte, Segal, Shephard, Stevens
Associate Professors: Bryson, DeFran, Franzini, Graham, Hornbeck, Lynn, Mollenauer, Perrone, Plotnik, Rodin, Sand, Smith, Yaremko
Assistant Professors: Eisen, Kaplan, Litrownik, McCordick, Price, Spinella
Lecturers: Bakker, Borges, Bryson, Buchanan, Chase, Hillyard, Scolay

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 64 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.
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.
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 B, the following courses in other departments are recommended as electives: Biology 350, 549; Economics 330; and courses in family studies and consumer sciences.

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 or general education.
### LOWER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites/Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introductory Psychology</td>
<td>3, 1, II</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>The Evaluation of Psychological Literature</td>
<td>3, 1, II</td>
<td>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.</td>
</tr>
<tr>
<td>150</td>
<td>Psychology of Individual Adjustment</td>
<td>3, 1, II</td>
<td>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.</td>
</tr>
<tr>
<td>260</td>
<td>Introduction to Physiological Psychology</td>
<td>3, 1, II</td>
<td>Prerequisite: Psychology 101. Physiological mechanisms underlying the psychological phenomena of sensation, perception, emotion, motivation, learning and psychosomatic disorders.</td>
</tr>
<tr>
<td>270</td>
<td>Statistical Methods in Psychology</td>
<td>3, 1, II</td>
<td>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. Not open to students with credit in Psychology 475A-475B.</td>
</tr>
<tr>
<td>299</td>
<td>Experimental Topics</td>
<td>2-4</td>
<td>Refer to the catalog statement on Experimental Topics on page 115. 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites/Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>Honors Course</td>
<td>1-3, 1, II</td>
<td>Refer to Honors Program. A series of six weekly lectures by visiting psychologists on subjects related to current research problems. Reading and reports required of students enrolled for credit. Maximum credit three units.</td>
</tr>
<tr>
<td>301-S</td>
<td>Contemporary Problems in Psychology</td>
<td>1</td>
<td>Lectures open to the public. A series of six weekly lectures by visiting psychologists on subjects related to current research problems. Reading and reports required of students enrolled for credit. Maximum credit three units.</td>
</tr>
<tr>
<td>316</td>
<td>Operant Behavior</td>
<td>3</td>
<td>Prerequisite: Psychology 210. Contingencies of reinforcement, stimulus control, response shaping, averiscive control, and other basic principles of operant behavior applied to the understanding and modification of human behavior.</td>
</tr>
<tr>
<td>317</td>
<td>Psychology of Verbal Behavior and Learning</td>
<td>3</td>
<td>Prerequisites: Psychology 101 and consent of instructor. Analysis of linguistic and cognitive processes within the context of social behavior.</td>
</tr>
<tr>
<td>320</td>
<td>Personnel and Industrial Psychology</td>
<td>3</td>
<td>Prerequisites: Psychology 101, and 270 or statistics in another field. Psychological principles applied to industrial problems of selection, placement and training.</td>
</tr>
<tr>
<td>321</td>
<td>Organizational Psychology</td>
<td>3</td>
<td>Prerequisite: Six units of psychology. The interaction 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.</td>
</tr>
<tr>
<td>322</td>
<td>Consumer Psychology</td>
<td>4</td>
<td>Two lectures and six hours of laboratory. Prerequisites: 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.</td>
</tr>
<tr>
<td>325</td>
<td>Human Factors Psychology</td>
<td>4</td>
<td>Two lectures and six hours of laboratory. Prerequisites: Psychology 101 and consent of instructor. Experimental techniques and procedures in the application of synthesis of behavioral criteria to the design, development, operation and maintenance of man-machine-environmental systems. Government and industry job requirements, routines and practices.</td>
</tr>
<tr>
<td>330</td>
<td>Developmental Psychology</td>
<td>3</td>
<td>Prerequisite: Psychology 101. The psychological development of the normal individual from conception through childhood, adolescence, maturity, and old age. Stress is laid upon the independence and 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.</td>
</tr>
<tr>
<td>335</td>
<td>Psychology of Later Maturity</td>
<td>3</td>
<td>Prerequisite: Psychology 101. The psychological, physiological, and sociological factors influencing behavior in the later years of life.</td>
</tr>
<tr>
<td>340</td>
<td>Social Psychology</td>
<td>3</td>
<td>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.</td>
</tr>
<tr>
<td>342</td>
<td>Opinion Measurement</td>
<td>3</td>
<td>Prerequisite: Psychology 101. Discussion of social issues and problems of importance to the contemporary world; the history, methods and problems of public opinion and attitude measurement. Emphasis will be placed on the polls of consumers and voters. Students will be given field experience.</td>
</tr>
<tr>
<td>347</td>
<td>Psychology of Contemporary Social Problems</td>
<td>3</td>
<td>Prerequisite: Psychology 101. The causes, symptoms, and modification of behavior disorders with emphasis on neurosis, psychosis, and personality disorders.</td>
</tr>
<tr>
<td>350</td>
<td>Abnormal Psychology</td>
<td>3</td>
<td>Prerequisite: Six units of psychology. Psychological principles of personality functioning and adaptation.</td>
</tr>
<tr>
<td>351</td>
<td>Psychology of Personality</td>
<td>3</td>
<td>Prerequisite: Six units of psychology. Psychological principles of personality functioning and adaptation.</td>
</tr>
</tbody>
</table>
410 / Psychology

365. Drugs and Behavior (3)
Prerequisites: Psychology 101 and 260.
The effects of hallucinogens, tranquilizers, stimulants, alcohol and other depressants, on the nervous system, personality, and intellectual functioning.

375. Computer Methods in Psychology (3)
Prerequisites: Psychology 101, and credit or concurrent registration in Psychology 270.
Fundamentals of programming in "BASIC" computer language. Application to statistics and other quantitative topics in psychology.

386. (178) Theories of Personality (3) I, II
Prerequisites: Major in psychology and six upper division units in psychology.
Representative personality theories and supporting evidence.

405. (105) Psychological Testing and Measurement (3) I, II
Prerequisite: Psychology 270, or a semester of statistical methods in any other department.
Measurement theory and the basic principles of testing. The selection and critical evaluation of group tests of intelligence, personality, aptitude, interest and achievement.

410. (110) Introduction to Experimental Psychology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 210 and 270.
Understanding of experimental design, quantitative methods, and experimental reports as they are applied to all areas of psychology. Not open to students with credit in Psychology 475A-475B.

411. (111) Experimental Psychology: Perception (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of perception.

412. (112) Experimental Psychology: Social (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of social psychology.

413. (113) Experimental Psychology: Physiological (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 260 or 460 or six units of biology; and Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of physiological psychology. Surgical and histological techniques necessary to research in brain mechanisms and behavior; includes basic electronics for biological scientists.

414. (114) Experimental Psychology: Comparative (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of comparative psychology.

415. (115) Experimental Psychology: Personality and Clinical (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350 and 410.
Experimental and theoretical literature, assigned and original laboratory projects in the field of personality and clinical psychology.

416. (116) Experimental Psychology: Learning (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of learning.

417. (117) Experimental Psychology: Primate Behavior (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original observational and experimental projects in the field of primate learning and behavior.

418. (118) Experimental Psychology: Child Development (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 330 and 410.
Methods; techniques and principles used in the scientific study of child behavior.

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, aphasia, ataxia, mental defect, and psychopharmacology.

454. (106) 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.
412 / Psychology

475A-475B. Statistical Methods and Experimental Psychology (4-4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 210 and mathematical aptitude examination.
480. History of Psychology (3, 1, II)
Limited to psychology majors with senior standing.
481. Philosophical Issues in Psychology (3, 1, II)
Prerequisite: Twelve units of psychology.
484. Theories of Perception (3, 1, II)
Prerequisite: Psychology 410.
487. Theories of Learning (3, 1, II)
Prerequisites: Psychology 210 and 270.
496. Selected Topics in Psychology (1-3)
Prerequisite: Six units of psychology.
497. Senior Project (1-3, 1, II)
Prerequisites: Twelve units of psychology and consent of instructor.
499. Special Study (1-3, 1, II)
Individual study, including library or laboratory research and a written report. Maximum credit six units.
Prerequisite: Consent of department chairman.

GRADUATE COURSES

605. Seminar in Theoretical Psychology (3)
Prerequisites: Psychology 480 or 680, and consent of graduate adviser.
687. Applied Community Psychology (3)
Prerequisite: Consent of graduate adviser.
699. Field Work in Community Psychology (3)
Prerequisites: Psychology 607 and consent of graduate adviser.
620. Industrial-Organizational Psychology (3)
Prerequisite: Consent of graduate adviser.
621. Seminar in Personnel Psychology (3)
Prerequisites: Psychology 320 or 620, and consent of graduate adviser.

622. Seminar in Organizational Psychology (3)
Prerequisites: Psychology 321 or 620, and consent of graduate adviser.
Applications of psychological principles and methods of investigation to problems of industrial relations and motivation of employees; factors influencing morale and employee productivity; criteria of job proficiency; psychological aspects of worker-management relationships and leadership.

650. Counseling and Psychotherapy Laboratory (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 345 or 365, and consent of graduate adviser.
Supervised practice in the application of psychotherapeutic and counseling techniques from selected cognitive, dynamic, interpersonal, and behavioral approaches.

651. Seminar in Behavior Disorders of Childhood and Adolescence (3)
Prerequisites: Psychology 330, 350 and consent of graduate adviser.
Contemporary approaches to emotional and behavioral problems of childhood and youth. Considers developmental, cognitive, and social variables as well as theory and treatment.

652. Seminar in Behavior Disorders of Adults (3)
Prerequisites: Psychology 350 and consent of graduate adviser.
Contemporary approaches to emotional and behavioral problems of adulthood. Considers developmental, cognitive, and social variables as well as theory and treatment.

653. Clinical Psychology (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350, 405 and consent of the graduate adviser.
Clinical assessment, theory and practice of behavior change, and professional ethics. Not open to students with credit or concurrent registration in Psychology 451.

654. Psychological Assessment I (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350, 405, and consent of graduate adviser.
Theory and practice in assessment of intelligence and special abilities.

655. Psychological Assessment II (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 654 and consent of graduate adviser.
Theory and practice in assessment of special abilities, personality and behavior disorders.

657. Behavior Therapy Laboratory (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 451 or 653, 487 or 711, and consent of graduate adviser.
Supervised practice in the application of behavior therapy (individual treatment) and behavior modification (group method).

675. Principles of Test Construction (3)
Prerequisites: Psychology 405 and consent of graduate adviser.
Principles and methods of planning and carrying out systematic investigations to answer questions concerning human behavior with stress on the interdependence of experimental design and statistical evaluation of results. Practice in formulation of testable hypotheses, techniques of equating groups, solution of sampling problems, and interpretation of results.

706. Seminar in the History of Psychology (3)
Prerequisites: Psychology 410 and consent of graduate adviser.
The history of modern psychology. Not open to students with credit or concurrent registration in Psychology 480.

708. Seminar (3)
Prerequisite: Consent of graduate adviser.
An intensive study in advanced psychology. Topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
710. (224.) Advanced Experimental Design (3)
One lecture and six hours of laboratory.
Prerequisite: Psychology 670 and consent of graduate adviser.
Methods, techniques, and apparatus applicable to questions of various types. Special attention is given to sources of error, limitations on interpretations, and psychophysical feeling about the usefulness of the type of problems studied. Students will design and carry out experiments in preparation for original independent investigations.

711. (275.) Advanced Principles of Learning (3)
Prerequisite: Consent of graduate adviser.
The empirical data, basic principles and theoretical positions of major learning theorists. Not open to students with credit or concurrent registration in Psychology 487.

718. Research in Operant Behavior (3)
Prerequisite: Psychology 316 or 416 or 487 or 711 and consent of graduate adviser.
Selected research topics in the experimental analysis of behavior. Maximum credit six units.

745. (221.) Seminar in Problems in Social Psychology (3)
Prerequisite: Psychology 340 or 412, and consent of graduate adviser.
Factors influencing the formation of attitudes, opinions, and stereotypes: the establishment of roles during socialization of the individual; social crises, change, and resistance to change; the causes and alleviation of interpersonal conflict.

746. (236.) Seminar in Political Psychology (3)
(Same course as Political Science 639.)
Prerequisite: Psychology 340 or 410, and consent of graduate adviser.
Psychological factors of the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus, and participation.

757. (201.) Selected Topics in Clinical Psychology (3)
Prerequisite: Psychology 451 or 653 and consent of graduate adviser.
Advanced study of such clinical topics as community mental health, forensic psychology, ethics, and autogenic training. Topics will vary on a semester basis.

766. (230.) Seminar in Physiological Correlates of Behavior (3)
Prerequisite: Psychology 260 or six units of biology; and consent of graduate adviser.
An exploration of current research and theory in physiological psychology with emphasis on behavioral correlates and psychophysiology.

761. (231.) Seminar in Ethology and Comparative Psychology (3)
(Same course as Biology 610.)
Prerequisite: Psychology 414 or 417 or Biology 520, or Zoology 570, and consent of graduate adviser.
Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.

764. Psychopharmacology and Behavioral Disorders (3)
Prerequisite: Psychology 260 and consent of graduate adviser.
Drugs as cause and cure of behavioral problems. A review of drugs commonly used to change behavior in primary schools, psychiatric centers, in-home programs and mental hospitals.

