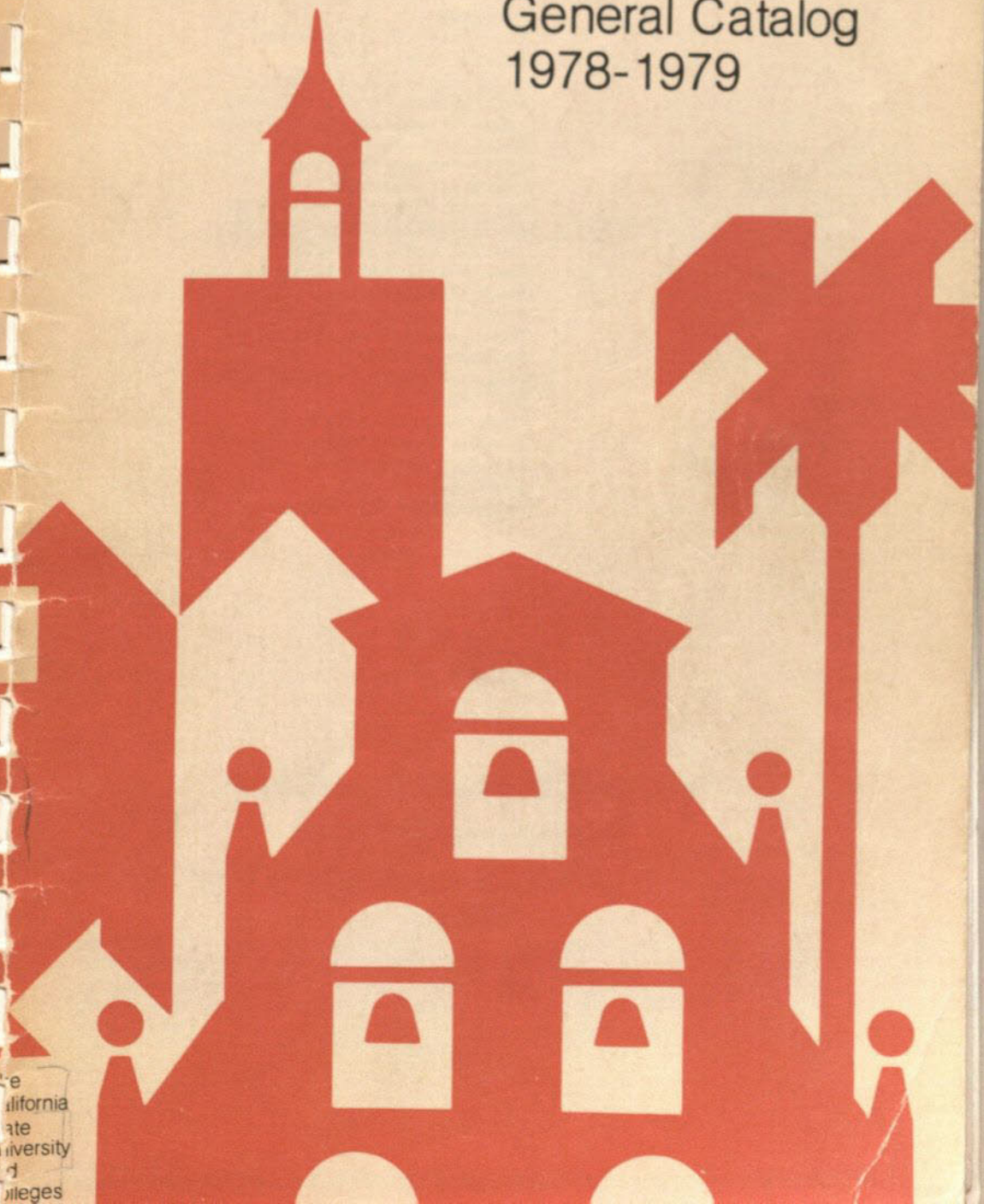
SDSU

General Catalog
1978-1979



For additional information

on	consult
Admissions	Director of Admissions and Records
Athletics	Director of Athletics, PE-107
Counseling	Director of Counseling, 5630 Hardy
Employment of Students	Director of Career Planning, 5858 Hardy
Extension Classes	College of Extended Studies, 5707 Hardy
Financial Aid	Director of Financial Aid, CL-122
Fraternities and Sororities	Director of Housing, 5860 Hardy
Grades	Admissions and Records
Graduate Study	Dean of the Graduate Division, AD-220
Health Services	Director of Health Services
Housing	Director of Housing, 5860 Hardy
Imperial Valley Campus	Dean, 720 Heber Ave., Calexico
Library Facilities	Director of Library Services
Overseas Study	College of Extended Studies, 5707 Hardy
Parking	Chief of University Police, 5882 Hardy
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ROTC	Chairman, Aerospace Studies, BA-320
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Summer Study	College of Extended Studies, 5707 Hardy
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Transcripts	Admissions and Records
Veterans Benefits	Veterans Adviser, 5525 Hardy

General Catalog 1978-1979, volume 65, San Diego State University, 5300 Campanile Drive, San Diego, California 92182.

Preparation of this catalog, completed in January of each year, is under the direction of the Curriculum Assistant to the Vice President for Academic Affairs. Catalog cover by University Design Center. The Catalog may be purchased, starting in May of each year, at the Aztec Shops on campus for $1.50 plus 6% sales tax, a price established by the Board of Trustees of The California State University and Colleges. To order by mail, send $2.00 directly to the Aztec Shops, San Diego State University, 5300 Campanile Drive, San Diego, CA 92182.

General Catalog

and

Announcement of Courses

Volume 65

1978

San Diego State University
5300 Campanile Drive
San Diego, California
92182
(714) 286-5000

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1978-1979 Academic Calendar

Summer Sessions, 1978

May 30-June 16 — Term I summer session (3 weeks).
June 19-July 28 — Term II summer session (6 weeks).
July 4 — Holiday—Independence Day.
July 31-August 18 — Term III summer session (3 weeks).

Fall Semester, 1978

August 1-31 — Applications for admission or readmission to San Diego State University for the spring semester 1979 accepted. Applications are accepted after August 31 only until enrollment quotas are met.

Aug. 8, 10, 16, 18, 22, 23, 25, 29, 31 — Mathematics placement examinations for students planning to enroll in Mathematics 103, 104, 119, 120, 121, 140, 150; or Economics 201.

August 21-September 1 — Testing, advising and registration.
August 29 — Opening date of the academic year.
September 4 — Holiday—Labor Day.
September 5 — First day of classes.
September 5 — Check with Department of Elementary Education for application dates and deadlines for Multiple Subjects Credential Program.

Sept. 16, 21, 22; Oct. 9, 10, 11; Nov. 13, 14, 17; Dec. 5, 6, 7 — Reading Comprehension Test for admission to elementary or secondary education.
September 19 — Last day to apply for refunds.
September 22 — Last day to file application for bachelor's degree for mid-year graduation.

October 2 — Last day to withdraw from class or change program.
October 9-27 — File application for admission to Secondary Education 400 for spring semester in room ED-100.

November 1-30 — Application for admission or readmission to San Diego State University for the fall semester 1979 accepted. Applications are accepted after November 30 only until enrollment quotas are met.

November 23-26 — Thanksgiving recess.
December 1 — Last day to file application for the bachelor's degree for May or summer graduation.

December 15 — Last day of classes before final examinations.
December 15 — Last day to apply for a leave of absence for spring semester.
December 16-22 — Final examinations.
December 23 — Winter recess begins.
December 27 — Grades due.
December 27 — Last day of fall semester.

Spring Semester, 1979

August 1-31 — Applications for admission or readmission to San Diego State University for the spring semester 1979 accepted. Applications are accepted after August 31 only until enrollment quotas are met.

Jan. 9, 10, 12, 16, 18, 19, 22, 23, 25 — Mathematics placement examinations for studer.ts planning to enroll in Mathematics 103, 104, 119, 120, 121, 140, 150; or Economics 201.

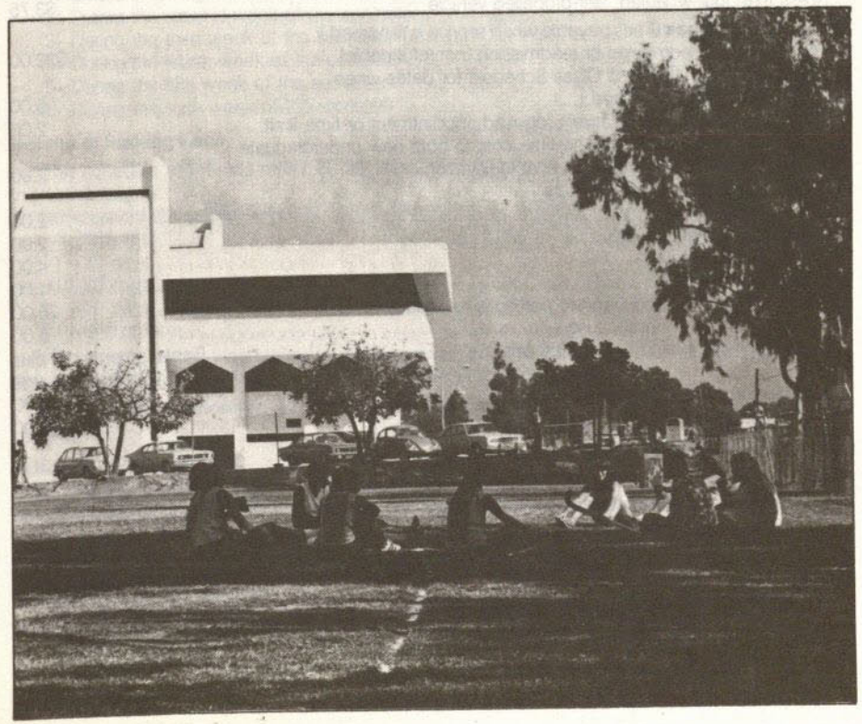
January 15-26 — Testing, advising and registration.
January 22 — First day, second semester.
January 29 — Department work day.
January 30 — Check with Department of Elementary Education for application dates and deadlines for Multiple Subjects Credential Program.

January 30 — First day of classes.
February 13 — Last day to apply for refunds.
Feb. 14, 15, 16; Mar. 15, 16; Apr. 17, 18, 19; May 3, 4, 5 — Reading Comprehension Test for admission to elementary or secondary education.
February 19-March 9 — File application for admission to Secondary Education 400 for fall semester in room ED-100.

February 26 — Last day to withdraw from class or change program.
April 6 — Last day of classes before spring recess.
April 7-15 — Spring recess.
April 17 — Classes resume.
May 17 — Last day of classes before final examinations.
May 18 — Study and consultation day.
May 19-25 — Final examinations.
May 26 — Commencement.
May 28 — Holiday—Memorial Day.
May 30 — Grades due.
May 30 — Last day of spring semester.
June 29 — Last day to apply for a leave of absence for fall semester.

Summer Sessions, 1979

May 28 — Holiday—Memorial Day.
May 29-June 15 — Term I summer session (3 weeks).
June 18-July 27 — Term II summer session (6 weeks).
June 29 — Last day to apply for a leave of absence for fall semester.
July 4 — Holiday—Independence Day.
July 30-August 17 — 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 $5.00.)

Fees for Student Services—All Students: on basis of units carried. (Auditors pay same fees as students carrying courses for credit.) Nonresident and foreign students pay additional fees—see information below.

0 units—6.0 units	$81.00
6.1 or more units	$96.00

The above fees also include a student activity fee of $10.00, a student union fee of $11.00 and a nonrefundable facilities fee of $3.00.

Tuition for Nonresident Student (Foreign and Domestic)

(In addition to student services and activity fees.)

Nonresident student enrolled for 15 units or more	$855.00
Nonresident student enrolled for less than 15 units or fraction thereof—per unit	$57.00

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

Health insurance (mandatory for foreign students)	per year, approximately $43.00

Parking Fees

Nonreserved parking space, per semester	$15.00
Car pool—see cashier at registration.	
Less than four-wheeled, self-propelled vehicle	$3.75

Miscellaneous Fees (Fees payable when service is rendered.)

Application for admission or readmission (nonrefundable)	$20.00
Late registration (Refer to Class Schedule for dates when this fee will be assessed.)	5.00
Failure to meet administratively required appointment or time limit	2.00
Photo-Identification Card (One-time cost to both new undergraduate and graduate students at time of registration.)	2.00
Lost Identification Cards/Stickers	
Card only	2.00
Registration sticker only	2.00
Card and sticker	4.00
Transcript of record	1.00
R.O.T.C. deposit (Unexpended portion is refundable.)	25.00
Check returned for any cause	5.00
Loss of or damage to library materials	Replacement cost plus $5.85 service charge
Graduation fee	6.00
Credential fee	20.00

Bank of America Visa Cards

Students may use California Bank of America Visa 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 Cashiers Office in CL-108.

Bank of America Visa accounts are subject to a one percent "check service" fee. ($1 minimum.)

Master Charge

Approved for extension courses and summer sessions only.

REGULAR SESSION FEE REFUNDS

Fees may be refunded only as authorized by Sections 41802, 41803, and 41913 of Title 5, *California Administrative Code* and other pertinent provisions of law. Whether a fee may be refunded, and the circumstances under which a fee or any part of a fee may be refunded, may vary depending on the particular fee involved. Requirements governing refund may include such matters as the reason for seeking a refund (for example, death, disability, compulsory military service), the number of days of instruction which have elapsed before application for refund is made (for example, requests for refund of student services fees, student body organization fees, and student body center fees must be made no later than 14 days following the commencement of instruction and requests for refund of extension course tuition fees must be made prior to the fourth meeting of the class), and the degree to which the campus has provided the services for which the fee has been charged. Details concerning the fees which may be refunded and the appropriate procedure to be followed in seeking a refund may be obtained from the Controller's Office, AD-3rd floor.

Refund of Student Services Fees

To be eligible for refund of student services fees, a student withdrawing from the university must obtain a withdrawal card from the Registrar's Office and file a refund application with the Cashier's Office, CL-108, not later than 14 days following the commencement of instruction. All but $5.00 will be refunded. A student dropping from more than six units to six units or less must file an application with the Cashier's Office not later than 14 days following the day the academic term begins. The amount of $5.00 shall be retained. For additional information contact the Cashier's Office or telephone 286-5253.

Refund of Nonresident and Foreign Student Tuition

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

Time Limit	*Amount of Refund*
(1) Before or during the first week of the semester	100 percent of fee
(2) During the second week of the semester	90 percent of fee
(3) During the third week of the semester	70 percent of fee
(4) During the fourth week of the semester	50 percent of fee
(5) During the fifth week of the semester	30 percent of fee
(6) During the sixth week of the semester	20 percent of fee

Refund of Parking Fees

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

Nonreserved space per semester:

Period	*Amount of Refund*
1—30 days	75 percent of fee
31—60 days	50 percent of fee
61—90 days	25 percent of fee
91—end of term	None

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	(per unit) $37.00
Activity Fee:	
Term I	1.00
Term II	2.00
Term III	1.00
Student Union Fee:	
Term I	2.00
Term II	3.50
Term III	2.00

Parking Fees (nonreserved spaces):
- Entire summer period 10.00
- Six-week session 6.00
- Three-week session 4.00

EXTENSION COURSE FEES

Lecture or discussion course ..... (per unit) $37.00

EXEMPTIONS

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

ALAN PATTEE SCHOLARSHIPS

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

STUDENT SERVICES FEE

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

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

(1) Social and Cultural Development Activities: provides for the coordination of various student activities, student organizations, student government and cultural programs.

(2) Counseling: includes the cost of counselors' salaries and clerical support plus operating expenses and equipment.

(3) Testing: covers the cost of test officers, psychometrists, clerical support, operating expenses and equipment.

(4) Placement: provides career information to students and faculty for academic program planning and employment information to graduates and students.

(5) Financial Aid Administration: includes the cost of the counseling and business services provided in connection with the financial aid programs.

(6) Health Services: provides health services to students and covers the cost of salaries of medical officers and nurses plus related clerical and technical personnel as well as operating expenses and equipment.

(7) Housing: includes the cost of personnel providing housing information and monitoring housing services provided to students.

(8) Student Services Administration: covers 50 percent of the cost of the Dean of Students Office which has responsibility for the overall administration of student services.

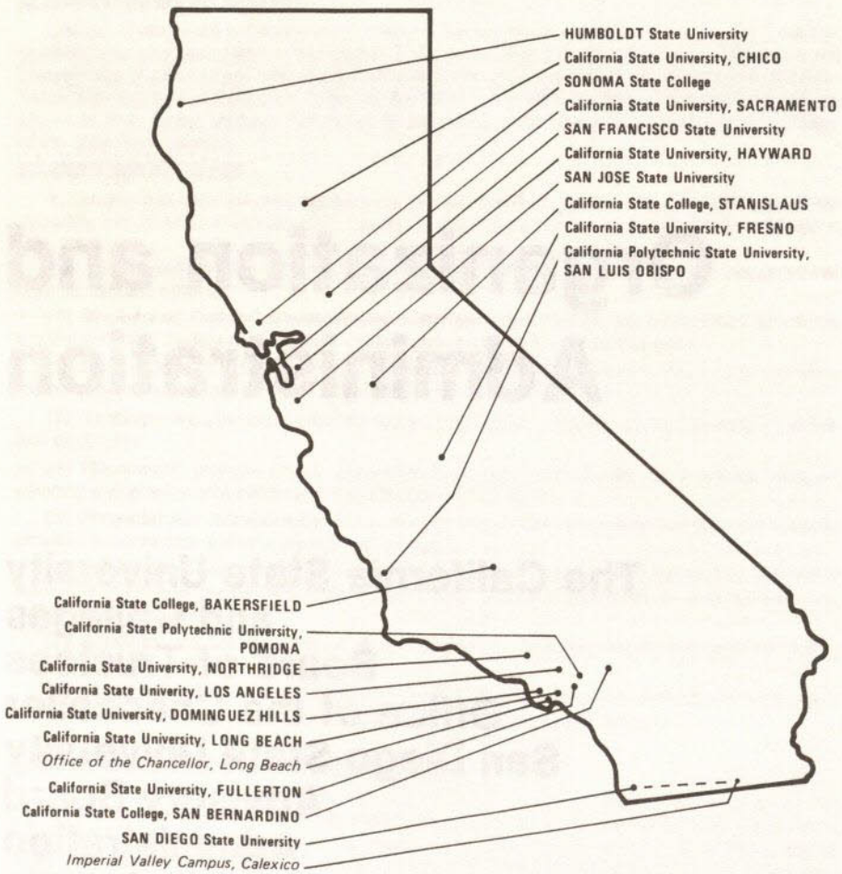
Debts Owed to the Institution

From time to time the student may become indebted to the institution. This could occur, for example, when the student fails to repay money borrowed from the institution. Similarly, debts occur when the student fails to pay institution, dormitory, or library fees, or when the student fails to pay for other services provided by the institution at the request of the student. Should this occur, Sections 42380 and 42381 of *Title 5* of the *California Administrative Code* authorize the institution to withhold "permission to register, to use facilities for which a fee is authorized to be charged, to receive services, materials, food or merchandise or any combination of the above from any person owing a debt" until the debt is paid. For example, under these provisions the institution may withhold permission to register, and may withhold other services, such as grades and transcripts. If a student believes that he or she does not owe all or part of a particular fee or charge, the student should contact the Controller's office. The Controller will review the pertinent information, including information the student may wish to present, and will advise the student of his conclusion with respect to the debt.

Organization and Administration

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

The California State University and Colleges



The California State University and Colleges

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.

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 1977 totaled approximately 300,000 students, who were taught by a faculty of 17,000. Last year the system awarded over 54 percent of the bachelor's degrees and 34 percent of the master's degrees granted in California. Almost 625,000 persons have been graduated from the nineteen campuses since 1960.

Average Annual Costs and Sources of Funds per Full-time Equivalent* Student in The California State University and Colleges

The 19 campuses of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. For the 1977-78 year, the total cost of operation is $825 million, which provides continuing support for 236,370 full-time equivalent (FTE*) students. This results in an average cost per FTE student of $3,491 per year. Of this amount, the average student pays $297. Included in this average student payment is the amount paid by nonresident students. The remaining $3,194 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:

1977/78 Projection of Total Costs of Campus Operation

(Including Building Amortization)

Projected Enrollment: 236,370 FTE

Source	*Amount*	*Average Cost Per Student (FTE)**	*Percentage*
State Appropriation (Support)	$671,764,609	$2,842	81.4
State Funding (Capital Outlay)**	36,360,246	154	4.4
Student Charges	70,247,936	297***	8.5
Federal (Financial Aids)	46,732,894	198	5.7
Total	$825,105,685	$3,491	100.0

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

** The system's wide range of facilities and equipment on the 19 campuses is currently valued at approximately $1.4 billion, excluding the cost of land. Amortized over a 40-year period, they are valued at $154 per FTE student.

*** The average costs paid by a student include the student services fee, health facilities fee, college union fee, student body fee, and the nonresident tuition. This amount is derived by taking the total of all student fees and dividing by the total full-time equivalent student enrollment. Individual students may pay more or less than $297 depending on whether they are part-time, full-time, resident or nonresident students.

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Speaker of the Assembly Sacramento 95814

The Hon. Wilson C. Riles ..... 721 Capitol Mall
State Superintendent of Public Instruction Sacramento 95814

Dr. Glenn S. Dumke ..... 400 Golden Shore
Chancellor of The California State University and Colleges Long Beach 90802

Appointed Trustees

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

Mr. Charles Luckman (1982)
9200 Sunset Blvd.,
Los Angeles 90069

Mr. William O. Weissich (1977)
55 Professional Center Parkway,
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Mr. Robert A. Hornby (1978)
810 South Flower St.,
Los Angeles 90017

Mr. Wendell W. Witter (1979)
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San Francisco 94106

Mr. Gene M. Benedetti (1978)
8990 Poplar Ave.,
Cotati 94952

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2160 Royale Rd., Suite 20,
Sacramento 95815

Mrs. C. Stewart Ritchie (1980)
1064 Creek Dr.,
Menlo Park 94025

Mr. Frank P. Adams (1981)
235 Montgomery St., Suite 1922,
San Francisco 94104

Mr. Richard A. Garcia (1979)
31293 E. Nine Dr.,
Laguna Niguel 92677

Mr. Dean S. Lesher (1981)
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Walnut Creek 94598

Dr. Claudia H. Hampton (1982)
450 N. Grand, Rm. G353,
Los Angeles 90012

Dr. Mary Jean Pew (1983)
2021 N. Western Ave.,
Los Angeles 90027

Mr. Willie J. Stennis (1983)
3947 Landmark,
Culver City 90230

Ms. Kathleen A. Carlson (1978)
4383 Graduate School of Management
UCLA—405 Hilgard Ave.,
Los Angeles 90024

Dr. Juan Gomez-Quinones (1984)
Chicano Studies Center, University of California, Los Angeles
405 Hilgard Ave.,
Los Angeles 90024

Mr. John F. O'Connell (1980)
P.O. Box 3965,
San Francisco 94119

Ms. Blanche C. Bersch (1984)*
10889 Wilshire Blvd., Suite 628,
Los Angeles 90024

Mr. Michael R. Peevey (1985)*
215 Market St., Suite 930,
San Francisco 94105

* Appointment subject to State Senate confirmation.

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Chairman

Mr. Frank P. Adams
Vice Chairman

Chancellor Glenn S. Dumke
Secretary-Treasurer

The California State University and Colleges

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9001 Stockdale Highway
Bakersfield, California 93309
Dr. Jacob P. Frankel, President
(805) 833-2011

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1st & Normal Streets
Chico, California 95929
Dr. Stanford Cazier, President
(916) 895-5011

California State University, Dominguez Hills
Carson, California 90747
Dr. Donald R. Gerth, President
(213) 515-3300

California State University, Fresno
Shaw and Cedar Avenues
Fresno, California 93740
Dr. Norman A. Baxter, President
(209) 487-9011

California State University, Fullerton
Fullerton, California 92634
Dr. L. Donald Shields, President
(714) 870-2011

California State University, Hayward
Hayward, California 94542
Dr. Ellis E. McCune, President
(415) 881-3000

Humboldt State University
Arcata, California 95521
Dr. Alistair W. McCrone, President
(707) 826-3011

California State University, Long Beach
1250 Bellflower Boulevard
Long Beach, California 90840
Dr. Stephen Horn, President
(213) 498-4111

California State University, Los Angeles
5151 State University Drive
Los Angeles, California 90032
Dr. John A. Greenlee, President
(213) 224-0111

California State University, Northridge
18111 Nordhoff Street
Northridge, California 91330
Dr. James W. Cleary, President
(213) 885-1200

California State Polytechnic
University, Pomona
3801 West Temple Avenue
Pomona, California 91768
Dr. Hugh O. LaBounty, Jr., Acting President
(714) 598-4592

California State University, Sacramento
6000 J Street
Sacramento, California 95819
Dr. James Bond, President
(916) 454-6011

California State College, San Bernardino
5500 State College Parkway
San Bernardino, California 92407
Dr. John M. Pfau, President
(714) 887-7301

San Diego State University
5300 Campanile Drive
San Diego, California 92182
Dr. Trevor Colbourn, Acting President
(714) 286-5000
Imperial Valley Campus
720 Heber Avenue
Calexico, California 92231
(714) 357-3721

San Francisco State University
1600 Holloway Avenue
San Francisco, California 94132
Dr. Paul F. Romberg, President
(415) 469-2141

San Jose State University
125 South Seventh Street
San Jose, California 95192
Dr. John H. Bunzel, President
(408) 277-2000

California Polytechnic State
University, San Luis Obispo
San Luis Obispo, California 93407
Dr. Robert E. Kennedy, President
(805) 546-0111

Sonoma State College
1801 East Cotati Avenue
Rohnert Park, California 94928
Dr. Peter Diamandopoulos, President
(707) 664-2880

California State College, Stanislaus
800 Monte Vista Avenue
Turlock, California 95380
Dr. A. Walter Olson, President
(209) 633-2122

Office of the Chancellor
The California State University and Colleges

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

Dr. Glenn S. Dumke ..... Chancellor
Mr. Harry Harmon ..... Executive Vice Chancellor
Mr. D. Dale Hanner ..... Vice Chancellor, Business Affairs
Dr. Alex C. Sherriffs ..... Vice Chancellor, Academic Affairs
Dr. Marjorie Downing Wagner ..... Vice Chancellor, Faculty and Staff Affairs
Mr. Mayer Chapman ..... General Counsel

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Howard L. Chernoff
George H. Foster
Leroy A. Grissom
Yvonne W. Larsen
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Mrs. Helen Fite ..... President, San Diego Branch, American Association of University Women
Daniel F. Bamberg ..... President, San Diego State University Alumni Association
Hewes Bell ..... President, San Diego State University Aztec Athletic Foundation

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Acting Vice President for Academic Affairs ..... Albert W. Johnson
Vice President for Business and Financial Affairs ..... William L. Erickson
Dean of Student Affairs ..... Daniel B. Nowak
Acting Director of University Affairs ..... Paul J. Steen