770. (270.) Statistical Theory (3)
Prerequisite: Psychology 270, 405 and consent of graduate adviser.
Study of quantitative methods in psychology with emphasis on normal inference and nonparametric statistics. Not open to students with credit or concurrent enrollment in Psychology 470.

771. Correlational Analysis (3)
Prerequisite: Psychology 270 and consent of graduate adviser.
Study of correlational methods in psychology with emphasis on multiple regression and factor analysis; experience in use of computer techniques in multivariate correlational analysis. Not open to students with credit or concurrent registration in Psychology 471.
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

Professors: Bigger, Gilbreath, Kitchen (Chairman)

Associate Professors: Clapp, Gazell, Gitchoff, Hamilton

Assistant Professors: Boosuorn, Thompson, Walshok

Lecturers: Corso, Frankum

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.)

Public Administration Minor

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 64 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, 497 or 498; and additional upper division courses selected with approval of the departmental adviser.

Within this program, students may elect to specialize in urban management. Interested students should seek guidance from the director.

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 64 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, 497 or 498; and additional upper division courses selected with approval of the departmental adviser.

Within this program, students may elect to specialize in urban management. Interested students should seek guidance from the director.

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. (1) Criminal justice. Most relevant are courses numbered Criminal Justice Administration 301, 310, 320, 321, 330, 340, 341, 460, 462, 470, 530, 531, 540 and 580.
2. (2) Public administration. Most relevant are courses numbered Public Administration 301, 305, 310, 312, 330, 340, 341, 460, 462, 470, 530, 531, 540 and 580.
3. (3) Urban studies. Most relevant are courses numbered Public Administration 320, 510, 512 and 520.
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. (447.) Administration and Public Policy Development (3) I, II
Process of formulating public policy with emphasis on the role of public agencies.
462. (143.) Selected Topics in Public Affairs (3)
Selected topics in the administration of public policy and problems of public administrative
organization.
470. (146.) 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (147.) Investigation and Report (3) I, II
Analysis of special topics. Admission by permission of instructor.
498. (148.) Internship in Public Administration (2-6) I, II
Prerequisite: Consent of instructor.
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. (149.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisites: Twelve upper division units in public administration and consent of
instructor.
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.
796. (CP66) Internship in Public Administration (1-6)
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. Admission by consent of instructor.

797. (CP96) Research in Public Administration (3) Cr/NC
Prerequisite: Consent of Director, Public Administration and Urban Studies. Research in one of the areas of public administration.

798. (CP98) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units.
Prerequisite: Consent of staff, to be arranged with the Director and instructor.

799A. (CP99) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

City Planning Courses

GRADUATE COURSES

610. (CP66A) Seminar in Urban Planning (3)
Prerequisite: Public Administration 320. Introductory seminar to the Master of City Planning Program, focusing on the planner's perspective of urban problems and goal formation.

620. (CP66B) Seminar in Urban Planning Methodologies (3)
Prerequisite: City Planning 610. Procedures and analytical techniques in urban planning.

630. (CP66C) Seminar in Urban Planning Implementation (3)
Prerequisite: City Planning 620. Analysis of the content and function of zoning, subdivision regulation, codes, capital budgeting, urban renewal, model cities, and other implementation methods and programs.

640. (CP66D) Seminar in Urban Planning Theory (3)
Prerequisite: City Planning 630. Alternative theories of planning and organization of the planning function. Emphasis on conceptual foundations, relationship to governmental structure, decision making, and ideological and ethical orientations.

650. (CP66E) Seminar in Urban Theory (3)
Prerequisite: Public Administration 320. Study of the various empirically and normatively based theories of the city and urbanization process, with emphasis on communication and transaction and institutional approaches.

660. (CP66F) Seminar in Planning Administration (3)
The administration of the planning function in urban government. Relationships between the planner and public and private agencies, governmental departments and elected officials. Case studies and problems.

670. (CP66G) History of Urban Planning (3)
History of urban development and of the field of urban planning.

680. (CP66H) Readings in Urban Planning (3)
Selected topics in urban planning. Maximum credit six units applicable on a master's degree.

690. (CP66I) Research in Urban Planning (3) Cr/NC
Prerequisite: Consent of Director of City Planning Program. Research in one of the areas of urban planning. Maximum credit six units applicable on a master's degree.
Recreation

In the College of Professional Studies

Faculty
Professors: Butler, Hanson
Associate Professor: Peterson (Chairman)
Assistant Professors: Duncan, Hutchinson, Namba
Lecturer: Soulek

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 64 of this catalog.

The major in recreation administration may be planned with an emphasis in one of the following 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. Music 102; Physical Education 132A, 133A, 133B; Psychology 101; Sociology 101; Recreation 101, 104, 107, 110, 284. (27 units.)

Major. A minimum of 37 upper division units to include Recreation 340, 465 and 484 or 498; Health Science and Safety 330; Industrial Arts 301; Journalism 480; Psychology 330, 350, 452. Nine units selected from Drama 310, 442; Physical Education 322, 345D, 345F and 345G; Psychology 340, 452; Sociology 536; Elementary Education 596, Special Education 567; Health Science and Safety 510, 561, 573, 574.

Recreation Minor

The minor in recreation consists of a minimum of 19 upper division units to include Recreation 350, 351, 465 and 484 or 498; Industrial Arts 301; Journalism 480; Recreation 350, 351, 465, 498; Psychology 330, 350, 452. Nine units selected from Drama 310, 442; Physical Education 322, 345D; Psychology 330, Public Administration 330 and Recreation 350.

Courses in the minor may not be counted toward the major or general education.

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.

110. (70) Recreation Leadership (3 I, II)

Two lectures and three hours of laboratory. Plan and conduct programs in social recreation, recreational dramas, song leading, handicrafts and low-organized games. Principles of group leadership.

111. (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.

284. (04) Supervised Field Work (3 I, II Cr/NC)

Prerequisites: Credit or concurrent enrollment in Recreation 107 and 275 hours experience in recreation leadership.

Observation and participation in community recreation leadership. Practical, 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 (2-4)

Refer to the catalog statement on Experimental Topics on page 115. 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 |, 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.

Organization of competition, community sports programs, administration of intramural athletics, and techniques of officiating.

356. (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 medical recreators.

351. (155) Recreation for Special Groups (3 I, II)

Developing community recreation programs for special groups, such as aging, corrections, mentally ill, physically handicapped, mentally retarded and/or others. Field observations may be required.

448. (148) Aquatic Administration (3)

Management of swimming pools, beaches, lakes and marinas; safety factors; legal requirements; health standards; facilities and programming.
424 / Recreation

449. (185) Camp Administration (3)
Prerequisite: Recreation 110.
Operation of resident, day and travel camps. Staff management, health and safety, finances, food services, maintenance, planning and publicity.

465. (185) Administrative Supervision of Recreation (3) I, II
Prerequisite: Recreation 101.
Planning, implementing, financing, staffing, supervising and evaluating organized systems of recreational services. Use of social and human resources.

475. (175) Management of Recreation Areas and Facilities (3) I, II
Prerequisite: Credit or concurrent registration in Recreation 465.
Role of the recreation administrator in the planning, acquisition, development, financing, staffing and maintaining of recreational lands, waters, and structures. Use of natural and man-made resources in the environment.

484. (184) Directed Leadership (3) I, II, S Cr/NC
One lecture and eight hours of supervised activity.
Prerequisite: Recreation 284.
Supervised leadership experience in public and private recreation agencies. Maximum credit six units.

485. (185) Non-Urban Recreation Resources (3) I, II
Nature and scope of recreation in nonurban areas. Public demand for recreation and its impact on natural resources. Management, planning, research and operation of regional and national park and recreation areas.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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) Internship in Recreation Administration (6-12) I, II, S
Minimum of 20-40 laboratory hours per week.
Prerequisite: Fifteen units in recreation courses including Recreation 465.
Students will be assigned, at various governmental and private agencies conducting recreation programs. Variety of experiences in supervision and administration. An intensive experience jointly supervised by college and agency personnel.

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

GRADUATE COURSES

604. (284) Problems in Recreation (3) Alternate years
(Same course as Physical Education 604)
A survey of current problems facing the recreation profession, a review of literature, discussion of trends and evaluation of school situations together with the analysis and evaluation of actual problems. Written reports are required.

705. (263) Park Management (3) Alternate Years
Prerequisite: Recreation 465.

760. (260) Recreation Administration and Supervision (3) Alternate years
Prerequisites: Recreation 465 and 484.
Methods, techniques and evaluation systems used by chief administrators, department heads and supervisors in both public and private agencies.

761. (261) Seminar in Specialized Facilities (3)
Prerequisite: Recreation 475.
Management methods in planning, developing and operating specialized recreation facilities such as golf courses, zoos and aquaria, botanical gardens and arboretas, beaches and marinas, centers for the handicapped, sports stadia, and others. May be repeated once in a different area of specialization.

Religious Studies

In the College of Arts and Letters

Faculty
Professors: Anderson, Friedman, Jordan (Chairman)
Assistant Professor: Khali
Lecturer: Coughlin

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

Religious Studies Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 64 of this catalog.
A minor is not required with this major.

Preparation for the major. Religious Studies 100, 200; Philosophy 101, 102. (12 units)
Major. A minimum of 24 upper division units in religious studies to include either Religious Studies 201 or 305, at least six units from courses listed in Group I below, at least six units from Group II, and at least three units from Group III, and Religious Studies 498. Six of the units from Group I, at least three units from Group II, and at least three units from Group III below.

Group III: Religious Studies 350, 351, 363, 365; Anthropology 524; Philosophy 535; Sociology 538.

Religious Studies Minor

The minor in religious studies consists of 15 to 22 units to include at least three lower division units in religious studies, at least three units from Group I below, at least three units from Group II, and at least three units from Group III.


Courses in the minor may not be counted toward the major or general education.

LOWER DIVISION COURSES

100. (20) World Religions (3) I, II
Major figures, attitudes and teachings of world religions.

200. (50) Problems of Religion (3) I, II
Problems in the study of religions, based on the study of scripture selected from Eastern and Western religions.

299. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (165) Honors Course (1-3) I, II
Refer to Honors Program.

301. (100) Hebrew Scriptures (3) I, II
Prerequisite: Three units of religious studies.
The problems of composition and historical significance in the context of religious meanings of the Pentateuch, the Prophets and the Writings.

425
305. (100B.) The New Testament (3) I, II
Prerequisite: Three units of religious studies.
The problems of composition and historical significance in the context of religious meanings.

310. (110.) Greek and Latin Fathers (3)
Prerequisite: Six units of religious studies.
Readings in patristic thought from Ignatius of Antioch through Augustine.

312. (114.) The Eastern Orthodox Tradition (3)
Prerequisite: Religious Studies 310.
Major doctrines, practices and developments in the Eastern Church from the Patristic period to the present.

314. (111A.) Medieval Western Christianity (3)
Prerequisite: Religious Studies 310.
Readings in source materials illustrative of the doctrinal and institutional development of the Western Church during the medieval period to early stages of the Reformation.

316. (111B.) The Reformation and Beginnings of Modern Christianity (3)
Prerequisite: Religious Studies 314.
Readings in source materials illustrative of the doctrinal and institutional development of the Western Church during the Reformation and the Enlightenment.

318. (192.) Recent Christianity (3)
Prerequisite: Religious Studies 316. Religious Studies 312 is recommended.
Themes in the development of Christian institutions and doctrines in the 19th and 20th centuries.

320. (115.) Judaism (3)
Prerequisite: Three units of religious studies.
Major trends and teachings from the Talmudic period to the present.

340. (116.) Islam (3)
Prerequisite: Three units of religious studies.
Major doctrines, practices and developments from the time of Mohammed to the present.

350. (132.) Dynamics of Religious Experience (3)
Prerequisite: Six units in humanities or social sciences.
Focus on data and major approaches in the study of individuals' religious behavior and experiences. Special attention to relevant problems in world religions and philosophical views of man.

351. (136.) Theory and Practice of Worship (3)
The symbolic structure of devotional performance.

353A-353B. The Human Dimension of Religion and Psychology (3-3)
Prerequisites: Religious Studies 100, 200 or 350. 353A is not prerequisite to 353B.
The meeting of psychology and religion. Semester I: Selected pragmatic and process religious thinkers, psychoanalytic schools of thought, and behavioral psychologists, such as Freud, Dewey, Skinner, Jung, Perls and Whitehead. Semester II: Selected religious thinkers, movements, personality theorists, and humanistic psychologists such as Buber, Laing, Maslow, Iqbal, Yoga, Zen.

360. (113A.) Religion, Music and the Plastic Arts (3)
The relations between religion, music, painting, sculpture and other visual arts in major cultural traditions.

361. (113B.) Religion, Literature and Drama (3)
The relations between religion, literature and drama in major cultural traditions.

363. (135.) Religion and Science (3)
Prerequisite: Religious Studies 100 or 200.
A critical exploration of the relation of science to religious conceptions of human nature and destiny.

365. (136.) Religion and Ethical Problems (3)
Prerequisite: Religious Studies 301 or 305.
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.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (199.) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Twelve upper division units in religious studies.

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 320.
Selected topics in religion in America, such as Deism, transcendentalism, 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.
Life, works and significance of one major figure in a religious tradition. May be repeated with new content. Maximum credit six units.