Administration

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- Administrative Assistant ..... Barbara J. Erickson
- Coordinator of Affirmative Action ..... Jane Sprague

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    - Manager, Instructional Computer Services ..... Robert W. Swanson
    - Supervisor, Operations ..... Angel Martinez
    - Associate Director, Institutional Research ..... Robert L. McCornack
    - Manager, Administrative Computer Service .....
- Dean of Faculty Affairs ..... George C. Gross
- Dean of Academic Resources ..... Adrian J. Kochanski
- Assistant Vice President for Academic Programs ..... Shirley Anne Rush
- Curriculum Assistant to the Vice President for Academic Affairs ..... Jane K. Smith
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  - Director of Summer and Special Programs ..... Larry G. Cobb
  - Director of Extension ..... Lawrence A. Clinger
  - Director of Military Education Programs ..... David J. Hunter
  - Director of Conferences and Professional Programs ..... Linda Worobow
  - Director of American Language Program ..... Ann M. Johns
  - Director of Retired Adult Education Programs ..... Peggy Covert
  - Director of Academy for Theatre Arts ..... Paul Gregory
- Director of Learning Resource Center ..... William A. Broderick
- Director of Library Services ..... Louis A. Kenney

Office of the Director of University Affairs
- Special Assistant ..... Thomas P. D'Agostino
- Administrative Assistant ..... Leslie F. Yerger
- Coordinator of Design Center ..... Jerald B. Elliott
- Coordinator of News Service ..... Eric P. Warn
- Coordinator of Speakers Bureau ..... Richard Moore
- General Manager, KPBS/TV-FM ..... Paul J. Steen
- Aztec Athletic Foundation Director ..... Clifton J. Baxter
- Chief Development Officer ..... Karl Virtue
- Records Supervisor ..... Darlene Dore

Chairman of The Senate (Faculty) ..... Robert C. Detweiler

Office of the Dean of Student Affairs
- Assistant to the Dean ..... Stephen F. Barnes
- Ombudsman ..... Donald F. Harder
- Associate Dean ..... Carl F. Emerich
  - Coordinator of Aztec Center ..... James B. Carruthers
  - Director of Disabled Student Services ..... Elizabeth A. Bacon
  - Director of Student Resource and Information Center ..... W. Edward Morton
  - General Counselor of International Students ..... Winifred Wong Chase
  - Judicial Coordinator ..... Carol M. Goerke

- Associate Dean ..... E. June Warren
- Director of Admissions and Records ..... Frank A. Medeiros
  - Assistant Director of Office Services ..... Katherine Robens
  - Assistant Director of Student Services .....
  - Evaluations Officer ..... Carolyn S. Earle
- Director of Relations with Schools and Colleges ..... Earl Peisner
  - School Relations Officer ..... Joseph A. Gasperetti
- Director of Educational Opportunity & Minority Programs ..... Augustine S. Chavez
- Director of Financial Aid ..... Thomas R. Pearson
  - Scholarship Adviser ..... Kathleen Ross
- Director of Veterans Affairs ..... Edward R. Mendez
- Director of Center for Counseling Services & Placement ..... Marvalene H. Styles
- Director of Health Services ..... David L. Bearman, M.D.
- Director of Housing and Residential Life ..... Michael B. Hoctor

Office of the Vice President for Business and Financial Affairs
- Assistant to the Vice President ..... Frank D. Aronoff
- Internal Review Analyst ..... Marjorie Pascoe Peet
- Director of Physical Resources ..... Margaret L. Gilbert
- Director of Business Management ..... Carolyn E. Kessler
  - Purchasing and Contract Officer ..... Willa D. Roelofsz
  - Business Services Officer ..... W. J. Luecht
- Director of Personnel Services ..... Lois W. Sisson
  - Assistant to the Director—Operations and Special Programs ..... Jerome P. Ledin
  - Assistant to the Director—Classification ..... M. Susan Lundsten
  - Assistant to the Director—Employee Training and Development ..... Mary Lou Walden-Beach
  - Coordinator—Employment and Related Services ..... Melba Elegino-Dave
  - Manager—Payroll Services ..... D. Jane Fitzgerald
- Director of Budget and Planning ..... Kenneth B. Perry
  - Budget Analyst-General Fund ..... Suzanne E. Lowell
  - Budget Analyst-Special Funds ..... David Fichman
- Controller ..... Grant L. Nielsen
  - Cashiering Supervisor ..... Jean Barton
  - Accounting Supervisor ..... Flavella G. Orton
  - Financial Aid Accounting Supervisor ..... Dan Gilbreath
- Director of Facilities Planning and Management ..... Charles H. Johnson
  - Associate Director ..... Timothy V. Hallahan
  - Manager of Physical Plant ..... A. E. McGinnis
  - Coordinator of Architectural Services ..... Dennis J. Becker
  - Energy Coordinator ..... Robert E. Downen
- Chief of Public Safety ..... John J. Carpenter

Auxiliary Organizations

San Diego State University Foundation
- President ..... Trevor Colbourn
- Vice President ..... James W. Cobble
- Manager ..... Robert L. Benshoff

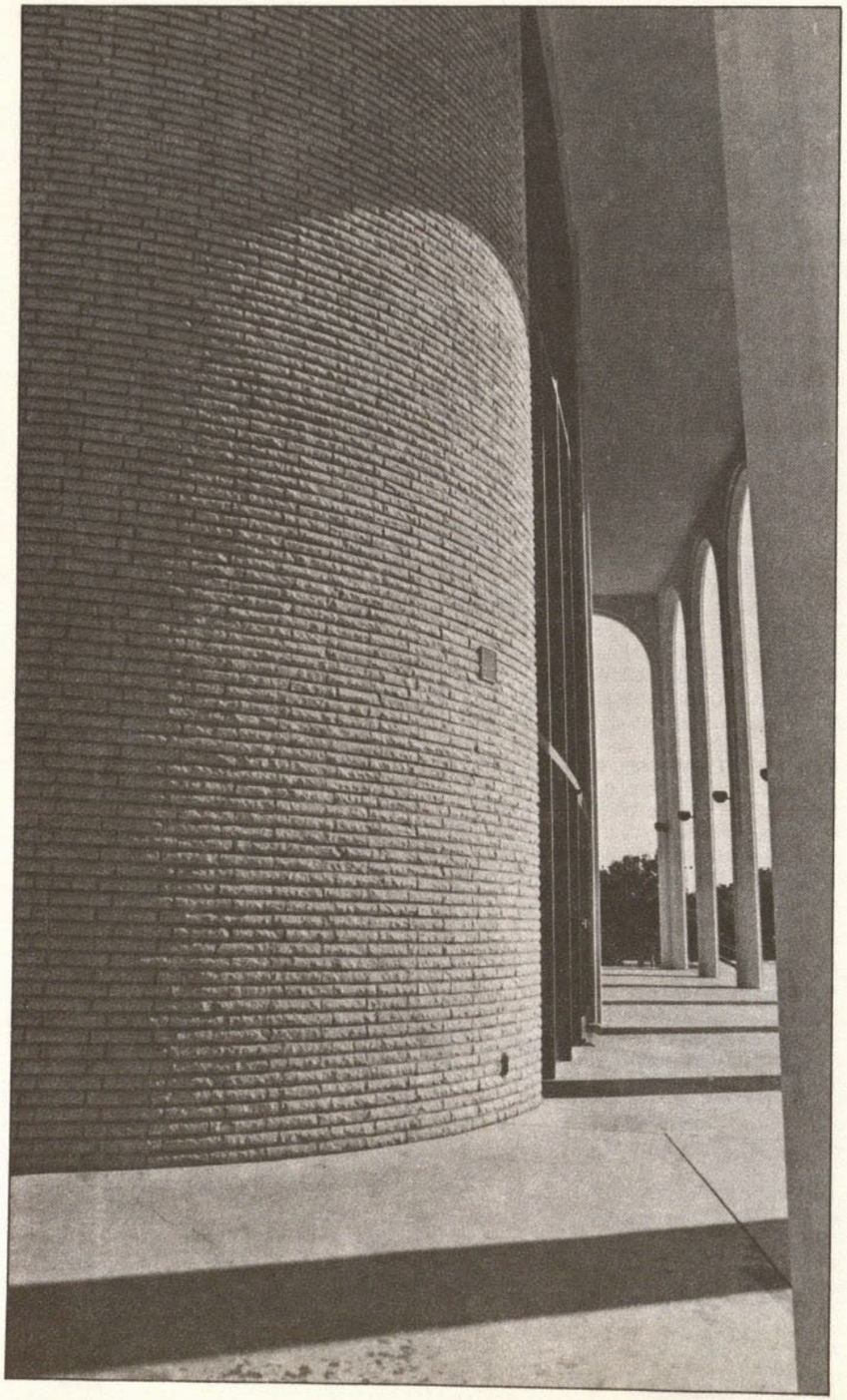
Aztec Shops, Ltd.
- President ..... Trevor Colbourn
- Manager ..... Harvey J. Goodfriend

The Associated Students of San Diego State University
- President ..... Seena Hollander
- Business Manager ..... Harvey J. Goodfriend

Colleges, Schools and Departments

	Chairs
COLLEGE OF ARTS AND LETTERS	Frank Marini, Dean
Associate Dean	Elsie B. Adams
Assistant Dean for Student Affairs	Frances Foster
Afro-American Studies	James N. Kerri
American Indian Studies	John Rouillard
Anthropology	Larry L. Leach
Classical and Oriental Languages and Literatures	E. N. Genovese
Economics	Dean O. Popp
French and Italian Languages and Literatures	Elizabeth Jackson
Geography	Warren Johnson
Germanic and Slavic Languages and Literatures	Leland Fetzer
History	Robert C. Detweiler
Linguistics	Glendon Drake
Literature	Fred Moramarco
Philosophy	Rosemary Lauer
Political Science	Betty Nesvold
Religious Studies	Christine Downing
Sociology	C. Dale Johnson
Spanish and Portuguese Languages and Literatures	Gustav V. Segade
Women's Studies Program	Marilyn Boxer
COLLEGE OF PROFESSIONAL STUDIES	Jerry Mandel, Dean
Associate Dean	Millard Biggs
Associate Dean	George Hutchinson
Assistant Dean for Student Affairs	Lois Kessler
Coordinator of Physical Facilities	Fred Hammond
Aerospace Studies	Lt. Col. Carl Lasiter
Art	Frederick J. Orth
Athletics	O. Kenneth Karr, Jr.
Communicative Disorders	Harriet G. Kopp
Drama	Gordon Howard
Family Studies and Consumer Sciences	David Fulcomer
Health Science and Safety	Ralph Grawunder
Industrial Studies	Harold L. Marsters
Journalism	Frederick Whitney
Mexican-American Studies	Jose Villarino (Acting)
Music	J. Dayton Smith
Nursing	Dolores A. Wozniak
Physical Education	Richard W. Wells
Public Administration and Urban Studies	James D. Kitchen
Recreation	Donald Peterson
Speech Communication	Stephen King
Telecommunications and Film	Kenneth Jones
COLLEGE OF SCIENCES	Donald Short, Acting Dean
Associate Dean	James Neel
Associate Dean	John D. Schopp
Assistant Dean for Student Affairs	Celia Marshak
Astronomy	Burt Nelson
Biology	Boyd Collier
Botany	Jochen Kummerow, Acting
Chemistry	Walter Jones
Geological Sciences	Richard W. Berry
Mathematical Sciences	Edmund L. Deaton
Microbiology	Beatrice L. Kelly
Natural Science	James Mathewson
Physics	Stephen B. W. Roeder
Psychology	John Grossberg
Zoology	Michael D. Atkins

OFFICE OF THE DEAN OF THE GRADUATE DIVISION AND RESEARCH	James W. Cobble, Dean
Associate Dean	Irving Alan Sparks
Associate Dean	Lawrence Feinberg
Assistant Dean	Arthur W. Schatz
SCHOOL OF BUSINESS ADMINISTRATION	Robert P. Hungate, Dean
Associate Dean	Maurice L. Crawford
Associate Dean for Graduate Studies	William F. Barber
Assistant Dean for Student Affairs	Penny L. Wright
Accounting	Allan Bailey
Finance	Pieter A. Vandenberg
Information Systems	William Spaulding
Management	William R. Sherrard
Marketing	Robert Haas
SCHOOL OF EDUCATION	Tomas A. Arciniega, Dean
Associate Dean	Robert R. Nardelli
Assistant Dean for Student Affairs	Jaime Lujan
Coordinator, Clinical Training Center	Joan F. Curry
Coordinator, Counselor Education	John D. Chamley
Coordinator, Educational Administration	Ray Latta
Coordinator, Educational Technology and Librarianship	Patrick J. Harrison
Coordinator, Elementary Education	James M. Kaatz
Coordinator, Graduate Programs	Peggy Hawley
Coordinator, Higher Education Programs	Robert D. Smith, Jr.
Coordinator, Secondary Education	John G. McLevie
Coordinator, Special Education	Donald Doorlag
SCHOOL OF ENGINEERING	Glen L. Martin, Dean
Assistant Dean for Student Affairs	Basil Ohnysty
Aerospace Engineering	J. F. Conly
Civil Engineering	Howard H. Chang
Electrical Engineering	Mao-Shiu Lin
Mechanical Engineering	George T. Craig
SCHOOL OF SOCIAL WORK	Harry Butler, Dean
Associate Dean	Glenn Haworth
Assistant Dean for Student Affairs	E. Frederick Anderson
OFFICE OF THE DEAN OF THE UNIVERSITY COLLEGE	A. G. Branan, Acting Dean
Associate Dean	Dan D. McLeod
Associate Dean	Carole Rother
Director of Testing	Herman Roemmich
Test Officer	Michael A. Irwin
IMPERIAL VALLEY CAMPUS	Linda McAlister, Dean
Associate Dean	Katherine Polich, Acting
Assistant Dean for Student Affairs	Reynaldo Ayala, Acting
Executive Assistant to the Dean	Alma Tabor



General Information

General Information

San Diego State University

San Diego State University was founded on March 13, 1897 for the training of elementary school teachers. The seven faculty and ninety-one students of the 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 1935, the Legislature dropped the word "Teachers' " from the title and permitted the expansion of degree programs into areas other than teacher preparation. Walter R. 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 campus grew phenomenally under the direction of President Hepner and his successor, Malcolm A. Love (1952-1971), until it is now one of the 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 served as Acting President for 1971-1972, and Brage Golding, President of Wright State University in Ohio, became the University's fifth president in 1972. Upon the resignation of President Golding, Vice President Trevor Colbourn became Acting President for the 1977-78 academic year. After a spirited campaign by the Alumni Association, legislation was passed in 1973 which changed the institution's title to that preferred by the community: San Diego State University.