581. (181.) 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.
Russian
In the College of Arts and Letters

Faculty
Professors: Dukas, Fetzer, Kozlik (Chairman)
Lecturers: Josselson

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 64 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).
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 or general education.

Russian Major
For the Single Subject Teaching Credential in Foreign Languages
All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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 Russian major for the single subject teaching credential in foreign languages are being revised. For further information consult the department.

Pre-requisite 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.

UPPER DIVISION COURSES

Pre-requisite: Consent of instructor.

101. (J) Elementary (4) I, II
Four lectures and one hour of laboratory.
Pronunciation, oral practice, reading in Russian literature, minimum essentials of grammar.
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 four years of high school Russian.

105. Elementary (8) I
Eight lectures and two hours of laboratory.
The elements of Russian; oral emphasis. A one-year course concentrated in one semester.

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 203.
Continuation of Russian 203.

208. (8) Scientific Reading (2)
Prerequisite: Russian 102 or 105 or three years of high school Russian.
Practical work in Russian of scientific 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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. (166) Honors Course (1-3) I, II
Refer to Honors Program.

301A-301B. (101A-101B) Advanced Grammar and Composition (3-3)
Prerequisites: Russian 204 and 211.
Advanced grammar and stylistics; intensive writing practice; reports based on outside reading.

311A-311B. (102A-102B) Survey of Russian Literature (3-3)
Russian literature from its beginnings, with emphasis on the nineteenth and twentieth centuries.

490A-490B. (144A-144B) Masterpieces of Russian Literature (3-3) I, II
Selected Russian literary work in English translation. Semester I: The classic Russian authors of the eighteenth century—Pushkin, Gogol, Dostoevsky, Tolstoy and Chekhov. Semester II: Literature of the Romantic and Soviet periods.

495. (185) Topics in Russian Literature (3)
Topics in Russian literature to be selected by instructor. May emphasize a theme, period, movement or genre. Intended primarily for the nonspecialist. Does not fulfill language requirement. May be repeated with new content. Maximum credit six units.

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

545. (102.) Old Russian Literature (3)
Masterpieces of Russian literature before 1700.

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. (120.) Russian Syntax and Stylistics (3)
Prerequisite: Russian 301A-301B.
The structure of contemporary Russian.

581. (121.) Russian Phonetics and Morphology (3)
Prerequisite: Russian 204 and 211.
The sounds and forms of contemporary Russian.

GRADUATE COURSES

600. (290.) Research and Criticism (3)
Prerequisite: Twelve upper division units in Russian.
Purposes and methods of research in Slavic linguistics and in the literatures; theories and
practice of literary criticism.

610. (201.) History of the Russian Language (3)
Prerequisite: Twelve upper division units in Russian.
The historical development of the Russian language.

650A-650B. (204A-204B.) Old Church Slavic (3-3)
Prerequisite: Twelve upper division units in Russian.
Structure of Old Church Slavic with readings and analysis of medieval Slavic texts.

680. (203.) Seminar in Slavic Linguistics (3)
Prerequisite: Twelve upper division units in Russian including Russian 570.
Selected topics in historical and comparative Slavic linguistics.

700A-700B. (204A-204B.) The Soviet Novel and Short Story (3-3)
Prerequisite: Twelve upper division units in Russian.
Intensive study of major writers of Soviet prose fiction.

710. (205.) Russian Poetry from Pushkin to the Present (3)
Prerequisite: Twelve upper division units in Russian.
The major Russian poets of the nineteenth and twentieth centuries.

750. (251.) Nineteenth Century Russian Literature (3)
Prerequisite: Twelve upper division units in Russian.
Major developments in the literature of the time.

760. (255.) Seminar: A Major Author or Movement (3)
Prerequisite: Russian 600.
A major author or movement. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units.
Prerequisites: Eighteen upper division units in Russian and consent of staff; to be arranged
with department chairman and instructor.

799A. (299.) Thesis (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
Social Science
In the College of Arts and Letters

Faculty
Social Science is administered through the Social Science Committee, composed of faculty members from the Departments of Anthropology, Economics, Geography, History, Political Science and Sociology. Mary Jane Moore, Department of Anthropology, is coordinator.

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 64 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 three 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, 110A-110B, 115A-115B; (5) Political Science 110, 120, 130, 140. Sociology 101, 110.

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. Two college semesters of one foreign language, preferably Spanish, are recommended for those planning to work in this part of the United States.

Majors. 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 more units in one of these or a fourth field. Six units may be selected from Mexican-American Studies 302, 303, 304, 305, 306, 320, 376, 390A-390B, 480, 483. Courses covering four fields must be completed. If the requirement for the fourth field is not satisfied by the three upper division units described above, then it may be satisfied by three units of lower division credit.

Emphasis in Africa and the Middle East
The adviser for this emphasis is Dr. David H. Johns, Department of Political Science.

Preparation for the major: History 105A-105B, Humanities 157 and/or 158, and three to six units selected from Anthropology 100, 101; Comparative Literature 220A, 220B, 280A; 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, selected with the consent of the adviser, to include at least 15 units in anthropology, economics, geography, history, political science or religious studies. Competence will be demonstrated in 15 units in each of six fields. 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.

Emphasis in Environment

The adviser for this emphasis is Dr. David H. Johns, Department of Political Science.

Preparation for the major: History 105A-105B, Humanities 157 and/or 158, and three to six units selected from Anthropology 100, 101; Comparative Literature 220A, 220B, 280A; 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, selected with the consent of the adviser, to include at least 15 units in anthropology, economics, geography, history, political science or religious studies. Competence will be demonstrated in 15 units in each of six fields. 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.
GRADUATE COURSES

601. Interdisciplinary Methods (3)
Introduction to graduate research methods and presentation of findings in the social sciences.

680. Seminar in the Social Sciences (3)
Intensive study and research on a topic in the social sciences.

Social Welfare
In the School of Social Work

Faculty
Professors: Griffin, Kelley (Acting Dean), Pantoja, Pilcher, A., Pilcher, D., Tebor
Associate Professors: Baily, Guidry, Pepper, Perry, Rubin
Assistant Professors: Cohen, Watson
Lecturers: Brewer, Dominguez, Evans, Fontana, Shelton, Weissman

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.

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 64 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 for immediate employment in those social work positions which do not require professional social work education on a graduate level.
Preparation for the major. Anthropology 101; six units selected from economics; Political Science 110 and 120; Sociology 101; Psychology 101; Social Welfare 110 and 120. (27 units.)
Recommended: Biology 100 and 100L
Recommended: Sociology 422, Psychology 330, Biology 462 and 462L and courses from anthropology, literature, history, philosophy, political science, economics, psychology, and sociology. Students should consult with their adviser in social welfare for selection and arrangement of courses.

Social Welfare Minor
The minor in social welfare consists of 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 or general education.

LOWER DIVISION COURSES

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 110.
126. (60.) 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. (60.) Contemporary Courtship and Marriage (3) I, II
Developing understanding and ability to evaluate 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.
436 / Social Welfare

299. (99.) Experimental Topics (2-4) Cr/NC
Refer to the catalog statement on Experimental Topics on page 115. 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.
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 110; 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. (180B.) 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.

381. (181.) Field Observation (2) I, II
Prerequisites: Social Welfare 110 or Sociology 110 or Mexican-American Studies 110; Social Welfare 120.
Field observation assignments in the social welfare area.

482A-482B. (182A-182B.) Social Work Practice (3-3) I, II
Prerequisites: Social Welfare 360B, 370B, 381 and a 3.00 Grade Point Average in all junior level social welfare courses required in the major; concurrent registration in Social Welfare 483A and 489A for 482A; concurrent registration in Social Welfare 483B and 489B for 482B.
The professional base, principles and interventional techniques of social work practice with individuals, families, and communities.

483A-483B. (183A-183B.) Integrating Seminar (2-2) I, II
Prerequisites: Social Welfare 360B and 370B and a 3.00 Grade Point Average in all junior level social welfare courses required in the major; concurrent registration in Social Welfare 482A and 489A for 483A; concurrent registration in Social Welfare 482B and 489B for 483B.
The integration of social work theory, principles and practice techniques.

489A-489B. (189A-189B.) Field Experience in Social Welfare (4-6, 4-6) I, II
Prerequisites: Social Welfare 360B and 370B and a 3.00 Grade Point Average in all junior level social welfare courses required in the major; concurrent registration in Social Welfare 482A and 489A for 489A; concurrent registration in Social Welfare 482B and 489B for 489B.
A minimum of ten hours per week of laboratory field assignments in selected social welfare activities. Students are encouraged to take up to sixteen hours per week.

490A-490B. (187.) Methods of Social Work Research (2-2) I, II
Prerequisite: Social Welfare 489A.
Definition and purpose of research in social welfare and social work. Formulation of research problems, selecting a design and methodology; techniques of collecting, organizing, interpreting and analyzing data.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.
Social Work

In the School of Social Work

The graduate program of the School of Social Work is accredited by the Commission on Accreditation of the Council on Social Work Education.

Faculty

Emeritus: Witte

Professors: Griffin, Haworth, Horowitz, Ishikawa, Kahn, Kelley (Acting Dean), Kukkonen, Lee, Maxwell, Morgan, Onsell, Pilcher, A., Pilcher, D., Reichert, Stanford, Stumpf, Tebor

Associate Professors: Anderson, Baily, Clary, Guirdy, Herman, Pantoya, Pepper, Perry, Rubin, Sardinas, Valle

Assistant Professors: Ajemian, Cohen, Raymer, Siman, Watson, Weissman, A.,


Appointments Under Grants from Outside Funds

Offered by the School of Social Work

Master of Social Work (see Graduate Bulletin).

Master of Science in Social Work (see Graduate Bulletin).

GRADUATE COURSES

Prerequisite for enrollment in all graduate courses: admission to the School of Social Work.

600A. (20.) Social Welfare Policy and Services I (3)

Social welfare as a societal institution; philosophical, historical and comparative analysis of the welfare functions, issues and problems, with special focus on personal and social deprivation.

600B. (20.) Social Welfare Policy and Services II (3)

Prerequisite: Social Work 600A.

Conceptional analysis of social welfare programs related to income maintenance and other social service areas, including social insurance, child welfare and community development.

620A. (220.) Human Behavior and Social Environment I (3)

Theoretical perspectives on man in the changing world. View based on biological, psychological, interpersonal and social structure assumptions over the life-cycle, for application to social work practice.

620B. (221.) Human Behavior and Social Environment II (3)

Prerequisite: Social Work 620A.

Examination of deviant behavior from relative frameworks of a medical model and a career process model. Selected social problem areas are used as illustrations.

630A. (230.) Social Work Practice I (3)

Prerequisite: Concurrent registration in Social Work 650A.

Principles of social work practice with individuals, families, groups and communities.

Attention is given to social work objectives, principles and skills.

630B. (231.) Social Work Practice II (3)

Prerequisites: Social Work 630A and concurrent registration in Social Work 650B.

Principles of social work practice with individuals, families, groups and communities with emphasis on refinement of skills of social study and social problem analysis. Attention to interpersonal and small group processes in determination of goals and change.

650A. (250.) Field Instruction I (4)

Prerequisite: Concurrent registration in Social Work 630A.

Field instruction in a public or voluntary social work setting. Experiences are drawn upon in relation to classroom learning to emphasize application of social work objectives, principles and skills to services to individuals, families, groups and communities.

650B. (251.) Field Instruction II (4)

Prerequisites: Social Work 650A completed in the preceding semester and concurrent registration in Social Work 630B.

Continuation of field instruction initiated in Social Work 650A. Opportunities are provided for the application of social study and social problem analysis to experience with interpersonal and small group processes.

Social Work Research Methods and Analysis (2-2)

Definition and purpose of research in social work. Techniques and methods used in collecting, organizing and interpreting social welfare and related data; steps involved in planning a research project and selecting a research design.

700A. (202.) Social Welfare Policy and Services III (3)

Prerequisite: Social Work 600B.

Problems and issues in emerging social welfare programs, including analysis of the structure of social services and of social work as a profession.

700B. (203.) Social Welfare Policy and Services IV (3)

Prerequisite: Social Work 600B.

Analysis of existing or projected social welfare programs or service.

710. (204.) Seminar on Selected Topics (3)

Selected topics such as alcoholism, drug abuse, human sexuality, legislative processes and violence against children and implications to social work. Topics announced in class schedule.

734A. (234.) Social Work Practice With Organizations and Communities (3)

Examinations in community problems, power and strategies in social planning and development under auspices of interorganizational systems, bureaucracies and informal associations. Applications of concepts and principles of planning social change in situational analysis, community organization, program development and evaluation.

734B. (235.) Social Planning in Social Work (3)

Examinations in social planning and concurrent requirement in field.

734D. (236.) Management Knowledge and Technique (3-3)

Prerequisite: Social Work 600B.

Examinations and processes of decision making in development of community and human services; relationships of social, physical and economic planning in old cities and new towns; designing human care systems; and supervision, consultation and administration in social planning.

740A-740B. (240.) Social Work Practice With Organizations and Communities (3)

Examinations in community problems, power and strategies in social planning and development under auspices of interorganizational systems, bureaucracies and informal associations. Applications of concepts and principles of planning social change in situational analysis, community organization, program development and evaluation.