In recent years a number of new buildings have been added to accommodate the 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 and new Art and Humanities classroom buildings are the most recent additions to the campus.

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 seventy-two areas, a master's in fifty-three and the doctorate in three. A remarkable eighty-eight percent of the permanent teaching faculty possess the doctorate in those disciplines where it is the standard terminal degree.

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

Institutional and Financial Assistance Information

The following information concerning student financial assistance may be obtained from Thomas R. Pearson, Financial Aids, CL-122, 286-6326.

1. Student financial assistance programs available to students who enroll at San Diego State University;
2. The method by which such assistance is distributed among student recipients who enroll at San Diego State University;
3. The means, including forms, by which application for student financial assistance is made; the requirement for accurately preparing such applications; and the review standards employed to make awards for student financial assistance; and
4. The rights and responsibilities of students receiving financial assistance.

The following information concerning the cost of attending San Diego State University is available from Thomas R. Pearson, Financial Aids, CL-122, 286-6326.

This information includes:

1. Tuition fees;
2. Estimated costs of books and supplies;
3. Estimates of typical student room and board costs or typical community costs; and
4. Any additional costs of the program in which the student is enrolled or expresses a specific interest.

Information concerning the refund policy of San Diego State University for the return of unearned tuition and fees or other refundable portions of costs is available from Grant L. Nielsen, Controller, Business Affairs, AD-320D, 286-6301.

Information concerning the academic programs of San Diego State University may be obtained from the Office of the Vice President for Academic Affairs, AD-206, 286-6881.

This information may include:

1. The current degree programs and other educational and training programs;
2. The instructional, laboratory, and other physical plant facilities which relate to the academic program;
3. The faculty and other instructional personnel; and
4. Data regarding student retention at San Diego State University and, if available, the number and percentage of students completing the program in which the student is enrolled or expresses interest.

University Library

Librarians

Emeritus: Adams, Haynes, Kinsey, McAmis, Murdock, Schalles
Director: Kenney
Associate Director: Dickinson, F.
Librarians: Leerhoff, Pease, Szabo
Associate Librarians: Barclay, Chan, Dintrone, Gwinup, Harrington, Hoover, Samples
Senior Assistant Librarians: Coleman, Crisley, Dickinson, P., Goodwin, Goyne, Granrud, Greene, Harkanyi, Johns, Martinez, Moore, Neyndorff, Polsson, Phillips, Posner, Sandelin, Shira, West
Assistant Librarians: Colston, Fikas, Lamb

The centrally located Malcolm A. Love Library, with its open stacks, adjoining study areas, and many individual carrells, 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 652,000 volumes including books and bound periodicals, and 264,000 bound government documents. Additional resources include 1.2 million microfiche and microopaque cards, 36,000 reels of microfilm, 7,800 college catalogs, 65,000 items of curriculum materials, 27,000 scientific reports, 600,000 archival papers, and 3,200 phonograph records. The library receives 13,800 periodical and serial titles, excluding government documents. It is a depository for United States and California government publications. It receives all United Nations and Organization of American States publications, as well as many publications of other national and international bodies.

Significant research collections in the social sciences and humanities include Asian studies, business, medieval history, American history, Civil War history, Latin American history, colonial French African history, American literature, English literature (sixteenth and eighteenth centuries), music of the Middle Ages and the nineteenth century, medieval philosophy, American philosophy, and public administration. Strong research and special collections in the sciences cover the history of science, paleontology, biology, orchidology, astronomy, the history of astronomy, mathematics, chemistry, geology, the geologic history of Pacific Ocean invertebrate fauna, and the geology of San Diego County and Baja California.

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

Among the conveniences provided the users of the library are a locational information desk in the main lobby, the periodicals reading room, and the microforms and listening center; numerous inexpensive photocopying machines including one for microfiche and microfilm; an inexpensive 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, special facility for the visually handicapped, and phonographic records; and most of the required textbooks at the limited-loan (reserve) room of the library.

Faculty Office Hours

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

National Honor Societies

Phi Beta Kappa and Phi Kappa Phi are two of the national honor societies recognizing academic excellence for undergraduate students. In addition, there are over fifteen national honorary societies which accord recognition to students who demonstrate superior scholarship and leadership in specific academic fields.

Accreditation

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

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

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

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

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 72 areas, the master's degree in 53 areas, and the Ph.D. in three areas.

Degrees and Certificates

San Diego State University offers the following degrees and certificates:

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

Nondegree programs leading to the Certificate in Applied Linguistics, Construction Practices, Criminal Justice Administration, Fire Protection Administration, Human Resources Management, Labor Relations, Materials Management, Personnel Administration, and Public Administration are offered.

Types of Curricula Offered

San Diego State University offers the following types of curricula:

Undergraduate Curricula. Undergraduate curricula provide the following opportunities for study:

(1) Liberal arts and sciences: Curricula in the academic major fields, leading to the Bachelor of Arts degree in liberal arts and sciences.

(2) Applied arts and sciences: Curricula in major fields leading to the Bachelor of Science, Bachelor of Arts or Bachelor of Music degree in applied arts and sciences.

(3) Professional curricula: The School of Business Administration offers the Bachelor of Science degree in business administration with majors in seven fields; the School of Engineering offers the Bachelor of Science degree in engineering with majors in four fields; and the School of Education offers curricula in teacher education leading to graduate credentials at all levels of public school teaching.

The Department of Communicative Disorders offers curricula leading to graduate credentials in Education of the Deaf and Deaf-Blind; clinical certification and graduate credentials in speech pathology, audiology and communicative disorders.

Nursing offers the Bachelor of Science degree in Nursing and offers a curriculum leading to registered nurse licensure and public health nurse credential.

(4) Preprofessional and nondegree curricula: Programs are offered in predentistry, prelegal, and premedical, leading to transfer to professional schools. Nondegree programs are offered in public service, leading to the Certificate in Criminal Justice Administration or the Certificate in Public Administration. The Air Force offers an ROTC program, leading to a commission in the Air Force Reserve.

Graduate Curricula. The Graduate Division offers curricula leading to the Master of Arts or Master of Science degree in a wide variety of fields, the Master of Business Administration, the Master of City Planning, the Master of Public Administration, the Master of Social Work, and the Doctor of Philosophy in chemistry, ecology and genetics.

Imperial Valley Campus, Calexico

Faculty

Emeritus: Rodney, Spencer
Dean: McAlister
Associate Dean (Acting): Polich, K.
Assistant Dean for Student Affairs (Acting): Ayala, R.
Executive Assistant to the Dean: Tabor
Professors: Baldwin, McAlister (Dean), Smith
Associate Professors: Ayala, R. (Acting Assistant Dean for Student Affairs), Franklin, Harmon, Polich, J., Wilson
Assistant Professors: Baral, Hill, King, Meister, Polich, K. (Acting Associate Dean), Rice, E., Stiegler (Media Coordinator), Varela-Ibarra
Lecturers: Allen, Anderson, Armenta, Ayala, M. (Librarian), Barber, Bernardi, Bischke, Blek, Bragg, Childers, Cox, Croutch, Dolenar, Ferguson, Gonzalez, Hinds, Huerta, Jones, Lazer, Lorenzen, Martinez, Puddy, Rice, D., Spaulding, Stemple, VonWerlhof

Offered by the Imperial Valley Campus

Degrees

Major in art with the A.B. degree in applied arts and sciences.
Major in criminal justice administration with the B.S. degree in applied arts and sciences.
Major in English with the A.B. degree in liberal arts and sciences.
Major in history with the A.B. degree in liberal arts and sciences.
Major in Latin American studies with the A.B. degree in liberal arts and sciences.
Major in liberal studies with the A.B. degree in applied or liberal arts and sciences.
Major in social science with the A.B. degree in liberal arts and sciences.
Major in Spanish with the A.B. degree in liberal arts and sciences.

Teaching Credentials

Basic
Multiple subject (elementary)
Single subject (secondary)
Specialist
Special education—in conjunction with the School of Education
Bilingual/cross-cultural—in conjunction with the School of Education

Special certificate and master's programs are offered in conjunction with the College of Extended Studies or with other appropriate colleges and schools of San Diego State University. For further information see the Academic Handbook of the Imperial Valley Campus.

General Information

The Imperial Valley Campus is a two-year upper division campus of San Diego State University serving the desert area of southeastern California. It is accredited as an integral division of SDSU and operates under the same academic calendar. Established in 1959 by an act of the State legislature, the campus is located on the Mexican border in Calexico in the Imperial Valley. Offering only the last two years of undergraduate education as well as a fifth year credential program for teacher preparation, the campus accepts transfer students from either community colleges or other colleges who have at least 56 units. As a small campus with a low faculty/student ratio, Imperial Valley Campus offers students the advantages of small classes and individual contact with the faculty. The campus schedules its classes to meet once a week in three-hour blocks so that students who work full time can earn 9-12 units a semester by attending classes one or two times a week. Classes are also offered on the weekends.

The location on the Mexican border provides the opportunity for involvement in a bicultural environment. There are many opportunities to participate in the cultural life of Mexicali, just across the border, a city of more than 400,000 people. There are also many opportunities on the U.S. side of the border to be involved in a bilingual/cross-cultural setting. There is an exchange program for students between the Imperial Valley Campus and the two universities in Mexicali (Universidad Autonoma de Baja California and Centro de Ensenanza Tecnico y Superior) which allows students to take classes at either of the participating universities and receive credit at their home institution. Among the faculty are professors with Latin American emphases in history, geography, sociology, Spanish, art and anthropology. The faculty is also augmented with other Latin American specialists from Mexico and from the San Diego campus.

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

Facilities

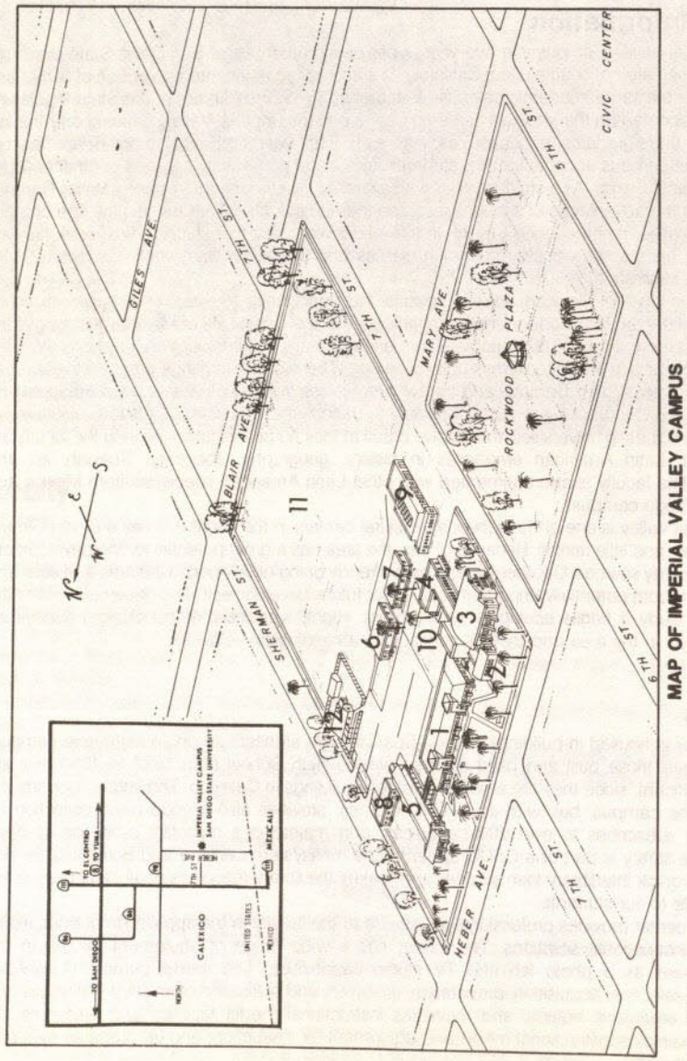
The campus is housed in buildings of early Spanish style architecture on an eight-acre campus. The buildings are those built and used as the Calexico High School from 1927 to 1953 and are historically significant, since they are among the oldest buildings in Calexico. The library supports the curriculum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

The media center provides professional assistance to the faculty in the application of educational technology to instructional situations. The center has a wide range of equipment for use in the classroom as well as a photo lab and TV studio capabilities. The media center (1) provides consultation on selection, acquisition, preparation, utilization, and evaluation of instructional media and equipment; (2) organizes, equips, and maintains instructional media facilities and resources; (3) provides and maintains instructional media and equipment for instruction; and (4) prepares materials required for instruction.

Admission, Registration, and Commencement

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

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



MAP OF IMPERIAL VALLEY CAMPUS

LEGEND

1. Central Classroom Building
2. Music Department
3. Auditorium
4. Library
5. Art and Language Department
6. Administration Building
7. Faculty Offices
8. Faculty Offices
9. Shipping, Receiving, and Shops
10. Outdoor Theatre
11. Recreation Field
12. Student Union

Special Programs and Services

Teaching and Learning Council

The Teaching and Learning Council, composed of seven faculty members, two students, and two administrators, was originally established by the Faculty Senate in 1973 and reconstituted with its present membership and mission in 1976. Its overall function is to encourage, facilitate, and contribute to the continuing improvement of the instructional process at San Diego State University through faculty and instructional development. In pursuit of the goal, it initiates and sponsors programs for both regular faculty and graduate teaching assistants. These include workshops, symposia, seminars, and lectures, with an emphasis on innovative approaches to teaching, learning and curriculum, as well as a continuing concern for the strengthening of traditional approaches. Some of these activities are offered in conjunction with the Instructional Development Program. The Council administers the Presidential Mini-Grant Program and certain other funds specifically set aside for the improvement of teaching.

Research Bureaus and Centers

University Center on Aging

The University Center on Aging is a program designed to (1) provide a multidisciplinary educational program and curriculum; (2) undertake research and evaluation activities in the aging arena; (3) provide technical assistance and agency consultation for the community; and (4) provide settings for field learning experience and community involvement for students.

The courses offered through the University Center on Aging do not lead to a degree in gerontology but give students an opportunity to take a variety of gerontology related courses across a number of schools or departments. Identified schools or departments which offer such courses are Psychology, Health Sciences and Safety, Biology, Sociology, Family Studies and Consumer Sciences, Social Work, Nursing, Physical Education, Education, and Recreation.

Students who are organizing these series of courses to meet their needs in the area of gerontology are encouraged to contact the chairs or deans of the noted schools and departments for more specific information on course offerings.

Edwin C. Allison Center for the Study of Pacific Faunas

R. Gordon Gastil, Director

The Allison Center seeks to encourage research in paleontology, geology, and related sciences, especially as they relate to the history of the earth around the Pacific Ocean. The Center provides a library which excels in reprint collections, and a working and storage collection of invertebrate fossils and modern molluscs. The Center provides office space for visiting scholars and a research working space for graduate and undergraduate students.

Asian Studies

Alvin D. Coox, Director

The Center for Asian Studies is an interdisciplinary organization in the College of Arts and Letters. Drawing upon faculty members from many fields, campus-wide, it performs such services as (1) securing and administering grants and other support for research and development in Asian studies; (2) coordinating and publicizing the activities of faculty 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-471, contains Asian periodicals, books, pamphlets, dictionaries and maps.

Business and Economic Research

Darryl Mitry, Director

The Bureau of Business and Economic Research is an organized research facility with a Director and Research Staff and is located in the School of Business Administration. The bureau facilitates research activities of the faculty of the School of Business Administration and coordinates other campus resources for multidisciplinary projects. The bureau is a full service member of the National Association of University Bureaus of Business and Economic Research and maintains a national survey research network.

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

Graduate students and faculty are encouraged to make use of bureau facilities.

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

M. C. Madhavan, Director

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

Bureau of Educational Research and Evaluation

Peggy Hawley, Director

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

European Studies Center

William O. Westervelt, 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

Adam Gifford, Director

The Institute of Labor Economics is a facility of the Department of Economics to encourage research by students and faculty in all phases of labor problems, collective bargaining, labor legislation and social security. The 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 and Ernst C. Griffin, Co-Directors

The Center for Latin American Studies seeks to encourage teaching and research related to Latin America. It has primary responsibility for the administration of the Latin American undergraduate and graduate degrees. In 1976, the U.S. Office of Education designated the center as one of the nation's ten Latin American language and area centers. In conjunction with this award, the center administers programs that focus on: (1) initiation of a problem-oriented approach to Latin American studies through the creation of courses dealing with urbanization and modernization of the area; (2) development of innovative methods of instruction in Spanish and Portuguese; (3) provision of services for the general public through the sponsorship of conferences, workshops, lectures and films. The center also assists in the development of the University library's Latin American holdings and has created a special collection of Latin American materials which is available in the center's reading room, SS-146.

Center for Marine Studies

Richard F. Ford, Director

The primary functions of the Center for Marine Studies are to coordinate and represent the multidisciplinary Marine Studies Program offered by departments within the University, to aid in the development of instructional, research, and public services aspects of the program, and to provide special 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, operation of the University's marine laboratory at Mission Bay, a boat operations program, and the University Diving Safety Program. The center is administered by a director, associate directors, and an executive committee consisting of faculty members elected from participating departments in the College of Sciences, the College of Arts and Letters, the College of Professional Studies, the School of Business Administration, and the School of Engineering. Additional information about the Marine Studies Program is available from the Center for Marine Studies office.

Paleobiology Council

Richard D. Estes, Director

An interdisciplinary research and teaching agency to explore the fossil record. Composed of faculty members from the departments of Anthropology, Geology, Natural 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. An interdisciplinary Special Major with an M.A. degree is available for which the Council does advising.

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.

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Public Economics

George Babilot, 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

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

Research in Economic Development

Ibrahim Poroy, Director

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

Social Science Research Laboratory

Richard Hofstetter, Director

The Social Science Research Laboratory (SSRL) supports and facilitates research and instruction in the social sciences. Organized in four functional sections—computational, survey research, data resources, and maps—the laboratory offers a variety of support capabilities and instructional services in the areas of statistical design and computer analysis of social data, survey research and polling activities, data documentation and access to a wealth of machine readable and published data sets, and cartographic products. SSRL maintains an active program of instructional demonstrations and consultation for faculty and students, as well as offering bundled and unbundled contract services in each of its sections.

Survey Research

Oscar Kaplan, Director

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

Computer Center

Harold K. Brown, Director

The Computer Center houses computing equipment and personnel which support the instructional, research and administrative activities of the University. The computing equipment consists of an IBM 360, model 50, with 393,216 bytes of core storage and a large array of peripherals; a DEC PDP 11/45, used primarily for instructional timesharing activities; and a smaller computer, an 8K IBM 1130, which supports the APL and FORTRAN languages and has a plotting capability. Three remote job entry sites are located strategically on campus where jobs are submitted to be processed on the IBM 360/50.

A dual CDC3300 located at the Chancellor's Office for statewide usage is available to campus users via a high speed data link. Over 70 timesharing terminals are strategically located throughout the campus and are available via dial-up telephone lines to either a DEC PDP 11/45 on campus or to the statewide timesharing system. Programming and data processing courses and courses related to some specialized applications of computers are offered by several departments within the University. Many of these courses have special purpose minicomputers devoted to their area.

San Diego State University Foundation

The Foundation was organized as a separate auxiliary in 1943 to assist the University in obtaining support for research and educational programs from outside funding agencies. Since then, 2,800 separate contracts and grants have been administered by the Foundation, and faculty and students are presently engaged in about 200 projects sponsored by some 20 outside agencies involving over $10,000,000. Such projects serve to enrich the teaching and research programs of the University, to develop further expertise of the faculty, to contribute new knowledge and to provide even greater public service than would otherwise be possible. The Foundation is governed by a Board of Directors consisting of faculty, students and administration, and is administered under general policies developed by the University and the Trustees.

Learning Resource Center

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

Audio-Visual Services provides support to faculty and staff in the selection, design, production and use of instructional materials and audio-visual equipment. Specific services include photography; graphics; location and studio video-taping of special events and of performance for feedback; selection, maintenance, and distribution of films and audio-visual equipment; and consultation on the design and use of instructional technology.

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

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

Financial Aid

Cost of Living

Each student should plan his budget based on individual needs. 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 maximum financial aid.

Estimated Expenses for the Academic Year

	Living off Campus	*Living on Campus*	*Commuting from Home*
Materials, service, student activity, student union fee, facilities fee	$ 192	$ 192	$ 192
Books and supplies	210	210	210
Personal	475	475	475
Room, board, health	2475	1620	- - -
Board, incidentals	- - -	- - -	850
Transportation	375	235	475
Total	$3727	$2732	$2202

In addition, full-time (15 units per semester) foreign students and out-of-state students pay an annual tuition of $1574. Typical expenses for married students without children average $5900 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 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.

Applicants for admission who also desire to apply for financial aid should read the instructions and fill out the ***Request for Financial Aid Application Materials*** postcard contained in the admissions application booklet. All financial aid applicants must also submit the ***Student Aid Application for California*** and the ***Financial Aid Form (FAF)***. Undergraduate applicants must also apply for the Basic Educational Opportunity Grant (BEOG); the FAF can be used to determine BEOG eligibility. These forms may be obtained from high school or college counselors.

As funds are limited, a student should complete all applications as early as possible.

California State Scholarships

Administered by the California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814. SAT scores are required for applicants for State scholarships. If students have not taken the SAT test they should register to take the test with the Test Office, Fifth Floor, Love Library. If students have taken the SAT test, they must request that their scores be sent to the California Student Aid Commission. Request forms are also available in the Test Office. California State scholarship application forms are available in the Scholarship Office during the annual application period, which for the 1978-79 academic year opens in December and ends February 1, 1978. Financial need must be shown for State scholarships. Renewals are granted for up to four years provided that the student is eligible to re-enroll in school.

California State Fellowships

California State Fellows may attend any California college or university accredited by the Western Association of Schools and Colleges and offering recognized graduate or professional degrees in the academic areas approved by the California Student Aid Commission. Fellowships may be used for graduate or professional work. Entering and currently enrolled students in graduate and professional schools are eligible to receive a State Graduate Fellowship. Fellowships are in the amount of tuition and/or required fees at the graduate or professional school the student will attend and may not be used for books, supplies, room, board, or other college expenses. Fellowships may be less than the full amount of tuition and fees in instances where the Commission determines that the student has need for less than a full tuition award because of his own or other resources. State Graduate Fellowships will range from $300 to full fees at the University of California and from $500 to full tuition and/or fees at independent colleges and are in the amount of fees charged at The California State University and Colleges, usually approximately $192. State Fellowships are granted for one academic year (September through June). They are awarded after consideration of both academic and financial characteristics. In determining whether or not financial need exists and in what amount, the Commission has developed standards of financial need assessment of each applicant as an individual in his own right. Financial need is determined by comparing the applicant's own estimate of his resources for the year with an annual college cost estimate developed by the Commission for each graduate and professional school. Budgets vary for single and married students and do give consideration for special factors which pertain to each applicant. Original application forms for the 1978-79 programs will be available from the Scholarship Office during December through mid-January, 1978. State Fellowships are renewable for up to three additional years. Renewal applications are automatically mailed to each State Graduate Fellowship recipient in mid-April. The deadline to submit applications for the 1978-79 academic year is February 6, 1978.

Scholarships and Fellowships Administered by Departments

During the 1976-77 academic year, approximately 378 students received scholarships, fellowships, grants, or stipends totaling about $550,000 through the various departments. Federal, state, and private industry support programs of this nature are largely directed to students doing graduate work or to students preparing for some special field of work. Students who have decided on some particular area of study should check with an adviser in the department of their major to determine what scholarship, fellowship, grant, or stipend support might be available to them.

Scholarships Administered for Students Selected by Donors

For the 1976-77 academic year, approximately 290 students received scholarships totaling about $116,000 for an average award of about $400 from donors who made their own selections and asked the University to administer the funds. These scholarships are generally from clubs and organizations helping students in areas of interest to that club or organization. Students should ask a club or organization of which they or members of their family are members if they sponsor scholarships.

Fellowships for Graduate School

As a general rule, students planning graduate work should inquire about graduate fellowship support from the graduate school to which they are applying. The San Diego State University Scholarship Office receives the annual announcements on most national awards including Danforth, Fulbright, Ford, Rotary, Rhodes, and Marshall scholarships. Students interested in fellowships of this type are encouraged to discuss their applications with members of the San Diego State University faculty who have themselves in the past received these fellowships. Scores from the Graduate Record Examination, Law School Admission Test, Admission Test for Graduate Schools of Business, Dental Admissions Test, or Medical Colleges Admission Test, as appropriate, are required in applying for most fellowships so students should take the appropriate test early in the fall of their senior year. Information concerning these tests may be obtained from the San Diego State University Test Office, Fifth Floor, Love Library.

San Diego State University Scholarships

Scholarship Philosophy and Eligibility Requirements

The University Scholarship Committee (USC) has adopted the philosophy that scholarships at San Diego State University should reward academic excellence and attract and retain excellent students. In keeping with this philosophy, the Committee established that, unless there were unusual and compelling circumstances, the eligibility requirements to apply for a scholarship are:

For Matriculated University Students:

a 3.00 grade point average or — in the absence of a 3.00 —

a 3.50 in the last 30 units of university work or a 3.25 in the last 60 units of university work.

For High School Seniors:

a 3.00 cumulative grade point average (excluding physical education and military science) for all work completed in the last three years of high school.