741A-741B. Facilitative and Educational Roles in Social Agencies (3-3)

Prerequisite: Completion of first year courses and concurrent field experience in field.

Examinations in educational roles of practitioners in social agencies emphasizing supervision, consultation, staff development and educational assessment. Theories in adult learning and educational assessment to enhance performance of staff including paraprofessional, volunteers and consumers will be explored.

750A. (252.) Field Instruction III: Individuals, Families and Groups (4-5)

Prerequisites: Social Work 650B and concurrent registration in Social Work 730A.

Field instruction in a social work setting providing a concentration on social work practice aimed at achieving change in or on behalf of individuals, families and groups. Practice under educational direction at an advanced level.
750B. Field Instruction IV: Individuals, Families and Groups (4-5)
Prerequisites: Social Work 750A completed in the preceding semester and concurrent registration in Social Work 730B.
Continuation of Field Instruction III at an advanced level. Emphasis is placed on the use of diverse problem-solving strategies and resources in social work.

754A. Field Instruction V: Organizations and Communities (4-5)
Prerequisites: Social Work 650B and concurrent registration in Social Work 734A.
Field instruction in a social work setting providing a concentration on social work practice aimed at achieving changes in social policies, organizations and communities. Practice under educational direction at an advanced level.

754B. Field Instruction VI: Organizations and Communities (4-5)
Prerequisites: Social Work 754A completed in the preceding semester and concurrent registration in Social Work 734B.
Continuation of Field Instruction V at an advanced level. Emphasis is placed on the use of diverse social work strategies and resources in social planning or community development.

755. (270.) Seminar: Social Work Analysis (1-4)
Discussion of student experience in field instruction and its broader implications. Maximum credit four units applicable on a master's degree.

756A. Social Work Practice VII (4)
Prerequisite: Concurrent registration in Social Work 730A or 734A.
Laboratory field instruction enabling the student to integrate social work theory, knowledge and concepts in developing interventive skills with individuals, families, groups, organizations and communities. Enrollment limited to students admitted to the M.S.W. program.

756B. Social Work Practice VIII (4)
Prerequisites: Social Work 756A and concurrent registration in Social Work 730B or 734B.
Continuation of Social Work Practice VII with emphasis on refinements of skills in intervention with individuals, families, groups, organizations and communities.

758. Social Work Practice IX (6-8) S
Emphasis on the further development of skills with individuals, families, groups, organizations and communities. Enrollment limited to students admitted to the M.S.W. program.

760. Social Work and Racial-Ethnic Groups (3)
Prerequisite: Completion of first year courses.
Nature of institutional racism and its effect on social provision and social policy. Examines overt and covert forms of racism in but not limited to areas such as housing, schools, corrections, organized labor, job training for the poor, and social statistical reporting for implications to social work practice.

761. Seminar on Racial-Ethnic Groups (3)
Prerequisite: Completion of first year courses.
Exploration of social survival techniques of ethnic minority groups, their similarities and differences and implications to development of social service delivery systems and practice.

765. Social Work and Aging (3)
Prerequisites: Completion of first year courses and concurrent practicum in aging.
Exploration of social work principles and techniques related to the impact of the aged population on our society. Focus on becoming sensitive to the implied and actual changes taking place in service delivery systems, living arrangements, etc., which affect social work practice.

766. Seminar on Aging (3)
Prerequisite: Completion of first year courses.
In-depth survey and analysis of selected areas in aging which depict the contemporary trends in the social aspects of aging. Special attention given to developing social policy and the relationship between social work practice modifications in the field of aging.

770. Social Work and Health (3)
Prerequisites: Completion of first year courses and concurrent practicum in health.
Examination of changing health definitions and health service delivery systems; their effects on consumers and providers of social services and implications for social work practice.
Sociology

In the College of Arts and Letters

Faculty
Emeritus: Barnhart, Klapp
Professors: Daniels, DeLora, J.R., El-Assal, Gillette (Chairman), Johnson, Mine, Mouradis, Somerville, Sorensen, Wendling, Winslow
Associate Professors: Buck, Chandler, Cottrell, DeLora, J.S., Emerick, Kennedy, Scheck, Schulze, Werner
Assistant Professors: Halpern, Hohn, Ima, Kirkpatrick, Kolodji, Preston, Stephenson
Lecturers: Bloomberg, Hartman, Kirby, Labovitz, Thompson, Weeks

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 64 of this catalog.

Preparation for the major: Sociology 101, 110 and 160. (9 units.)

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 422).

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 or general education.

LOWER DIVISION COURSES

101. (10.) 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, controls, 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. An evaluation 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)
Prerequisite: 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.

UPPER DIVISION COURSES

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

350. (100.) History of Social Thought (3)
Prerequisite: Sociology 101.
Survey of the major theoretical frameworks, problems and findings of sociology and social psychology concerning group behavior and group membership, the socialization of the individual, and processes of social interaction. (Not open to students with credit in Psychology 340.)

400. (104.) Social Change (3)
Prerequisite: Sociology 101.
Social change at the interpersonal, institutional and societal levels in a comparative perspective. Detailed analysis of modernization.

405. Sociological Laboratory II (1)
Three hours of laboratory.
Prerequisite: Must be taken in conjunction with a three-unit upper division course.
The application of experimental, quantitative and qualitative methods to sociological problems and/or the use of experimental, social simulation teaching techniques.

420. (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 function in contemporary society.

440. (140.) Social-Psychology: Sociological Approaches (3)
Prerequisite: Sociology 101.
Survey of the major theoretical frameworks, problems and findings of sociology and social psychology concerning group behavior and group membership, the socialization of the individual, and processes of social interaction. (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; 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.

496. Experimental Topics (2-4)
Prerequisite: Consent of the instructor.
Refer to the catalog statement on experimental topics on page 115. 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)
Prerequisite: Consent of instructor.

506. Modernization of Traditional Societies (3)
Prerequisite: Sociology 101.
Examines theories of social change relative to industrialization and urbanization of preindustrial societies. Comparative study of institutional and social-psychological consequences of industrialization, utilizing historical and contemporary study of macrosocial change.

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, extramarital 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 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.

519. Topics in Comparative Societies (3)
Prerequisite: Sociology 101.
Analysis of contemporary social structure, the process of modernization and current social problems in selected areas of the world. May be repeated with new content. 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 organizations, occupational socialization, problems of identity and role conflict.

523. (122.) 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 Science 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. Changing concepts of femininity and masculinity. Images of men and women in literature, in the mass media, and in laws and judicial decisions.

534. Sexuality in Modern Society (3)
Prerequisite: Sociology 101.
Analysis of landmark sex research and pornography in the United States and in selected other societies. Changing norms in premarital, marital and extramarital attitudes and behaviors. Implications for the individual, family and society.

535. (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 the 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 forms in intentional communities of the 19th century compared with contemporary communal experiments. Ethnic and class differences in family organization. (Not open to students with credit in Family Studies and Consumer Sciences 536.)

537. (117.) 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 546.
The role of religion in society as cult and institution, including primitive religion, modern sects and churches, ritual, secularization and religious movements.
539. (139.) Sociology of Education (3)
Pre-requisite: 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)
Pre-requisite: 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.

545. (145.) Sociology of Mass Communication (3)
Pre-requisite: Sociology 101, recommended: Sociology 440 and 546.
Sociological analysis of the processes and effects of mass communications in different social systems, their functions and dysfunctions and their relationships to other social institutions.

546. (146.) Collective Behavior (3)
Pre-requisite: Sociology 440.
The study of the processes of social behavior in masses and groups, including crowd behavior, fads, fashions, crazes, panics, rumors; sects and cults; heroes and scapegoats; social movements; effects of mass communication.

547. (147.) Sociology of Social Movements (3)
Pre-requisite: Sociology 101. Recommended: Sociology 422 and 545.
The study of revolutionary and reform movements in relationship to the larger society. Conditions leading to development of social movements, emergence of leadership, ideologies, strategies, recruitment of members and social consequences, case studies in depth.

548. (148.) Small Groups (3)
Pre-requisite: 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)
Pre-requisite: 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.

557. (157.) Urban Sociology (3)
Pre-requisite: 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)
Pre-requisite: 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
Pre-requisite: Fifteen units in sociology and consent of instructor.
Analysis of special topics in sociology. Maximum credit six units.

GRADUATE COURSES

601. Advanced Social Theory: Core Course (3)
Pre-requisites: Unclassified graduate standing, Sociology 401.
Concepts, theories and findings concerning structure and change in society, institutions, formal organizations, the community and small groups. Special attention given to key concepts of culture, stratification, division of labor, power, bureaucracy, role relationships and interaction.

603. Advanced Social Psychology (Sociological Approaches): Core Course (3)
Pre-requisite: Unclassified graduate standing, Sociology 440.
Investigation and analysis of original works in classical social psychological theory focusing on implications for research on topics such as socialization, motivation, perception, role, self, interaction and symbolic processes.

604. Social Organization: Core Course (3)
Pre-requisites: Unclassified graduate standing, Sociology 422.
Concepts, theories and findings concerning structure and change in society, institutions, formal organizations, the community and small groups. Special attention given to key concepts of culture, stratification, division of labor, power, bureaucracy, role relationships and interaction.

605. Seminar in Social Theory (3)
Pre-requisites: Sociology 401 and 464.
Classics of sociology, American social theory, theory construction, application of theory to research, theoretical models, sociology of knowledge, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

607. (205.) Directed Readings in Social Theory (3)
Pre-requisites: Sociology 401 and 464.
Selected readings providing comprehensive coverage of the field of social theory.

610. (210.) Seminar in Social Organization (3)
Pre-requisites: Sociology 442 and 464.
Selected readings providing comprehensive coverage of the field of social organization.

615. (215.) Directed Readings in Social Disorganization (3)
Pre-requisites: Sociology 464 and 510.
Selected readings providing comprehensive coverage of the field of social disorganization.

700. Seminar in Social Psychology: Sociological Approaches (3)
Pre-requisites: Sociology 464 and 510.
Selected readings providing comprehensive coverage of the field of social psychology.

705. (205.) Directed Readings in Social Psychology: Sociological Approaches (3)
Pre-requisites: Sociology 464 and 510.
Selected readings providing comprehensive coverage of the field of social psychology.

710. (210.) Seminar in Social Disorganization (3)
Pre-requisites: Sociology 464 and 510.
Selected readings providing comprehensive coverage of the field of social disorganization.

715. (215.) Directed Readings in Social Disorganization (3)
Pre-requisites: Sociology 464 and 510.
Selected readings providing comprehensive coverage of the field of social disorganization.

725. (225.) Directed Readings in Social Organization (3)
Pre-requisites: Sociology 422 and 464.
Selected readings providing comprehensive coverage of the field of social organization.

730. (230.) Seminar in Social Institutions (3)
Pre-requisites: Sociology 422 and 464.
The family and kinship, political organization, economic organization, religion, education, industry, occupations and professions, social stratification, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

735. (235.) Directed Readings in Social Institutions (3)
Pre-requisites: Sociology 422 and 464.
Selected readings providing comprehensive coverage of the field of social institutions.

740. (240.) Seminar in Social Psychology: Sociological Approaches (3)
Pre-requisites: Sociology 440 and 464.
Socialization, role theory, motivation, perception, self, social context of personality, attitude theory, interaction, language and symbolic process, social types, collective behavior, small groups, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

745. (245.) Directed Readings in Social Psychology: Sociological Approaches (3)
Pre-requisites: Sociology 440 and 464.
Selected readings providing comprehensive coverage of the field of social psychology.

750. (250.) Seminar in the Community (3)
Pre-requisites: Sociology 464 and 557.
Ecological structure and process; community institutions and structure; community deterioration, planning and renewal; urbanization; suburban; megapolis; special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.
1. (255.) Directed Readings in the Community (3)
Prerequisites: Sociology 464 and 557.
Selected readings providing comprehensive coverage of the sociological study of human communities.

2. (260.) Seminar in Research Methods (3)
Prerequisites: Sociology 401 and 464.
Analysis of methods used in current sociological research, including evaluation of reported findings. Discussion of research designs appropriate to particular types of projects. Evaluation of research in progress by members of the seminar. May be repeated with new content. Maximum credit six units applicable on a master's degree.

3. (265.) Directed Readings in Research Methods (3)
Prerequisite: Sociology 464.
Selected readings providing comprehensive coverage of sociological research methods.

4. (270.) Seminar in Population and Demography (3)
Prerequisites: Sociology 464 and 550.
Demographic theories, fertility, mortality, migration, construction and application of demographic indices, demographic prediction, world population trends, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

5. (275.) Directed Readings in Population and Demography (3)
Prerequisite: Sociology 464.
Selected readings providing comprehensive coverage of the fields of population and demography.

6. (297.) Research (3) Cr/NC
Prerequisite: Sociology 464.
Independent investigation of special topics.

7. (298.) Special Study (1-3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

8. (299.) Thesis (3) Cr/NC
Prerequisite: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

9. (300.) Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

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**Spanish**

**In the College of Arts and Letters**

**Faculty**

Emeritus: Brown, Sender
Professors: Baker, Case, Head (Chairman), Lemus, Walsh
Associate Professors: Barrera, Christensen, Jimenez-Vera, Santalo, Segade, Talamantes, Webster
Assistant Professors: O'Brien, Windsor, Young
Lecturer: Pickslay

**Offered by the Department of Spanish and Portuguese Languages and Literatures**

**Master of Arts Degree in Spanish**

Major in Spanish with the A.B. degree in liberal arts and sciences.

Teaching major in Spanish for the single subject teaching credential in foreign languages.

Minor in Spanish.

**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 64 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.)

**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 or general education.

**Spanish Major**

**For the Single Subject Teaching Credential in Foreign Languages**

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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.** 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.

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**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, not to exceed four units of repeated foreign language work.

Students entering San Diego State University with five or six years of high school Spanish may enroll in Spanish 204; the department recommends, however, that they take Spanish 223.
LOWER DIVISION COURSES

101. (4) Elementary I, II
Prerequisite: Spanish 101 or two years of high school Spanish.
Continuation of Spanish 101. Not open to students who have completed three years of high school Spanish.

102. (4) Elementary I, II
Prerequisite: Spanish 101 or two years of high school Spanish.
Continuation of Spanish 101. Not open to students who have completed three years of high school Spanish.

203. (3) Intermediate 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. (4) Intermediate 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. (1) 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 spoken language; directed written compositions on social, cultural or literary topics with stress on clarity and thoroughness of thought; all class discussion conducted in Spanish.

223. (22) Introduction to Literature (3)
Prerequisites: Spanish 204 and 211.
Selected readings from Peninsular and Latin American prose. Oral and written reports and class discussions. Course conducted in Spanish.

299. (99) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

301. (101A) Advanced Conversation and Writing (3)
Prerequisite: Spanish 210 and 211, or five years of high school Spanish or near native-level proficiency.
Emphasis on the spoken language with supporting practice in the written language; conversation on assigned social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish. Not open to students with credit for Spanish 310-Y.

301-Y. Advanced Conversation and Writing in Mexico (3)
Prerequisite: Spanish 210 or 210-Y and 211, or five years of high school Spanish or near native-level proficiency.
Emphasis on the spoken language with supporting practice in the written language; conversation on assigned social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish; course arranged in tour fashion in Mexico during winter interim or pre-summer period. Not open to students with credit for Spanish 301.

302. (101B) Advanced Writing and Conversation (3)
Prerequisite: Spanish 301 or near native-level proficiency.
Emphasis on creative writing with supporting practice in conversation; written composition on social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish.

311A-311B. (1024-102B) Survey Course in Spanish Literature (3-3)
Prerequisite: Spanish 204.
Important movements, authors and works in Spanish literature from the Middle Ages to the present.

440. (140) Spanish Civilization (3)
Prerequisites: Spanish 204 and 211 (except at the Imperial Valley Campus).
Spanish culture of the past and present, with emphasis on literature, philosophy and the arts. Not open to students with credit in European Studies 350.

441. (141) Spanish-American Civilization (3)
Prerequisites: Spanish 204 and 211 (except at the Imperial Valley Campus).
Spanish-American cultures, with emphasis on literature, philosophy and the arts. Not open to students with credit in Latin American Studies 341.

442. (142) Mexican Civilization (3)
Prerequisites: Spanish 204 and 211.
The major currents and characteristics of Mexican culture, as expressed through the centuries in literature, philosophy and the arts. Not open to students with credit in Latin American Studies 346.

444. (144) Masterpieces of Spanish Literature (3)
Reading selections from major Spanish authors. Taught in English.

490. (196) Advanced Grammar (3)
Prerequisites: Spanish 301 and 302.
Significant systematic features of modern Spanish grammar with analysis of passages from literature. Recommended for credential applicants.

496. (185) Selected Studies in Spanish (3)
Topics in Spanish or Spanish-American language, literature, culture and linguistics. 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 Spanish available in any given semester.
Prerequisite: Consent of instructor.

504A-504B. (104A-104B) Spanish-American Literature (3-3)
Prerequisites: Spanish 204 and 211.
Reading from representative Spanish-American authors during the colonial, revolutionary and modern periods. Lectures, class reading, collateral reading and reports.

510A-510B. (105A-105B) Modern Spanish Drama (3-3)
Prerequisites: 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) Mexican Literature (3-3)
Prerequisites: Spanish 204 and 211.
Aspects of Mexican culture. Semester I: A rapid survey of Mexican literature from the colonial period to the twentieth century. Semester II: The twentieth century, with emphasis on the contemporary Mexican novel and theater.
520. (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.
The literature of Ecuador, Peru, Bolivia and Chile from the period immediately preceding the Spanish conquest to today.
524. (109.) 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 in the nineteenth century.
532. (111.) 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. (180.) Modern Spanish Poetry (3)
Prerequisites: Spanish 204 and 211.
Spanish poetry of the 19th and 20th centuries.

GRADUATE COURSES

All graduate courses in the Department of Spanish and Portuguese have a prerequisite of 12 upper division units in Spanish, or consent of instructor.

601. (290.) Research and Criticism (3)
Prerequisites: Spanish 204 and 211.
Purposes and methods of research in the fields of the language and literature, including bibliography, literary terms and textual criticism.
610. (201.) History of the Spanish Language (3)
Prerequisite: Credit or concurrent enrollment in Spanish 548 or 549.
The development of the Spanish language in Spain and Spanish America, with particular attention to the phonology, morphology and syntax of medieval Spanish.
Speech Communication
In the College of Professional Studies

Faculty
Emeritus: Ackley
Professors: Adams, Benjamin; Mills, Samovar
Associate Professors: Sanders (Chairman), King
Assistant Professors: Moore, 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/Speech.
Minor in speech communication.

The Speech Communication Department conducts a number of activities such as the Forensics Program and the Readers Theater Program as performance laboratories. These activities are an extension of classroom instruction, and credit may be allowed upon approval by the instructor in charge.

Speech Communication Major
With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 64 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 300, 301, 309, 352, 354, 361, 362, 380, 400, 466, 499, 508, 540, 589; or twelve units selected from Speech Communication 300, 309, 391, 392, 496, 499, 530, 535, 575, 587, or twelve units selected from Speech Communication 300, 309, 361, 392, 400, 508, 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 or general education.

Speech Communication Major
For the Single Subject Teaching Credential in English/Speech
All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on 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 109 (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. (2) Oral Communication (2-3) 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 or 104 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. (11.4) Fundamentals of Interpretation (3) I, II
Literature and principles of its oral presentation by the interpreter.

111B. (11B) Intermediate Interpretation (3)
Preparatory course for oral interpretation with emphasis on hearing 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. (60) 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.

162. (62) Workshop in Speech (2-3)
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 (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

301. (104) 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. (309) Workshop in Speech (1-3)
Study of some problems in speech communication. Maximum credit six units.

350. (150) Rhetorical Theory and Criticism (400 A.D. (3) I, II
An analysis of rhetorical theory and criticism with special attention to Plato, Aristotle, Isocrates, Quintillian, and Cicero. The development of theory and systems of criticism in the application of principles to public address.

[Note: The content beyond lower division courses is not clearly visible in the image.]

Speech Communication Communication 103 (intercollegiate forensic experience, 1·3 units), 391, 392, 508, and 12 to 14 units of electives (Speech Communication 589 is recommended) for the major.

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.


Refer to the catalog statement on Experimental Topics on page 115. 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.

Refer to Honors Program.
352. (151.) Rhetorical Theory and Criticism 400 A.D. to 1900 (3) I, II
Prerequisite: Speech Communication 350.
An analysis of rhetorical theory and criticism with special attention to Longinus, Vives, Ramus, Cicero, Bacon, Campbell, Whately, Blair, and James. The development of theory and systems of criticism culminating in the application of principles to public discourse.

354. (154.) Contemporary Rhetorical Theory and Criticism (3) I, II
Prerequisite: Speech Communication 350.
An analysis of rhetorical theory and criticism in the twentieth century with special attention to Arnold, Bizer, Burke, Hochmuth, and Winans. A unified body of principles for rhetorical theory and criticism will be derived and applied to contemporary discourse.

361. (161.) 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.

362. (162.) Advanced Argumentation (3) I
The approaches to argument and the patterns and problems in argument. Consideration of implications for society. Written and oral reports.

380. (180.) American Public Address (3) I, II
Public discourse from the colonial period to the present.

391. (191.) Group Communication (3) I, II
Prerequisite: Speech Communication 191.
The theoretical processes of small group communication. Emphasis on the role of group formation, interaction, procedures and leadership.

392. (192.A.) Advanced Public Speaking (3) I
Prerequisite: Speech Communication 104.
The preparation and delivery of longer speeches. Study of classic models of public address.

394. (194.) History of Public Address (3) I, II
Prerequisite: Speech Communication 104.
Speakers and speaking from Ancient Greece to the present. Functions of public speaking in the growth and development of ideas, ideals and institutions.

400. (100.) Contemporary Forensics Problems (1-3) I, II
Prerequisite: Speech Communication 160.
Identification of significant arguments in political, economic and social problems confronting Twentieth Century United States. Use of case studies to emphasize research tools leading to comprehensive analysis. Oral performance stressed.

406. (106.) Organizational Communication (3) I, II
Prerequisites: Six units selected from Speech Communication 103, 104, 535 or 191.
The organization as a communication system; role of the organization in persuasive campaigns; communication strategies and problems within the organizational structure.

496. (198.) Selected Topics in Speech Communication (1-3) I, II
Prerequisite: Twelve units in speech communication.
A specialized study of selected topics in the areas of speech communication. May be repeated with new content. Maximum credit six units.

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

508. (108.) Advanced Interpretation (3) I, II
Three lecture-demonstrations per week and 32 hours of laboratory per semester.
Prerequisite: Speech Communication 111A.
Analysis of techniques of literary composition as guides to oral interpretation. Achievements of the creative artist as they affect the interpretive artist.

530. (130.) Semantics (3) I, II
Recognition of various types of linguistic meaning; logical distinctions in discourse; distinction between real and verbal disagreement; recognition and correction of semantic fallacies.

535. (135.) Theories of Human Communication (3) I, II
Prerequisite: Six units of speech communication.
Special emphasis on various communication theories and models; the relationship of mental variables such as perception, roles and status, behavior change, language and motivation to the entire communication process.

537. (137.) Empirical Study in Speech Communication (3) I, II
Prerequisite: Six units of speech communication. Recommended: Speech Communication 135.
Philosophy of social science and application to current research in speech communication. Theories and constructs related to communication: analysis of current research literature.

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. (189.) 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. (192B.) Persuasion (3) I, II
Prerequisite: Speech Communication 104.
Persuasion with emphasis on psychological principles. Research project on a significant problem. Oral performance required.

GRADUATE COURSES

700. (200.) Research and Bibliography (3)
Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to speech communication. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.

708. (208.) Seminar in Oral Interpretation (3)
Prerequisite: Speech Communication 508.
Aesthetic discipline applied to oral interpretation of various forms of literature. Analysis of thought and emotional content, and aesthetic form. Investigation of advanced problems of delivery. May be repeated with new content. Maximum credit six units.

730. (230.) Seminar in the Analysis of Language (3)
Prerequisite: Speech Communication 530.
Special problems in language theory which may be integrated into the larger bodies of rhetorical and communication theory.

735. (235.) Seminar in Communication Theory (3)
Prerequisite: Speech Communication 535.
Theories of communication; communication models, codes, perception and effects.

750. (250.) Seminar in Rhetorical Theory (3)
Leading figures in rhetorical theory from Plato to contemporary theorists. Special attention given to the application of theory to public address.

751. (251.) Seminar in Rhetorical Criticism (3)
Major systems of speech criticism. Special attention to measuring the effectiveness of a given piece of discourse in terms of actuality and potentiality.

762. (262.) Seminar in Argumentation (3)
Prerequisite: Speech Communication 362.
Significant topics in argumentation: the formulation of problems for argument; analysis; the brief with patterns of argument, traditional and recent; presumption, probability; laws of evidence; fallacies.
780. (280.) Seminar in Public Address, 1660-1850 (3)
Examination of the problems confronting American speakers and the solutions they offered. Special emphasis placed on the rhetorical means used to solve major crises in American history.

781. (281.) Seminar in American Public Address, 1850 to Present (3)
Examination of the problems confronting American speakers and the solutions they offered. Special emphasis placed on the rhetorical means used to solve major crises in American history.

782. (282.) Seminar in Contemporary American Public Address (3)
Prerequisite: Speech Communication 392 or 392.

783. (283.) Experimental Procedures in Speech Communication (3)
Prerequisites: Credit or concurrent registration in Speech Communication 392 and 700. Examination and evaluation of appropriate experimental procedures and traditional methods; special problems in research design.

784. (284.) Seminar in Group Discussion Theory (3)
Prerequisite: Speech Communication 391. A study of descriptive and experimental literature on group discussion covering such topics as interaction, leadership, and means of evaluation.

785. (285.) Seminar in Persuasion (3) I, II
Prerequisite: Speech Communication 392. Contemporary theories and models of persuasion, methods of assessing persuasive effect, and analysis of research literature.

786. (286.) Seminar in Greek and Roman Public Address (3)
Prerequisites: Speech Communication 350, and 392 or 592.

787. (287.) Seminar in 18th Century British Public Address (3)
Prerequisite: Speech Communication 392 or 592.