The Scholarship Application Process

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

The University Scholarship Committee Awards Program

Each departmental scholarship committee ranks up to ten scholarship applicants for the University Scholarship Committee Awards. Final selection is made by the Committee and is based on the academic excellence of these top-ranked students. The number of awards depends on funds available. For the 1977-78 academic year there were 65 awards of $400 each. The following scholarships were awarded (or have been designated for following years):

Anonymous H
Aztec Shops Ltd.
Daniel Berry Memorial
Fleet Foundation
Fletcher Foundation
Amelie Fontaine Memorial Scholarship
Fox Foundation
General Dynamics
Arthur C. Harris Scholarship Fund
William and Edna La Salle Memorial Scholarship
Foster S. Post Memorial Scholarship Fund
San Diego State University Annual Fund
San Diego State University Memorial Fund
San Diego State University Resources Allocation Committee
Robert Patterson Shields Foundation
Wilmia Tyler Trott Memorial Scholarship
Dewitt Bisbee Williams Memorial Scholarship Fund
Mr. and Mrs. John Zweck Memorial Scholarships

Department and School Scholarships

Certain scholarships have been donated to the University and are restricted to students in specific departments. Each departmental scholarship committee is asked to nominate a recipient and an alternate for each award from the applications of students in their department. Final approval of these nominations rests with the University Scholarship Committee. The following scholarships, averaging about $200, were awarded for the 1977-78 academic year (or have been designated for following years):

Accounting Department
American Society of Women Accountants
California Society of C.P.A.'s, Women's Auxiliary, San Diego Chapter
Edward K. M. Sue Memorial Scholarship

Art Department
Friends of Professor William Bowne Scholarship
California China Painters Art Association

School of Business Administration
Georgia Amsden Memorial
Anthony's Fish Grotto
California 1st Bank — Business Scholarship
Robert Hess Memorial
Alwin Morrison Memorial
Mayor's Bridges to Business

Communicative Disorders Department
Dorothy Baronofsky Memorial Scholarship
California State Association of Emblem Clubs and Nevada-Hawaii Clubs
Clairemont Women's Club
Paul Pfaff Scholarship
Sigma Alpha, Gamma Upsilon Chapter
Sigma Alpha, Zeta Pi Chapter

Drama Department
Jeweldean Brodie Scholarship
Sharon Crossley Memorial Scholarship
Sybil Elisa Jones Memorial Scholarship
Hunton Sellman Scholarship Fund
Henry Stanton Memorial Scholarship

Economics Department
Anonymous
Henry Cramer Scholarship
Sidney-Evans Basic Economics Education, Inc.
Walter Weiss

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

Electrical Engineering Department
Naval Ocean Systems Center (NOSC) Scholarships

School of Engineering
Alvarado Soils
American Concrete Institute
American Public Works Association
American Society of Civil Engineers
Association of California Water Agencies
California Council of Civil Engineers
California Society of Professional Engineers
California Society of Professional Engineers, Ladies' Auxiliary
Civil Engineering Faculty Scholarship
E. F. Cook and Associates, Ltd.
Employees of Woodward-Clyde and Associates
Engineering Alliance
Frank Hope Architects
James R. Libbey and Associates
S. Falck Nielsen Scholarship/Nielsen Construction
Craig Nothomb and Associates
Robert Nowak
Padre Dam Scholarship
San Diego Rock Producers Association
Society of American Military Engineers
Society of Plant Engineering
Testing Engineers of San Diego
Unit Masonry Association of San Diego
Robert Young Engineering
Zinser-Furby, Inc.

Family Studies and Consumer Sciences
La Mesa Women's Club

Finance Department
Robert F. Driver Co.

Geology Department
Baylor Brooks Scholarship Fund
Standard Oil Company of California
Union Oil Company

History Department
Copley Newspapers
D.C. and K.W. Stott Memorial Scholarship
Jon Sutherland Memorial Scholarship

Industrial Studies Department
California PTA

Journalism Department
Copley Newspapers
KFMB

Literature
D.C. and K.W. Stott Memorial Scholarship

Management Department
Personnel Management Association of San Diego

Marketing Department
American Marketing Association
Harry Callaway Scholarship
H. M. Stansbury

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

Nursing
Allstate Foundation

Blue Cross of Southern California
Lottie E. Olberg Memorial Trust
Soroptimist Club of La Mesa
Volunteer Association of the Kaiser Foundation Hospital
United Commercial Travelers, California Ladies' Club

Physical Education Department
Miriam Paine Memorial Scholarship

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

Psychology Department
Dr. Edward Geldreich Fund

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

Religious Studies Department
Louis Lieblich Scholarship

College of Sciences
Mary Melton Kantor Memorial Scholarship

School of Social Work
Country Friends

Speech Communication Department
The Honorable Clair W. Burgener Scholarship
Percie Belle Senn Memorial Scholarships

Telecommunications and Film Department
KFMB
KGTV
Linkletter Foundation

Zoology Department
Crouch Scholarship for Avian Behavior

General Scholarships

In addition to the University Scholarship Committee Awards and the Department and School Scholarships, there are a number of general scholarships, recipients for some chosen by the University Scholarship Committee, for others, chosen by the donors on the basis of nominees sent to them by the University Scholarship Committee. The following scholarships were awarded for the 1977-78 academic year (or have been designated for following years):

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

Student Services

Center for Counseling Services and Placement

The Center delivers a broad range of services to enrolled students and other members of the University community, including individual and group counseling, workshops, teaching, training of preprofessionals, consulting and conducting needed and related research.

Also available is assistance to students in academic and educational planning, personal and emotional development, career and vocational planning, and educational and job placement.

The Center's services are free of charge and are available on a walk-in basis or by appointment from 8:00 a.m. to 7:00 p.m., Monday through Thursday, and 8:00 a.m. to 4:30 p.m. on Friday.

Health Services

As part of the program of student services, the University provides health services for the protection and maintenance of student health. These services are funded by student services fees and administered under the supervision of a medical director-administrator. A full-time physician staff is available to all students during the school year.

In addition to seven full-time and two part-time general practitioners, the medical staff includes one full-time gynecologist, a full-time surgeon, one full-time and three part-time dermatologists, a part-time internist, an orthopedic surgeon, a psychiatrist, a radiology group, and an ear, nose, and throat specialist.

Nurse practitioners are also available to assist physicians in providing consultation, treating minor physical conditions, and assisting in emergencies. Full-time nurses as well as x-ray and laboratory technicians are also on duty when school is in regular session.

Student Health Services is available to all students whether it be for emergency care, acute illness or chronic illness care.

Non-acute illness treatment is available by appointment.

Student Health Services provides emergency care to all faculty, staff and visitors. Health Services also provides special clinics in family planning, weight control, colds, nutrition and sexuality workshops, to name a few.

A health history is required from all students prior to admission. In addition to the health history, students must show proof of having had a tuberculin test at some time during the preceding year. For students who have not had such a test, the procedure may be completed without charge at Health Services. A physical examination is recommended for all entering students but is not required.

Student input is directed through the Student Health Advisory Board. The Board is a component of Associated Students. The Board members are involved in numerous health education projects and their advice is sought on program evaluation.

INSURANCE: The Associated Students offer a student health insurance program that is strongly recommended to students having no private medical insurance coverage. This insurance includes hospitalization benefits and specified medical and surgical services and may be purchased by the semester or by the year through Aztec Shops. An open enrollment period is available the first thirty days of each semester.

Audiology Diagnostic Center

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

Speech and Hearing Clinic

A speech and hearing clinic in which university students are trained in the application of speech, hearing and language pathology techniques, speech, lipreading, auditory training, manual communication, and language development for the hard of hearing and deaf. Tutorial services are available for hearing impaired students during the school year. The clinic operates through the school year and Summer Session II. The clinic serves those with speech, hearing and language problems at

all age levels. Because of limitations of staff, not all who apply can be admitted. A minimal fee is charged for diagnostic evaluation and therapy for outpatients but not for students enrolled at San Diego State University. Referrals may be made through agencies, school districts, health professionals, or as self-referrals.

Clinical Training Center

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

While the primary purpose of the Center is to train teachers and clinicians, a community service is offered to those who have problems with school achievement, speech, hearing, educational and vocational planning, and school adjustment. Referrals are ordinarily made by schools, other 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 program.

Student Resource and Information Center

The Student Resource and Information Center (SRIC) serves as the coordinating unit for resources and information regarding student programing efforts and student services. Formerly known as the Activities Office, the name was changed to reflect the department's broader-based relationship to the student community at San Diego State University.

Specifically, the Student Resource and Information Center is committed to identifying and making available the resources, information, professional personnel, and learning opportunities which allow students to relate most effectively to their academic, social, and governance responsibilities. We are committed to developing and supporting learning opportunities which facilitate the growth of students in groups, organizations, and as individuals.

Some of the projects and programs for which the Student Resource and Information Center is responsible include new student orientation, University liaison to the Associated Students, recreation, the Answer Van, and on-campus organizations.

One of the major priorities of the Student Resource and Information Center staff is to be available to assist students or University personnel in any way that they can. For information or assistance of any kind, feel free to stop by the Student Resource and Information Center, Campus Lab School 107, or call 286-5221.

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. Governance of the Center is by the Aztec Center Board, composed of nine students and one faculty member. Anyone is welcome to the meetings, which are open and frequent.

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 the following services: Aquatics Center/classes, The Backdoor, barbershop, banquet hall, bowling and billiards, conference rooms, Crafts Center/classes, General Store, information booth, lost and found, lounges, music rooms, record store (Wherehouse), organizations center, pocket billiards, post office, program rooms, Security Pacific Bank, snack bar, table tennis, ticket office, video equipment classes, campus-wide concessions, amusement equipment, Scripps Cottage.

Child Care Center Program

The Associated Students Child Care Program, a parent cooperative, provides child care for SDSU students' children between the ages of six months and six years who are in good health. First priority is given to families with the greatest financial need. Faculty/staff children are accepted on a limited basis.

Tuition for students is determined on a sliding fee scale based on family size and income.

The program is staffed by seven paid employees, volunteers, parent participants and Child Development students. Parents make a weekly contribution of time as teachers in the classroom and a monthly contribution on a working committee. They also have the opportunity to run for the Child Care Board which is composed of parents and other campus representatives.

The program is designed so that a variety of activities is offered which will foster the child's social, emotional, intellectual and physical development and help the child view himself/herself and the environment positively.

The hours of operation are 7:30 a.m. to 5:00 p.m. for the preschool center (children 28 months to 6 years) and noon to 5:00 p.m. for the infant center (children 6 months to 28 months).

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 free notary service, ticket sales, 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.

A note-taking service, weekly notes, taken with the approval of the faculty member are sold on a subscription basis.

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 14- and 10-meal options.

Alumni Association

Membership in the Alumni Association is open to any former student who attended regular or extended study classes for at least one semester, as well as faculty and staff.

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

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

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

The Association publication for alumni and friends of the University is the bimonthly *Aztec Report*.

Alumni and campus-related groups are invited to use the Alumni House, located at 5221 - 55th Street (corner of Hardy Avenue and 55th Street). The house is attractively furnished and has a garden area and barbecue for outdoor events.

For further information, call the Alumni House at (714) 286-6907.

Housing and Residential Life

Residence Halls

Accommodations for 1668 single students are available in six residence halls on campus. Five of the halls are three-story red-brick buildings accommodating 211 students each; the sixth is a high-rise building which accommodates 613 students. All of the halls are fireproof and air-conditioned throughout, with sleeping and study facilities on a two-students-per-room basis. Student governments and staff in each of the halls recommend standards for basic behavior in the residence halls. Participation in campus activities is encouraged.

Currently, the cost for room rental is approximately $818 to $986 per academic year. Two food service plans (10 or 14 meals per week) are offered in The Commons at additional charges presently ranging from approximately $276 to $426 per semester.

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 envelope to the University Housing Service. When the application is completed, it should be accompanied by a deposit and mailed to the Cashier's Office at the University. A request for a room is confirmed after the student is admitted to the University, when a contract is received, and the first payment is received as specified. A student may apply as early as a year in advance. Though consideration will be given to a student's request for an individual hall and roommate, a specific assignment cannot be guaranteed.

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

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

Off-Campus Housing

Adjacent to the campus is a nine-story privately owned and operated coeducational residence hall for San Diego State University students. Room and board are available for 568 students. For information apply directly to El Conquistador, 5505 Montezuma Road, San Diego 92115.

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

Greek Letter Organizations

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

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

Transportation and Parking

Bus transportation to the University, connecting with all areas of the metropolitan area, is available as follows:

Route 80/80A bus operates between Pacific Beach and Grossmont Shopping Center via Mission Beach, Pacific Beach, Fashion Valley, Mission Valley and the campus.

Route 11/11A/11B bus operates between Spring Valley and the campus via the Kensington area.

Route 15/115 bus operates between downtown San Diego (5th and 'E' Streets) and City of El Cajon via La Mesa and Parkway Plaza via the campus and Fletcher Hills, with express service to and from 48th Street.

Route 5/105 bus operates between University City portion of San Diego and the campus via downtown San Diego.

Route 13 bus operates between the campus and National City via Allied Gardens, Grantville, east San Diego, southeast San Diego and Lincoln Acres.

Route 36/36A bus operates between 70th Street and El Cajon Boulevard and La Presa via the campus, College Grove Shopping Center and Lemon Grove.

Routes 11/11A/11B, 80/80A, 5/105 and 13 buses stop at the corner of Campanile Drive and Hardy Avenue on the south side of the campus.

Routes 15/115 and 36/36A buses stop on College Avenue adjacent to the campus.

Additional information concerning bus routes, services, and fares can be obtained from San Diego Transit Corporation by telephoning 239-8161 in San Diego.

On-campus parking is by permit only, and is scarce at close-in areas. There usually is adequate parking in outlying areas. Visitors should stop for a permit at the Campanile information booth entrance to the campus. For further information on parking contact the Department of Public Safety.

Marine Corps Programs

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

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

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

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

The Marine Corps Officer Selection Officer visits the campus during the school year. Students are invited to see him for further information during these visits, or are encouraged to write to the United States Marine Corps Officer Selection Officer, 4727 Wilshire Boulevard, Los Angeles, California 90010.