788. (288.) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

789. (289.) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

790. (290.) Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

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
Professors: Kopp (Chairman), Nichols, Riedman
Associate Professors: Allen, Thile
Assistant Professors: Scott, Williams, Wood

Lecturer: Ellis, Sallee

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 64 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; Psychology 101, 260 and 270; Speech Communication 103 or 104; Speech Pathology and Audiology 104, 103 and 106. (26-27 units)

Major. A minimum of 24 upper division units in speech pathology and audiology selected with the approval of the advisor. Those with an emphasis in the area of deaf education must include Special Education 475, 567 and 572 to complete their major.

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 courses 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 or general education.

Restricted Credential: Speech and Hearing Specialist
The Restricted Credential is available to students who completed credential requirements by September 14, 1974, or who were on a lock list as of December 1, 1973. 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, 329, 340, 527, 528, 551; and 15 units chosen from 356, 357, 640, 644, 645, 646, 649, 656, 657. Consult advisor 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.

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.
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) Language, Speech and Hearing Disorders (3) I, II
Normal growth and development and its relationship to language, speech and hearing development and disorders, covering all areas of exceptionality. 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 (2-4)
Prerequisites: Speech Pathology and Audiology. 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.

308. (105) Language and Speech Development and Disorders (3) I, II
Normal development of speech and language; prevention and remediation of communication disorders commonly found in the classroom. Five hours of observation required per semester. For students not majoring in speech pathology and audiology.

320. (126) Phonetics (3) I, II
Auditory and kinesthetic analysis of the sounds of the English language. Problems of foreign and bilingual dialect.

321. (121) Anatomy, Physiology and Pathology of Speech (3) I, II
Prerequisites: Speech Pathology and Audiology 106 and 323.
Anatomy, physiology and pathology of speech. Survey of aphasia, cerebral palsy, cleft palate, voice disorders, including study of multiply handicapped child. Twenty hours of observation required.

322. (122) Functional Communication Disorders (3) I
Prerequisites: Speech Pathology and Audiology 321.
Speech disorders of emotional etiology, including stuttering. Genetic and cultural aspects of speech and language; phenomena of human communication, including theories of learning and behavior. Relation between disorders of personality and difficulties in communication.

323. (123) Mechanics of Speech Production (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Psychology 260 or Zoology 108.
Anatomy and physiology of the head, neck and thorax related to speech. Laboratory experiences. Demonstrations using charts, models, histological materials and cadavers.

324. (124) Methods of Speech Therapy (3) I
Prerequisite: Speech Pathology and Audiology 321.
Application of techniques of learning to techniques in treatment of specific speech and language disorders with emphasis on problems of articulation, voice, and foreign dialect. Demonstrations.

326. (126) Clinical Practice in Speech Pathology (1-3) I, II, S
Two hours for each unit of credit.
Prerequisites: Speech Pathology and Audiology 320, 324, and three upper division units in speech pathology and audiology.
Supervised practice with representative speech problems. Maximum combined credit eight units for Speech Pathology and Audiology 326, 345, 346 and 626. One unit represents 26 hours of direct clinical practice.

329. (129) Speech Therapy in the Public Schools (3) I
Prerequisites: Speech Pathology and Audiology 324 and 527. Minimum of 50 hours of supervised clinical practice.
Goals, materials and procedures for organizing and implementing speech and hearing programs in the schools. Fifteen hours of observation and 15 hours of screening required. Should be taken the semester before Speech Pathology and Audiology 433.

340. (140) Audiology: Principles (3) I, S
Prerequisites: Speech Pathology and Audiology 105 and Psychology 260.
Anatomy and physiology of the human ear, theories of hearing, physics of sound, medical aspects, pathology and surgery of the ear, survey of current audiological techniques.

341. (141) Audiology: Application (3) II
Two lectures and two hours of laboratory.
Prerequisite: Speech Pathology and Audiology 340.
Tuning fork assessment, speech testing, masking, tests for nonorganic and for sensorineural hearing loss, industrial audiology and hearing aid evaluation.

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 Audiologist 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 Audiological Assessment (1-3) I, II, S
Prerequisite: Speech Pathology and Audiology 341.
Supervised procedures with pure tone, speech, and special audiological testing. Maximum combined credit eight units for 326, 345, and 346. One unit represents 26 hours of direct clinical practice.

346. (146) Clinical Practice with Hard of Hearing (1-3) I, II, S
Prerequisite: Speech Pathology and Audiology 551.
Supervised clinical practice with hard of hearing clients. Maximum credit eight units for 326, 345, and 346. One unit represents 26 hours of direct clinical practice.

356. (156) Field Work with the Deaf (1-3) II
Two hours for each unit of credit.
Prerequisites: Speech Pathology and Audiology 552 and 553.
Supervised experience in auditory training, lipreading, speech therapy and language building, with individual cases. Maximum credit six units.

357. (157) Clinical Practice with the Deaf (1-2) I, II
Prerequisites: Speech Pathology and Audiology 552 and 553.
Supervised therapy with representative deaf problems in the San Diego State University Speech and Hearing Clinic. Maximum combined credit six units for 356 and 357.

358. (158) Manual Communication for the Hearing Impaired (2) I, II Cr/NC
Prerequisites: Demonstrated professional need and consent of instructor.
Manual communication: 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
Prerequisites: Speech Pathology and Audiology 329 and four units of practice.
Clinical practice in elementary or secondary schools or community colleges in speech pathology. Applies only toward Restricted Credential. Speech and Hearing specialist.

496. (196) Selected Topics in Speech Pathology and Audiology (1-3) I, II
Prerequisite: Twelve units in speech pathologi and audiology.
Specialized study of selected topics from the area of speech pathologi and audiology. Maximum credit six units.

499. (199) Special Study (1-3) I, II
Individual study. Maximum credit six units.
Prerequisite: Consent of instructor.
527. (121.) **Diagnostic Methods in Speech Pathology** (3) I, II  
Prerequisites: Speech Pathology and Audiology 320, 321, 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)  
Prerequisite: Speech Pathology and Audiology 527.  
Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment. Practicum minimum of six hours.

530-S. (130-S.) **Family Communication Dynamics** (3) S  
Prerequisites: Speech Pathology and Audiology 322 and 326.  
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.  
Identification 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.  
Prerequisites: Speech Pathology and Audiology 322 and 326.  
The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.

540. (140.) **Speech for the Hearing Impaired** (3) II  
Prerequisites: Speech Pathology and Audiology 320 and 340.  
Theory and practice of speech habilitation of hearing impaired. Includes evaluation of current research and application in developing cognitive and motor processing.

541. (141.) **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, severely hard of hearing.

542. (142.) **Problems of Voice Pathology** (3)  
Prerequisites: Speech Pathology and Audiology 320 and 340.  
The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.

543. (143.) **Hearing Amplification** (1-3) II  
Prerequisite: 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.

544. (144.) **Hearing Conservation** (3) I  
Prerequisite: Speech Pathology and Audiology 341.  
Prerequisites: Speech Pathology and Audiology 320 and 340.  
Theory and methods of speech habilitation of hearing impaired. Includes evaluation of current research and application in developing cognitive and motor processing.

550. (150.) **Problems of Voice Pathology** (3)  
Prerequisite: Speech Pathology and Audiology 320 and 340.  
The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.

551. (151.) **Language for the Hearing Impaired** (3) I  
Prerequisites: Speech Pathology and Audiology 320 and 340.  
Theory and practice of speech habilitation of hearing impaired. Includes evaluation of current research and application in developing cognitive and motor processing.

552. (152.) **Problems of Voice Pathology** (3) II  
Prerequisites: Speech Pathology and Audiology 320 and 340.  
Theory and practice of speech habilitation of hearing impaired. Includes evaluation of current research and application in developing cognitive and motor processing.

553. (153.) **Language for the Hearing Impaired** (3) I  
Prerequisites: Speech Pathology and Audiology 320 and 340.  
Theory and practice of speech habilitation of hearing impaired. Includes evaluation of current research and application in developing cognitive and motor processing.

**GRADUATE COURSES**

All transfer students planning a program to include clinical practica must enroll in the appropriate undergraduate practica as specified for their field of interest (Speech Pathology and Audiology 326, 345, 346, 356, 357, 528) prior to enrollment in graduate practice.

600. (200.) **Research and Bibliography** (3)  
Bibliographic techniques in methods and exposition of research in the fields of speech pathology and audiology. Recommended for the first semester of graduate work, and prerequisite to advancement to candidacy.

601. (201.) **Vocal Science** (3)  
Prerequisite: Speech Pathology and Audiology 320.  
Prerequisites: Speech Pathology and Audiology 320.  
Relationship of basic principles of sound to the speech mechanism. Analysis of speech sound production. Application of mechanical electronic equipment to speech.
654. (254.) Physiological Phonetics (3)
Prerequisite: Speech Pathology and Audiology 552.
Physiology underlying the production of continuous speech, including transitional movements, based on a syllabic concept.

656. (256.) Advanced Field Work with the Deaf (1-3)
Two hours for each unit of credit plus one hour of staffing.
Prerequisites: Speech Pathology and Audiology 552 and 553.
Supervised clinic practice at an advanced level with representative deaf cases. Maximum credit six units of Speech Pathology and Audiology 656 and 657 applicable on a master's degree.

657. (257.) Differential Diagnosis of the Hearing Impaired (3)
Prerequisite: Speech Pathology and Audiology 106, 527, 550, or 551.
Diagnosis of multiply-handicapped, hearing-impaired children, including clinical teaching; assessment methods; materials and equipment; prognosis; current philosophies and trends. Maximum credit six units of Speech Pathology and Audiology 656 and 657 applicable on a master's degree. Twenty-six hours of observation are included.

658. (258.) Seminar in Deaf Education (3) II
Prerequisites: Speech Pathology and Audiology 356, 550; Special Education 475.
Problems of deafness, evaluation of research, interdisciplinary approach to habilitation.

797. (297.) Research (2) Cr/NC
Prerequisite: Advancement to candidacy and consent of the graduate advisor.
Research in speech pathology, deaf education or audiology. Maximum credit two units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC
Individual study. Maximum credit six units.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis or Project (3) Cr/NC
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.
Telecommunications and Film
In the College of Professional Studies

Faculty
Professors: Jameson (Chairman), Jones, Lee, Madsen, Steen, Wylie
Associate Professors: Anderson, Heighton, Johnson, Martin
Assistant Professors: Meador, Misiorowski

Offered by the Department
Master of Arts degree in radio-telecommunications.
Major in radio-telecommunications, with the B.S. degree in applied arts and sciences.

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 64 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 flexible programs utilizing courses in and out of the department which will prepare students in such broad areas as design for television and film, media communications theory, broadcast advertising, instructional radio and television, and the like.

Preparation for the major. Telecommunications and Film 100, 110, 120A-120B, 130, 160 and 280. (23 units.)

Major. A minimum of 24 upper division units in telecommunications and film to include Telecommunications and Film 460, 500 or 505, and 18 units of electives selected with the approval of the department. No more than 48 units in telecommunications and film may be counted toward the 124 units required for graduation.

Radio-Television Major

With the B.S. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 64 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.

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, 480, 566, 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 354.

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 or general education.

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., the social and economic selling 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. (24-28.) Telecommunications Production (4-4) I, II
Two lectures and six hours of activity.
Prerequisite: Limited to telecommunications and film majors.

130. (10.) 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 cinema, with emphasis on the feature film and the documentary. Historical and stylistic influences on the aesthetic values and social implications of cinema.
Illustrated by screen examples.

280. (58.) Television Production and Directing (3) I, II
Two lectures and more than three hours of activity.
Prerequisites: Telecommunications and Film 110 and 120A-120B, with average grade of 2.0 or better.
Theory and practice in the skills and knowledge of television production. Includes basic program types, responsibilities of director, and director's relationships to production staff.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics page 115. 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. (166.) Honors Course (3) I, II
Refer to Honors Program.

310. (112.) Radio and Television News Writing and Editing (3) I, II
(Same course as Journalism 470.)
Gathering, writing and editing news in special forms required by radio and television.

315. (109.) Theory and Criticism of Broadcasting and Film (3) II
Analysis of social, political, economic and aesthetic criticism of broadcasting and film. The function of radio, television and film in the mass communication process. Not open to telecommunications and film majors.

320-S. (172-S.) Workshop in Educational Television (6) S
(Same course as Educational Technology and Librarianship 553-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.

360. (161.) Film Applications in Super-8mm (3) I, II
Explanations of visualized motion through production of super-8mm motion pictures and filmic materials. Cinema as creative expression, particularly as it applies to the student of art and education. Not acceptable for credit in the telecommunications and film major.

363. (163.) International Cinema (3) I
Prerequisite: Telecommunications and Film 160.
Foreign feature films as expressions of national attitudes.

370. (171.) Broadcasting Practices (3) II
Two lectures and three hours of activity.
Planning and production of radio, TV and film programs. Particularly designed for students who will be teaching high school and college speech which includes broadcast activities. Not open to telecommunications and film majors.

390. (140.) Broadcast and Film Performance (3) I
Two lectures and more than three hours of activity.
Prerequisites: Drama 110 or Speech Communication 111A, and Drama 130.
Preparation and delivery of materials before the microphone and camera. Practical experience in University-sponsored productions.

391. (181.) Acting for TV and Film (3) I, II
Two lectures and three hours of activity.
Prerequisite: Drama 130.
Interrelationship between acting and the various media - radio, television, film. Experience in film and television productions. Practical experience in University-sponsored productions.