Educational Opportunities Program

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

Veterans Services

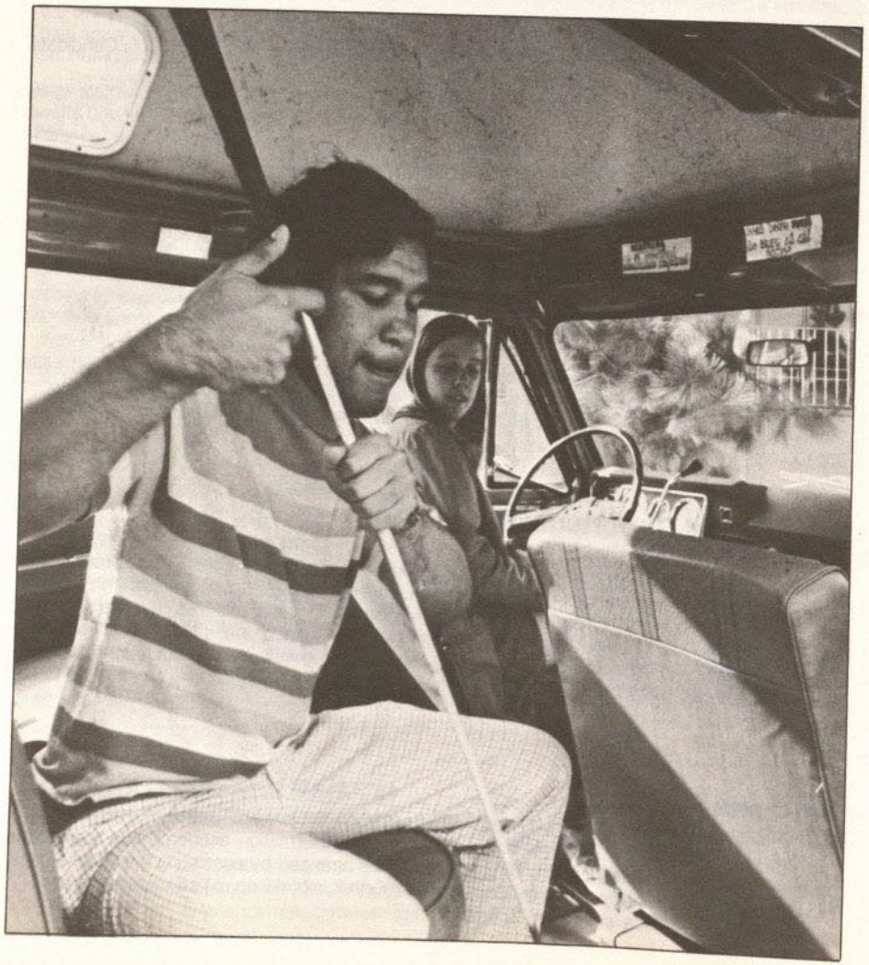
The Veterans Affairs Office (VAO) provides assistance to veterans and their dependents in applying for and utilizing G.I. Bill benefits. We provide benefit information, academic and financial aid counseling. Advance payment of G.I. Bill benefits can be arranged by contacting the office at least two months before the beginning of the semester. For further information regarding veterans benefits contact the Veterans Affairs Office at 286-5813.

Disabled Student Services

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

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

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



Regulations

Admission and Registration
General Regulations
Graduation Requirements

Admission and Registration

Admission Procedures and Policies

Requirements for admission to San Diego State University are in accordance with Title 5, Chapter I, Subchapter 3, of the ***California Administrative Code.*** Prospective applicants who are unsure of their status under these requirements are 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.

Career Placement Information

The campus will furnish, upon request, information concerning the subsequent employment of students who graduate from programs or courses of study which have the purpose of preparing students for a particular career field. This information includes data concerning average starting salary and the percentage of previously enrolled students who obtained employment. Interested prospective students may request copies of the published information from the School Relations Officer.

Requirement and Use of Social Security Number

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

English Placement Test

All students subject to degree requirements of 1977-78 and subsequent general catalogs must demonstrate competency in writing skills as a requirement for graduation. In addition, all lower division students (those who enter with fewer than 56 transferable semester units) are required to take the CSUC English Placement Test (EPT) so that information can be available to help in the selection of appropriate course work in writing skills and to prepare for meeting the graduation requirement. Failure to take the English Placement Test at the earliest opportunity after admission may lead to administrative probation which, according to Section 41300.1 of Title 5, ***California Administrative Code,*** and CSUC Executive Order 186, may lead to disqualification from further attendance. ***The results of the EPT will not affect admissions eligibility.***

Information bulletins and registration materials for the EPT will be mailed to all students subject to these requirements. Alternatively, the materials may be obtained from the Office of Admissions and Records. Information on current available ways to meet the EPT or the graduation requirement may be obtained from the Dean of The University 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. An alternative choice campus and major may be indicated on the application, but ***an alternate campus should be designated only if the applicant is willing to attend the second choice campus if not accommodated at the first choice campus.*** Generally, an alternate degree major will be considered at the first choice campus before an application is redirected to an alternate choice campus. Applicants will be considered automatically at the alternate choice campus if the first choice campus cannot accommodate them. ***Transcripts and other supporting documents should not be submitted until requested by the campus.***

Locally and Systemwide Impacted Programs

Most undergraduate applications are accepted for consideration at the first choice campus in the first choice major. However, quotas have become necessary in a few majors at some campuses where more applications are received during the first month of the filing period than can be accommodated. In those programs, only applications received during the first month of any filing period will be accepted for consideration. ***Applicants for impacted programs must apply during the first month of any filing period.*** Supplementary screening criteria are used to determine which applications will be allocated space in impacted programs. Campuses may consider hardship appeals from applicants.

Locally Impacted Programs

Supplementary screening criteria are used to determine which applications will be allocated space at the first choice campus and which will be considered at the same campus in an alternate major or redirected to an alternate campus where the program is not impacted. In categories for first-time freshmen and lower division transfers with fewer than 12 transferable semester units, at least one-half of the available space will be reserved for the most highly qualified applicants based on previous academic performance as measured by the Eligibility Index. High school grade point averages based on all grades earned after the ninth grade (except those in P.E. and military science) as reported by applicants on the application, and test scores received by the campus no later than the end of the first month of the filing period* will be used to compute the Eligibility Index. Remaining space may be allocated on the basis of self-declared GPA, test scores or other criteria. Campuses using other criteria will advise affected applicants of those criteria. Space in categories for transfer students with 12 or more transferable semester units may be allocated on the basis of self-declared GPA or other criteria. Campuses using other criteria will advise affected applicants of those criteria.

Systemwide Impacted Programs

These are programs where applications received throughout the system exceed the total available spaces in the system. Unlike unaccommodated applicants to locally impacted programs who may be redirected to another campus in the same major, unaccommodated applicants to systemwide impacted programs ***may not be redirected in the same major*** but may choose an alternate major either at the first choice campus or another campus. Details about the supplementary admission criteria to be used by campuses will be sent all applicants under consideration.

Postbaccalaureate Application Procedures

All applicants for any type of postbaccalaureate status (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for personal or professional growth) must file a complete application within the appropriate filing period. ***Second baccalaureate degree candidates 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.

*Applicants to impacted programs or campuses should make every effort to take the SAT or ACT at the earliest date. However, the inability of fall 1978 applicants to supply test scores by December 1, 1977, will not jeopardize their admission priority.

Application Filing Periods

Terms in 1978-79	First Accepted	Student Notification Begins
Fall 1978	November 1, 1977	December 1977
Spring 1979	August 1, 1978	September 1978

Filing Period Duration. Each campus accepts applications until capacities are reached. Most campuses accept applications up to a month prior to the opening day of the term. Some campuses will close individual programs as they reach capacity.

All applications postmarked or received during the initial filing period will be given equal consideration within established enrollment categories and 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.

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

Space Reservation Notices

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

Hardship Petitions

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

Filing of Records

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

(1) Transcript from high school of graduation or last in attendance (not required of the graduate student who holds a bachelor's degree from an accredited institution, but is required of the student who holds a bachelor's degree from a nonaccredited institution).
(2) Transcripts from EACH college attended (including extension, correspondence, summer session, or evening courses). Graduate students must file transcripts *in duplicate* if they plan to enter a master's degree or credential program.
(3) Photostat or true copy of the military separation form DD-214 (or equivalent) if applicant has had active military service. (Not required of graduate students.)

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

Completion of Required Tests

Admissions Tests

(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.
(2) *Writing Competency Test.* 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 University Studies 150, a 3-unit course designed to assist students in achieving competency in English composition. Enrollment 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.
(3) *Test of English as a Foreign Language.* Applicants whose native language is not English must attain satisfactory scores on the Test of English as a Foreign Language (TOEFL). For further information see the section of this catalog on Admission of Foreign Students.

Qualification Tests

Chemistry Placement Examination. Required of students before enrollment in Chemistry 200, 200L or 204A. This examination must be taken before registration. Reservation for the examination is not required. Refer to the calendar in the Class Schedule for examination dates.

Mathematics Placement Examination. Required of students before enrollment in any of the following courses: Mathematics 103, 104, 119, 120, 121, 140, 150; and Economics 201. These examinations may be taken before registration. Reservations for the examinations are not required. Refer to the calendar in the Class Schedule for examination dates.

Graduate Aptitude Tests. This test is required of all graduate students who intend to enroll in a master's degree program. May be taken before registration. Also given during the regular semester. Make reservations for this test at the Test Office, Old Library. Refer to the Graduate Catalog for full information and test dates.

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 the following page. Test results of either the CEEB Scholastic Aptitude Test (SAT) or the American College Testing Program examination (ACT) are acceptable in establishing eligibility.

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

ACT Address
American College Testing Program, Inc.
Registration Unit, P.O. Box 168
Iowa City, Iowa 52240

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

First-Time Freshmen (California high school graduates and residents). Applicants who are graduates of a California high school or legal residents for tuition purposes must have an eligibility index which places them among the upper ***one-third*** of California high school graduates.

The following chart is used in determining eligibility. 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 GPA must present the corresponding test score. Conversely, students with a given ACT or SAT score must present the corresponding GPA 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.

GPA	ACT Score	SAT Score	GPA	ACT Score	SAT Score	GPA	ACT Score	SAT Score	GPA	ACT Score	SAT Score	GPA	ACT Score	SAT Score
(-)[1]	--	---	2.96	15	704	2.71	20	904	2.47	25	1096	2.22	30	1296
3.20	11	512	2.95	16	712	2.70	21	912	2.46	25	1104	2.21	30	1304
3.19	11	520	2.94	16	720	2.69	21	920	2.45	26	1112	2.20	31	1312
3.18	11	528	2.93	16	728	2.68	21	928	2.44	26	1120	2.19	31	1320
3.17	11	536	2.92	16	736	2.67	21	936	2.43	26	1128	2.18	31	1328
3.16	11	544	2.91	16	744	2.66	21	944	2.42	26	1136	2.17	31	1336
3.15	12	552	2.90	17	752	2.65	22	952	2.41	26	1144	2.16	31	1344
3.14	12	560	2.89	17	760	2.64	22	960	2.40	27	1152	2.15	32	1352
3.13	12	568	2.88	17	768	2.63	22	968	2.39	27	1160	2.14	32	1360
3.12	12	576	2.87	17	776	2.62	22	976	2.38	27	1168	2.13	32	1368
3.11	12	584	2.86	17	784	2.61	22	984	2.37	27	1176	2.12	32	1376
3.10	13	592	2.85	18	792	2.60	23	992	2.36	27	1184	2.11	32	1384
3.09	13	600	2.84	18	800	2.59	23	1000	2.35	28	1192	2.10	33	1392
3.08	13	608	2.83	18	808	2.58	23	1008	2.34	28	1200	2.09	33	1400
3.07	13	616	2.82	18	816	2.57	23	1016	2.33	28	1208	2.08	33	1408
3.06	13	624	2.81	18	824	2.56	23	1024	2.32	28	1216	2.07	33	1416
3.05	14	632	2.80	19	832	2.55	24	1032	2.31	28	1224	2.06	33	1424
3.04	14	640	2.79	19	840	2.54	24	1040	2.30	29	1232	2.05	34	1432
3.03	14	648	2.78	19	848	2.53	24	1048	2.29	29	1240	2.04	34	1440
3.02	14	656	2.77	19	856	2.52	24	1056	2.28	29	1248	2.03	34	1448
3.01	14	664	2.76	19	864	2.51	24	1064	2.27	29	1256	2.02	34	1456
3.00	15	672	2.75	20	872	2.50	25	1072	2.26	29	1264	2.01	34	1464
2.99	15	680	2.74	20	880	2.49	25	1080	2.25	30	1272	2.00	35	1472
2.98	15	688	2.73	20	888	2.48	25	1088	2.24	30	1280	(-)[2]		
2.97	15	696	2.72	20	896	---	--	---	2.23	30	1288			

[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.

First-Time Freshmen (Nonresident). The admission requirements for nonresident applicants are higher than those for California residents. Applicants who are neither residents for tuition purposes nor graduates of a California high school must have an eligibility index which places them in the upper one-sixth of California high school graduates. The minimum index for such students is 826 (ACT) or 3402 (SAT).

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.

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

Writing

Writing skills are essential to success in the university. Students are strongly urged to take at least three years of English classes which include instruction in writing. A speech class which teaches organization and development of ideas may be substituted for one English class. San Diego State requires a writing competency test prior to or during the student's first semester.

Mathematics

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

Social Science

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

Science

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

Humanities

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

Foreign Language

Students are advised to take at least two years of the same language. Many degrees awarded by San Diego State require language study which may be satisfied by four years (in the same language) at high school, or a combination of high school and college course work.