450. (150.) Lighting for Television and Film (3) I, II
Two lectures and three hours of laboratory.
Theory and application of such aspects as color, temperature, light sources and film emulsions, filters and design of values and colors, and factors of electronic transmission. Practical experience in University-sponsored productions.

460. (162.) Film Techniques (3) I, II
Two lectures and three hours of activity.
Prerequisite: Telecommunications and Film 120A-120B.
Principles of film theory, and practice in cinematography and editing; use of motion picture equipment. Technique and theory as they apply to the several filmic forms. Preparation of filmed materials.

495. (195.) Workshop in Broadcasting (1-3) I, II
Study of some problem in radio, television or film. Maximum credit six units.

496. (198.) Selected Topics in Telecommunications and Film (1-3) I, II
Prerequisite: Twelve units in Telecommunications and Film.
Specialized study of selected topics from the areas of telecommunications and film. May be repeated with new content. Maximum credit six units.

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

500. (104.) Broadcast Management (3) I, II
Prerequisites: Telecommunications and Film 100, 130 and 280.
Administration and organization of radio and television, including radio and television as advertising media, broadcasting research, station organization, promotion and sales, and current developments in radio and television as mass media.

505. (105.) Regulation of Broadcasting (3) I, II
Prerequisite: Telecommunications and Film 100.
Responsibilities of broadcasters as prescribed by law, governmental policies and regulations, and significant court decisions.

510. (106.) Script Writing for Broadcast and Film (3) I, II
Prerequisite: Telecommunications and Film 280.
Development of a single program and series ideas. Scripting of dramatic original and adaptation forms, and the documentary.

512. (180.) Directing Television and Film Drama (3) I, II
Two lectures and 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.

520. (130.) Radio Programming (3) II
Two lectures and more than three hours of scheduled activity.
Prerequisites: Telecommunications and Film 100 and 130.
Program formats, policies, production practices and research in modern programming. Student work is broadcast on KPBS-FM.

540. (103.) Broadcast Advertising (3) I
Prerequisites: Two courses in broadcasting or journalism.
Theory, procedures, and the role of broadcast advertising, including marketing and media research, campaign planning, media strategy, time purchasing, and evaluation.

541. (104.) Broadcast Commercial Practices (3) II
Prerequisites: Telecommunications and Film 130, 280, 540, and permission of instructor.
Planning and execution of broadcast advertising and promotion campaigns; creative strategy and production techniques; use of research; campaign evaluation.

550. (156.) Advanced Lighting and Staging for Television and Film (4) I, II
One lecture and more than nine hours of activity.
Prerequisite: Telecommunications and Film 120A-120B.
Production elements of television and film, to include lighting and staging techniques, art and graphics, scene design and scene decoration. Practical experience in University-sponsored productions.

560A-560B. (165A-165B.) 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 practice in film production. Studio and location work in the preparation of filmed materials, and complete nontheatrical films.

562. (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.

563. (165.) 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.

Telecommunications and Film / 469
565. (165.) Animated Film Techniques (3) I, II
Two lectures and three hours of activity.
Screening of representative examples and production of a filmograph or animated motion picture. Practical experience in University-sponsored productions.

570. (170.) Educational Telecommunications (3)
Prerequisite: Telecommunications and Film 100.
The role of instructional and public broadcasting in the United States; utilization of telecommunications in the classroom and industrial training programs.

580. (185.) 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. (184.) Advanced Television Directing (4) I, II
One lecture and more than nine hours of activity.
Prerequisites: Telecommunications and Film 100, 280, 460, 520 and consent of instructor.
Practical experience in the direction and production of television programs. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.

590. (108.) International Broadcasting (3)
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

600. (200.) Research and Bibliography (3)
Basic reference works, scholarly and critical journals; bibliographical techniques; exercises and problems in methods and exposition of research as it relates to the various areas of telecommunications and film. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.

601. (265.) Mass Communications Research (3)
Prerequisite: Telecommunications and Film 600.
Design and execution of a media research project; audience and message analysis; experimental design and survey research methodology.

602. (272.) Seminar in Mass Communication Theory (3)
Prerequisite: Speech Communication 535.
Analysis of theoretical models of mass communication. Application of operational models for the diffusion of information, and the adoption of innovation, to problems in the mass media.

603. (273.) Mass Communications Message Design (3)
Prerequisite: Speech Communication 535.
Selection and organization of message design elements in the mass communications media. Analysis of different effects of various types of mass communications formats, presentations, and systems on individuals and groups.

610. (210.) Seminar in Writing for Broadcast and Film (3)
Prerequisites: Telecommunications and Film 363, 460 and 510.
Dramatic structures as they apply to broadcasting and cinema. Writing a full-length script or scenario.

615. (212.) Criticism of Broadcasting and Cinema (3)
Prerequisite: The equivalent of an undergraduate major in telecommunications and film. Standards for objective appraisal of the ethical and artistic aspects of radio, television and film programs.

620. (203.) Seminar in History of Broadcasting (3)
Prerequisite: The equivalent of an undergraduate major in telecommunications and film. The development of broadcasting in its social, legislative and economic settings, with emphasis on broadcasting in the U.S.
Women's Studies

Administered by the Dean of the College of Arts and Letters

Faculty
Lecturers: Balter (Chairperson), Platt

Offered by Women's Studies

Courses in women's studies. Major or minor work in women's studies is not offered.

LOWER DIVISION COURSES

110. (10.) Introduction to Women's Studies (3)
Effects of formal and informal social, economic and political institutions on women from infancy to old age.

299. (99.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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

310. (100.) Women in Comparative Cultures (3) I, II
Women's life styles (value systems, self-image, and world view) from least to most differentiated societies. Impact of women's autonomy and influence on different family models, kinship systems and economic patterns. Women's roles and behavior in cooperative versus individualistic societies.

320. (120.) Self-actualization of Women (3) I, II
Self-actualization psychology, emphasizing individual uniqueness and the maximization of human potential; theories of human behavior as they are applied to women; development of women's self-concept in American society.

325. (125.) Psychological Aspects of Women (3) I, II
Prerequisite: Women's Studies 320.
Prevalent theories of the psychological aspects of women in light of recent developments in the theory of sexuality, readings from Women's Liberation and experiences as women. Development of new methods of research and therapy which will aid women.

Prerequisite: One course in women's studies.
The movement to win greater political, social and economic equality for women. Semester I: The development and continuing of the Women's Movement evolution. Semester II: Racism and sexism—relationship to the Women's Movement.

340. (140.) Women in History (3) I, II
A survey of the social, cultural, economic and intellectual history of women; origins of women's roles.

341A-341B. (141A-141B.) Women in American History (3-3)
A survey of the social, cultural, economic, political and intellectual history of women in America. Semester I: To 1920. Semester II: Since 1920.

Semester I: Images, roles and identities of women found in literature, their sociological and political implications. Semester II: Famous female writers; the treatment of women as literary artists.

351. (151.) Women in the Arts (3) I
Images of women in the arts. Discussion on how these images reinforce ideas such as male dominance, the nuclear family, monogamy, and female stereotypes.

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
Prerequisite: One course in women's studies.
The legal status of women in employment, education, health and welfare, property ownership, criminal justice, abortion, rape and prostitution.

380. (180.) Status of Women Under Various Economic and Political Systems (3) I, II
Historical and contemporary institutional factors influencing the social and political status of women under various economic systems; economic implications of alternatives to expected patterns of women's behavior and institutional arrangements.

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.

496. Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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. Field Experience (3) I, II
Prerequisite: One course in women's studies.
Exploration and analysis of sex discrimination in public and private agencies in the San Diego area as they relate to women through supervised experience and observation; understanding principles and utilizing skills in organizing and effecting change. Maximum credit six units.
Zoology

In the College of Sciences

Faculty
Emeritus: Crouch, Harwood, Kaston
Professors: Atkins, Bohnsack, Carpenter (Chairman), Cohn, Dexter, Estes, Etheridge, Huffman, Hunsaker, Lillegreven, McLean, Monroe, Norland, Olson, Wilson
Associate Professors: Callett, Chen, Collier, Cooper, Krecskian, 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 64 of this catalog. To satisfy the requirement in foreign languages, it is strongly recommended that students select French, German or Russian.

Preparation for the major. Biology 100, 100L, 215; Zoology 150 and 160 or 506; Chemistry 200A-200B, and 230 or 231; Physics 115A-115B or 124A-124B; Mathematics 121 or 140. (38-42 units.) Recommended: Mathematics 122 or 150; and Physics 125A-125B if 124A-124B is taken.

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 64 of this catalog. A minor is not required with this major.

Preparation for the major. Biology 100, 100L, 215; Zoology 150 and 160 or 506; Chemistry 200A-200B and 230 or 231; Physics 115A-115B or 124A-124B; Mathematics 121 or 140. (38-42 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. 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.

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 or general education.

Zoology

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in life sciences in the area of zoology are being revised. For further information consult the adviser for biological sciences teaching programs.

LOWER DIVISION COURSES

108. (15.) Human Anatomy (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: An introductory course in high school biology or zoology.

150. (40.) 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.
A introductory course in the biology of the vertebrates with emphasis on the vertebrate organism as a whole: anatomy, physiology, development and evolution.

299. (59.) Experimental Topics (2-4)
Refer to the catalog statement on Experimental Topics on page 115. 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.

314. (114.) Natural History of the Vertebrates (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: One semester of college biology.
Natural history, distribution and classification of vertebrate animals; emphasis on local forms. Not open to zoology majors.

319-S. (119-S.) Field Zoology (4) S
Two lectures and six hours of laboratory.
Prerequisite: A course in college biological science.
Observational methods; collecting techniques; identification, ecology and behavior of southern California animals. Primarily for students not majoring in the biological sciences.

330. (120.) Insects and Human Welfare (3-4) II
Prerequisites: Biology 100 and 100L.
The role of insects in global ecosystems with emphasis on medical and economic aspects, adaptation of insects for these roles, and analysis of current problems and tactics in pest management. Four all-day field trips will be taken by students wishing the fourth unit of credit. Not open to zoology majors.

335. (135.) Scientific Illustration (3)
Two lectures and three hours of laboratory; field trips.
Preparation of illustrative materials, inked drawings, charts, lettering, models, still and movie photography, and photomicrography.

350. (150.) Marine Biology (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 100.
An introduction to marine organisms and their environment. Not open to students with credit for Zoology 150 or Biology 520.

490. (190.) Senior Investigation and Report in Invertebrate Zoology (2)
Prerequisite: Consent of instructor.
Investigation and reports on the current literature of invertebrate zoology.

UPPER DIVISION COURSES
491. **Senior Investigation and Report in Vertebrate Zoology** (2)
- Prerequisite: Consent of instructor.
- Investigation and reports on the current literature of vertebrate zoology.

496. **Experimental Topics** (1-4)
- Refer to the catalog statement on Experimental Topics on page 115. 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. **Methods of Investigation** (2) I, II
- One discussion and three additional hours to be arranged.
- Prerequisite: Consent of instructor.

501. **Histology** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisites: Biology 100 and 100L.
- Dissection and study of organ systems of typical vertebrates.

502. **Invertebrate Embryology** (3)
- Two lectures and three hours of laboratory.
- Prerequisite: Zoology 150.
- Description and experimental analysis of the development of invertebrates.

503. **Embryology** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisites: Zoology 150 and 160, or 506.
- Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

506. **Comparative Anatomy of the Vertebrates** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisites: Biology 100 and 100L.

508. **Histology** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisites: Biology 100 and 100L. Recommended: Microbiology 310 or Zoology 508 or 560.
- Descriptive microscopic anatomy of cells, tissues and organs of mammals with special emphasis on humans.

510. **Marine Invertebrate Zoology** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisites: Biology 510 and Zoology 150.
- Ecology, morphology, behavior and physiology of marine invertebrates. Frequent field trips to local marine environments.

515. **Ichthyology** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisite: Zoology 160 or 506.
- Identification, systematics, evolution, structure, physiology, behavior and ecology of fishes.

516. **Herpetology** (4) I
- Two lectures and six hours of laboratory.
- Prerequisites: Consent of instructor.

517. **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. **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. **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. **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.

523. **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. **Insect Ecology** (4) II
- Two lectures and six hours of laboratory.
- Prerequisites: Biology 520, 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. **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. Quarantine measures are also studied.

526. **Medical Entomology** (3) I
- Two lectures and three hours of laboratory.
- Prerequisite: Zoology 150, 160 or 521 (preferred), or Microbiology 310.
- The role of insects and other arthropods in transmission and causation of human diseases.

527. **Insect Control** (2) I
- 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. **Insect Physiology** (4) I
- Prerequisites: Zoology 521; Chemistry 230 or 231. Students not specializing in entomology may have the Zoology 521 requirement waived by the instructor.
- Description, theory and experimental analysis of all major physiological processes in insects.

529. **Principles of Pest Management** (3) I
- Two lectures and three hours of laboratory.
- Prerequisites: Botany 300 or 303 or 561; 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. **Advanced Invertebrate Zoology** (3) I, II
- One lecture and six hours of laboratory.
- Prerequisite: Zoology 150.

532. **Parasitology** (4) I, II
- Two lectures and six hours of laboratory.
- Prerequisite: Zoology 150 or Microbiology 510.
- 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.
Physiological Zoology (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Zoology 150 or 160, and Chemistry 231.
A comparative and evolutionary study of the functions of organ systems and their environmental significance.

Experimental Animal Surgery (2-2) I, II
One lecture and three hours of laboratory.
Prerequisites: A course in vertebrate anatomy, a course in animal physiology and consent of instructor. Zoology 545A is prerequisite to 545B.
Fundamental principles of animal care, disease prevention and aseptic surgery.

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.

Lower Vertebrate Paleontology (4) II
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.

Mammalian Paleontology (4) II
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 is not to be followed in sequence with Zoology 560.

Animal Behavior (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Zoology 150 and 160 or Psychology 210, 260, and consent of instructor.
Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of behavior.

Hormonal Aspects of Behavior (3) II
Prerequisites: Biology 560 and Zoology 540.
Chemosensory 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

Physiological Zoology (4) Seminar (2-3)
An intensive study in advanced zoology; topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

Marine Zoology (2)
Recent developments in marine zoology. Maximum credit four units applicable on a master's degree.

Vertebrate Morphology (2)
Current problems in the descriptive, functional and evolutionary anatomy of vertebrates. Maximum credit four units applicable on a master's degree.

Biological Ectothermic Vertebrates (2)
Prerequisite: Zoology 160 or 506.
Biology of ectothermic animals. Maximum credit four units applicable on a master's degree.

Biological Endothermic Vertebrates (2)
Prerequisite: Zoology 160 or 506.
Biology of endothermic animals. Maximum credit four units applicable on a master's degree.
ADDENDA

Faculty and Administration
Index
Faculty and Administration
1974 – 1975

GOLDING, BRAGE (1972)      President, Professor of Chemistry and Engineering
B.S., M.S., Ph.D., Purdue University.

ABBOTT, MITCHEL T. (1964)     Professor of Chemistry
B.S., Ph.D., University of California, Los Angeles.

ABBOTT, PATRICK E. (1973)    Associate Professor of Geology
B.S., San Diego State University; M.A., Ph.D., University of Texas.

ACKERLY, ROBERT S. JR. (1963)     Associate Dean of The University College
B.A., M.S., Colorado College; Ed.D., Indiana University.

ADAMS, WILLIAM J. (1955)     Professor of Speech Communication
A.B., William & Mary; B.S.L.I., University of Denver.

ADAMS, ELISE B. (1971)     Professor of English
B.A., M.A., Ph.D., University of Oklahoma.

ADAMS, WILLIAM E. (1967)     Professor of Speech Communication
B.S., M.S., Ph.D., Pennsylvania State University; Ph.D., Stanford University.

AJEMIAN, JAMES A. (1970)    Assistant Professor of Sociology
B.A., Harvard College; M.S., Columbia University; Ph.D., University of Michigan.

AKERS, FRED C. (1966)     Associate Professor of Marketing
M.B.A. (Marketing), Northwestern University; M.B.A. (Economics), Ph.D., University of Chicago.

ALEXANDER, CYNTHIA L. (1974)    Scholarship Adviser
M.A., Ball State University.

ALEXANDER, JAMES V. (1967)     Associate Professor of Botany
B.A., San Diego State University; M.S., Ph.D., University of California.

ALF, EDWARD F., JR. (1963)   Professor of Psychology
Ph.D., Washington University.

ALLEN, ELIZABETH J. (1971)    Associate Professor of Speech, Pathology and Audiology
Ph.D., University of Illinois.

AMBLE, KJELL (1962)     Professor of Drama
B.S., M.A., Ph.D., Northwestern University.

ANDERSON, EUGENE A. (1968)     Associate Professor of Microbiology
A.B., San Diego State University; Ph.D., Oregon State University.

ANDERSON, ALLAN W. (1962)     Professor of Religious Studies
B.A., Trinity College; Ph.D., Columbia University.

ANDERSON, ARTHUR J. (1963)    Associate Professor of Anthropology
A.B., San Diego State University; M.A., Claremont Colleges; Ph.D., University of Southern California.

ANDERSON, DWIGHT H. (1966)    Professor of Political Science
B.A., University of Michigan; M.A., Ph.D., University of California, Berkeley.

ANDERSON, ERNEST F. (1973)     Associate Professor of Social Work
Ph.D., University of California, Los Angeles; M.S.W., San Diego State University.

ANDERSON, EVANS L. (1954)    Professor of Elementary Education
B.A., University of Oregon; M.A., University of Minnesota; Ed.D., University of Denver.

ANDERSON, GRAYDON K. (1949)   Professor of Economics
A.B., Williams College; Ph.D., University of Wisconsin.

ANDERSON, HAYES L. (1966)     Associate Professor of Telecommunications and Film
B.S., 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.A., North Texas State College; M.M., University of Wisconsin.

ANDERSON, W. CARLISLE (1955)    Professor of Industrial Studies
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.

ANDRADE, CHARLES D. (1947)   Professor of Political Science
B.A., Whitman 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.

ANGIONE, RONALD J. (1969)    Associate Professor of Astronomy
A.B., M.S., Ph.D., University of California; Ph.D., University of Texas.

ANING, THOMAS (1967)     Assistant Professor of English
B.A., M.A., Ph.D., University of California, Los Angeles.

ANTHONY, LUCIA M. (1967)    Assistant Professor of Drama
B.A., M.A., Ph.D., University of Texas.

ANTHONY, SALLY M. (Mrs.) (1963)    Associate Professor of Secondary Education
B.A., University of Colorado; M.Ed., Ed.D., Rutgers University.

APPLEBY, ANDREW B. (1973)    Assistant Professor of History
B.A., Ph.D., University of California, Los Angeles.

APPLEBY, JOYCE O. (1967)     Associate Dean, College of Arts and Letters; Professor of History
M.A., University of California, Santa Barbara; Ph.D., University of California, Los Angeles.

ARCHER, ELLIS C. (1956)     Professor of Information Systems
B.S., Northwestern State College; M.S., University of Kansas; Ed.D., Stanford University.

ARCHIE, TOMAS A. (1973)     Dean, School of Education; Professor of Educational Administration
B.S., New Mexico State University; M.S., Ph.D., University of New Mexico.

ATCHISON, THOMAS L. (1946)    Professor of Management
A.B., Stanford University; M.B.A., University of California, Los Angeles; Ph.D., University of Washington.

ATKINS, MICHAEL D. (1970)    Professor of Zoology
B.A., M.S., University of British Columbia; Ph.D., Oregon State University.

AUIN, JOAN F. (1970)     Assistant Professor of Art
B.A., California State University, Long Beach; M.F.A., Cranbrook Academy of Art.

AVILA, VERNON L. (1973)     Lecturer in Zoology
B.A., University of New Mexico; M.A., North Arizona University; Ph.D., University of Colorado.

AWNER, K. J. (1964)     Assistant Professor of Biology
B.A., University of California, Riverside; M.A., Ph.D., University of Texas.

AYERS, THOMAS (1968)     Professor of Geography, Imperial Valley
B.A., University of Minnesota; M.A., Ph.D., Southern Illinois University.

BAAS, SARA (Mrs.) (1972)     Associate Professor of Accounting
B.A., New York University; M.A., Ph.D., University of California, Berkeley.

BABCOCK, GEORGE (1958)    Professor of Economics
B.A., Harvard College; M.A., University of Nebraska; Ph.D., University of Oregon.

BAER, ADELA S. (1962)     Professor of Biology
B.S., University of Illinois.

BAILEY, ALLAN R. (1963)     Associate Professor of Accounting
B.S., San Diego State University; M.B.A., Ph.D., University of California, Los Angeles.

BAILEY, GERALD D. (1964)     Professor of Industrial Studies
B.A., M.A., Central Washington State College; Ed.D., University of Missouri.

BAILEY, KAMILA U. (Mrs.) (1960)    Associate Professor of Social Work
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Index / 525

524 / Index

Engineering geology, 281
English, 230
English test for foreign students, 47, 51
Enrollment, limitations of, 51
Environment, emphasis in, 432
Environmental design, 133
Environmental health, 251
European studies, 256
Center for, 33
Evaluation, 60
Evaluation of transfer credits, 50
Examination — (see also tests) credit by, 57
final, 56
Extracurricular, 61
Experimental topics courses, 115
Extension courses, 30, 314
Bulletin, inside front cover, credit for, 57
fees, 9
External degree program, 31

Facilities

Imperial Valley, 28
SDSU, 24
Faculty directory, 482
Faculty, Imperial Valley, 27
Faculty, part-time, 518
Family studies and consumer sciences, 259
Fees, 8
Filing for admission, 46
Final examinations, 56
Finance

major in, 95
minor in, 94
Financial aid, 36
Fisher bill credentials, 100
Foods and nutrition, 259
Foreign language requirement for graduation, 65
Foreign students, 48, 49, 51
Foreign study, 30
Foundation, San Diego State University, 35
Foundations of learning graduation requirement, 68
French, 268
French and Italian languages and literatures, 20
Funds, cost and sources of, 14

General college courses, 155, 271
General education requirements for graduation, 67
General information, 24
General regulations, 54
Genetics, 152
Genchemistry, 281
Geology, 272
Geological sciences — (see geology)
Geology, 280
Geophysics, 280
German, 287
Germanic and Slavic languages and literatures, 20
GPA, 55
Grade points, 54
Grades

repeated course, policy on, 56
required for graduation, policy on, 55
student options, 54
Graduate degrees, 84
Graduate division

admission procedures, 85
aptitude test, 48
Bulletin, 87, inside front cover
degree requirements, 87
degrees offered, 84
withdrawal, 86
Graduation

application for, 70
commencement exercises, 70
competency tests for, 65
election of regulations for, 70
fee, 8
incomplete grade at time of, 55
requirements for, 64
with distinction in major, 70
with honors, 70

Graphic communication, 133
Greek, 292
Grief counseling, student, 62
Health science and safety, 293
Health services, 39
Hebrew, 298
Higher education programs, 104
High school students, admission of, 49
History, 299
Holidays, 6
Home economics

major, 259
minor, 260
Honors

at graduation, 70
courses, 115
program, 80
Hospitalization insurance, 39
Housing, 42
Human experience graduation requirement, 69
Humanities, 307

Imperial Valley

Bulletin, inside front cover
faculty, 27
location and function, 27
physical facilities, 28
program, 27
registration and commencement, 28
Incomplete grade, 55
Index, 522
Industrial arts, 308
Industrial safety education, 293
Industrial studies, 20 — (see industrial arts)
Industrial technology, 316
Information sources, inside back cover
Information systems

major in, 96
minor in, 98
Institutes, research, 32

Insurance for students, 39
Interdepartmental majors

elementary, 103
Interdisciplinary programs, 76
Africa and the Middle East, 432
African studies, 76
American studies, 121
Asian studies, 146
Child development, 76
Environment, 432
European studies, 256
Humanities, 307
Jewish studies, 76
Latin American studies, 330
Liberal studies, 76
Middle East studies, 78
Native American studies, 78
Russian and East European studies, 78

International programs, 30
Italian, 319
Japanese, 321
Jewish studies, 76
Jobs for students, 39
Journal of Business, inside front cover
Journalism, 322
Junior college
credentiai, 104
credit, 56

Labor Economics, Institute of, 33
Late registration fee, 8
Latin, 329
Latin American studies, 330
Center for, 33
Law enforcement education grants, 37
Leave of absence, 80
Leisure agency leadership, 422
Liberal arts breadth requirements, 67
Liberal studies, 76, 103
Library, 25
Library services certificate, 99
Limitation of enrollment, 51
Literacy, study list, 61
Linguistics, 332
Literary magazine, inside front cover
Literature — (see English)
Living costs, 36
 Loans, 36
Lost library book fee, 8
Love Library, 25
Lower division

course numbering, 56, 114
students, 58
Magazine emphasis, 322
Major, 66
change of, 59
double, 66
Malcolm A. Love Library, 25
Management

major in, 96
minor in, 98
Marine geology, 281
Marine studies
Center for, 33
courses in, 372
Marketing

major in, 97
minor in, 98
Marking system, 54
Mass communications, 85
Mass communications emphasis, 322
Master's degree

admission to program, 85
degrees offered, 84
Mathematics, 335
placement tests, 48, 336
Matriculation

in the university, 58
in the graduate division, 83
Mechanical engineering, 116
Medical insurance for students, 39
Medical technology, 350
Mexican-American studies, 345
Microbiology, 350
Middle East studies, 78
Military service, 38
Minor for a bachelor's degree, 66, 74
Monty's Den, 41
Multiple subject teaching credential, 102
Music, 256
Native American studies, 78
New Scholar, The, inside front cover
News — editorial emphasis, 322
Newspaper, university, inside front cover
Nondegree curricula, 90
criminal justice administration certificate, 196
public administration certificate, 416
Nonresident tuition, 8
determination of residence, 52
Nursing, 368
Nutrition, 259
Oceanography, 372
Office of the Chancellor, 16
Officers of administration, 19
Organization and administration, 11
Outdoor recreation, 422
Painting and printmaking, 133
Paleobiology Council, 33
Paleontology, 280
Panathenaic office, 43
Parent's confidential statement, 36
Park and recreation management, 422
Parking, R. 423
Part-time jobs, 39
Philosophy, 373
Photojournalism emphasis, 322
Physical activities requirement for graduation, 65
Physical education, 378
Physical science, 386
reaching major, 104, 386
Physics, 389