Undergraduate Transfer Applicants (Resident and Nonresident)

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

1. Eligible for admission in freshman standing (see freshmen requirements) with a GPA of "C" (2.0 on a scale where A = 4.0) or better in all transferable college units attempted.
2. Completed at least 56 transferable semester units or 84 transferable quarter units with a GPA of "C" (2.0 on a scale where A = 4.0) or better if a California resident. Nonresidents must have a G.P.A. of 2.4 or better.

Other Applicants

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

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

Admission of Postbaccalaureate and Graduate Students

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

Postbaccalaureate Standing (Unclassified)

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

Postbaccalaureate Standing (Classified)

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

Graduate Standing (Conditionally Classified)

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

Graduate Standing (Classified)

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

Admission as an International (Foreign) Student

The admission of international (foreign) students is governed by separate requirements. Prospective applicants from abroad should consult the individual campus catalogs and international (foreign) student informational brochures available from the campuses. Health insurance coverage is mandatory for international (foreign) students. Present acceptable health insurance is available on campus at approximately $55 per year. Applicants for admission as either graduates or undergraduates whose education has been in a foreign country should file an application for admission, official certificates and detailed transcripts of record from each secondary school and collegiate institution attended several months in advance of the opening of the semester in which the applicant expects to attend. International students from outside the United States will be considered for admission only for the fall semester. Only those foreign students already in the United States will be considered for the spring semester. Students applying to transfer from a college or university in the United States must have completed a full year at that institution. If certificates and transcripts are not in English, they should be accompanied by certified English translations. Credentials will be evaluated in accordance with the general regulations governing admission to San Diego State University.

An applicant whose education has been in a language other than English must take the Test of English as a Foreign Language (TOEFL). This test is administered in most foreign countries and test scores must be received by the university before admission to the university can be granted. Information as to the time and place at which this test is given may be obtained by writing to: Educational Testing Service (TOEFL), Princeton, New Jersey, 08540, U.S.A. Upon arrival at San Diego State University, a further test of English will be given for the purpose of placing students in an English language program commensurate with their linguistic ability in English, and for use by advisers to assist students in planning an appropriate course of study. All students, undergraduate and graduate, are required to take one or more of the following courses, depending upon performance on the placement test: University Studies 131, 132, 133, or English 100. These courses must be taken in consecutive semesters, with first required course being taken during the student's first semester at San Diego State University. Foreign students transferring from another U.S. college may be required to take an English placement test.

Arrangements for housing should be completed before the student's arrival on the campus. Detailed information regarding housing may be obtained from the Director of Housing, San Diego State University. Scholarship aid for entering students is limited; no scholarships are specifically reserved for students from another country. Further information regarding scholarships will be found in the section of this catalog on Financial Aid.

Upon arrival at San Diego State University the student should obtain an appointment as early as possible with the International Student Counselor.

Limitation of Enrollment

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

Registration

After a student has been admitted to the University, the 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 just before registration. They contain general information on registration, a listing of the times students are permitted to register, the courses offered for the term, and a listing of the fees required for registration. Fees are payable at the time of registration and depend on the number of units selected. Students who cannot be present at registration may have another person register for them at their scheduled time. The person designated as substitute must be prepared to present both the ID card and Permit to Register, to provide data for the student information card, and to pay required fees. Late registration at San Diego State University is possible only in cases of genuine emergency, and in no case is permitted beyond the first week of class.

Determination of Residence for Nonresident Tuition Purposes

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

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 68000-68090, 90403, 89705-89707.5, and 68122, 68124 and 68121, and in Title 5 of the ***California Administrative Code,*** Article 4 (commencing with Section 41900) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

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 state income tax obligations on total income; ownership of residential property or continuous occupancy or letting of an apartment on a lease basis where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and checking accounts in California banks; maintaining permanent military address and home of record in California if one is in the military service, etc.

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

A man or a woman may establish his or her residence; marriage is not a governing factor.

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a "resident student" for tuition purposes. A residence determination date is set for each academic term and is the date from which residence is determined for that term. The residence determination dates for the 1978-1979 academic year are September 20, 1978 and January 25, 1979. If you have any questions regarding the applicable date, the campus Admissions Office can give you the residence determination date for the term for which you are registering.

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

1. Persons below the age of 19 whose parents were residents of California but who left the state while the student, who remained, was still a minor. When the minor reaches age 18, the exception continues for one year to enable the student to qualify as a resident student.
2. Persons below the age of 19 who have been present in California for more than a year before the residence determination date, and entirely self-supporting for that period of time.
3. Persons below the age of 19 who have lived with and been under the continuous direct care and control of an adult, not a parent, for the two years immediately preceding the residence determination date. Such adult must have been a California resident for the most recent year.
4. Dependent children and spouses of persons in active military service stationed in California on the residence determination date. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year. 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 refugees.
8. Certain credentialed, full-time employees of school districts working toward a credential.
9. Full-time State University and Colleges employees and their children and spouses. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
10. Certain exchange students.
11. Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties.
12. A person in continuous full-time attendance at an institution who had resident classification on May 1, 1973, shall not lose such classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the degree for which 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
Office of General Counsel
400 Golden Shore
Long Beach, California 90802

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. Students classified incorrectly as residents or incorrectly granted an exception from nonresident tuition are subject to reclassification as nonresidents and payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the ***California Administrative Code***. Resident students who become nonresidents, and nonresident students qualifying for exceptions whose basis for so qualifying changes, must immediately notify the Admissions Office. Applications for a change in classification with respect to a previous term are not accepted.

The student is 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.

Academic Advising

Academic advising is available on campus according to major. Students with a declared major or interest in a particular major should consult with the advising center or assistant dean for student affairs in the school or college of that major. Students who are undecided about their majors should consult with the University Advising Center. Besides the advising centers listed below, each department and academic program maintains advisers who may be consulted on specific questions related to their programs. These departmental and program advisers may be reached through any of the school or college advising centers listed below or through the University Advising Center. Most advising centers are open Monday through Friday between 9:00 a.m. and 4:30 p.m. Services are available either by appointment or on a drop-in basis.

College of Arts and Letters Advising Center
(Library East, Room 469)

Afro-American Studies
American Indian Studies
American Studies
Anthropology
Asian Studies
Classical & Oriental Languages
Comparative Literature
Economics
English
European Studies
French & Italian Languages
Geography
German & Slavic Languages
History
Humanities
Latin American Studies
Linguistics
Philosophy
Political Science
Religious Studies
Social Science
Sociology
Spanish & Portuguese
Women's Studies

College of Professional Studies
(Social Sciences, Room 127)

Aerospace Studies
Art
Athletics
Communicative Disorders
Drama
Family Studies & Consumer Sciences
Health Science & Safety
Industrial Studies
Journalism
Music
Mexican-American Studies
Nursing
Physical Education
Public Administration
Recreation
Speech Communication
Telecommunications & Film

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

Astronomy
Biology
Botany
Chemistry
Geological Sciences
Mathematical Sciences
Microbiology
Physics
Psychology
Zoology

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

School of Business Administration Advising Center
(Business Administration, Room 441)

Accounting
Business Education
Finance
Information Systems
Insurance
Management
Marketing
Real Estate

School of Education Admissions and Advising Center
(Education, Room 100)

Community College
Counselor Education
Educational Administration
Educational Technology
Elementary Education
Librarianship
Multicultural Education
Secondary Education
Special Education

School of Engineering Advising Center
(School of Engineering, Room 424)

Aerospace Engineering
Civil Engineering
Electrical Engineering
Mechanical Engineering

School of Social Work Advising Center
(Hepner Hall, Room 111)

Social Welfare Major | Social Welfare Minor | Graduate Program in Social Work

University Advising Center

Students who have not declared a major.
General education advising.
University and overall academic unit requirements.

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

Advising for Graduate Programs, Teaching Credential Programs, and Preprofessional Programs

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

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

Preprofessional advising. Advisement for students planning to attend professional schools is available through the following offices: ***predentistry,*** Physics Building, room 236; ***prelaw,*** Library East Building, room 311; ***premedicine,*** Physics Building, room 236; ***preoccupational therapy,*** Life Science Building, room 407; ***preoptometry,*** Life Science Building, room 407; ***prepharmacy,*** Life Science Building, room 407; and ***prephysical therapy,*** Life Science Building, room 407. Advisers in predentistry, prelaw, and premedicine are not available during the summer months.

Additional Advisory Services Provided Through Following Programs

Introduction to the major. Introductory programs concerning all majors are scheduled twice yearly, approximately one week prior to both the fall and spring semesters. ***All new and readmitted students are urged to attend.*** The dates, hours, and locations of all meetings are published each semester in the opening pages of the Class Schedule. The purpose of these meetings is to explain matters concerning the major and to provide students an opportunity to ask questions of the faculty.

New student orientation. Each summer and winter as a new semester approaches, all incoming students are invited to attend a one-day-on-campus orientation program. Advisement is an important part of each program, including a lecture on general requirements and small group meetings with the assistant deans from the various colleges and schools. Questions concerning orientation can be directed to the Student Resource and Information Center, Campus Laboratory School, room 107.

Exploring the University. Every summer (usually in July and August), the University Study Skills Center offers a special five-week course entitled Exploring the University, for one unit of graduation credit. The purpose of the course is "to prepare new students academically and ease the transition into the university through instruction in the principles of effective learning, clear thinking, and disciplined study." Also included is a section on academic advising to help new students anticipate and plan for the various bachelor's degree requirements. The University Study Skills Center is located in the Library East Building, room 468.

Transcript Evaluation

Official evaluations may be requested at the Evaluations Office upon the completion of 56+ units.

Interviews may be scheduled with evaluators by students with questions concerning their evaluations.

Evaluators are also available to assist students during the registration period.

General Regulations

Student Responsibility for Catalog Information

Students are held individually responsible for the information contained in the catalog. Failure to read and comply with university regulations will not exempt students from whatever penalties they may incur.

The Board of Trustees of The California State University and Colleges, in Section 43800 of Title 5 of the ***California Administrative Code,*** has reserved the right to add, amend, or repeal any of its regulations, rules, resolutions, standing orders, and rules of procedure, in whole or in part, at such time as it may choose. None shall be construed, operate as, or have the effect of an abridgment or limitation of any rights, powers, or privileges of the Trustees. The Chancellor reserves the right to add, amend or repeal any of his Executive Orders, at such time as he may choose, and the President of San Diego State University reserves the right to add, amend, or repeal provisions of 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 assure the accuracy of the information in this catalog. Students are advised, however, that such information is subject to change without notice. Therefore, they should consult the appropriate instructional departments, schools, or administrative offices for current information.

Privacy Rights of Students in Education Records

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) and regulations adopted thereunder (45 C.F.R. 99) and California Education Code Section 67100 et seq, set out requirements designed to protect the privacy of students concerning their records maintained by the campus. Specifically, the statute and regulations govern (1) access to student records maintained by the campus, and (2) the release of such records. In brief, the law provides that the campus must provide students access to official records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate; the right to a hearing under the law does not include any right to challenge the appropriateness of a grade as determined by the instructor. The law generally requires that written consent of the student be received before releasing personally identifiable data about the student from records to other than a specified list of exceptions. The institution has adopted a set of policies and procedures concerning implementation of the statutes and the regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Dean of Student Affairs. Among the types of information included in the campus statement of policies and procedures are: (1) the types of student records and the information contained therein; (2) the official responsible for the maintenance of each type of record; (3) the location of access lists which indicate persons requesting or receiving information from the record; (4) policies for reviewing and expunging records; (5) the access rights of students; (6) the procedures for challenging the content of student records; (7) the cost which will be charged for reproducing copies of records; and (8) the right of the student to file a complaint with the Department of Health, Education and Welfare. An office and review board have been established by the Department to investigate and adjudicate violations and complaints. The office designated for this purpose is The Family Educational Rights and Privacy Act Office (FERPA), Department of Health, Education and Welfare, 330 Independence Avenue, S.W., Washington, D.C. 20201.

The campus is authorized under the Act to release public directory information concerning students. Directory information includes the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student and any other information authorized in writing by the student. The above designated information is subject to release by the

campus at any time unless the campus has received prior written objection from the student specifying information which the student requests not be released. Students shall be given an opportunity to restrict the release of directory information about themselves at the time of registration.

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

Nondiscrimination on the Basis of Sex

The California State University and Colleges does not discriminate on the basis of sex in the educational programs or activities it conducts. Title IX of the Education Amendments of 1972, as amended, and the administrative regulations adopted thereunder prohibit discrimination on the basis of sex in education programs and activities operated by San Diego State University. Such programs and activities include admission of students and employment. Inquiries concerning the application of Title IX to program and activities of San Diego State University may be referred to Dr. Jane Sprague, Affirmative Action Officer, the campus officer assigned the administrative responsibility of reviewing such matters, or to the Regional Director of the Office of Civil Rights, Region 9, 760 Market Street, Room 700, San Francisco, California 94102.

Nondiscrimination on the Basis of Handicap

The California State University and Colleges does not discriminate on the basis of handicap. The CSUC operates in accordance with Section 504 of the Rehabilitation Act of 1973, as amended, and the regulations adopted thereunder, in admission or access to or treatment or employment in the programs and activities of The California State University and Colleges. The Office of Student Affairs has been designated to coordinate the efforts of San Diego State University to comply with the Act and its implementing regulations. Inquiries concerning compliance may be addressed to this office at AD-231, 286-5211.

Options, Computation and Registration of Grades

Registration of Grades

At the end of each semester or summer session in which a student is enrolled, a report of courses takencshowing units and grades earned, is sent to the student. Grades and grade points per unit used in reporting are as follows: Grade of **A** (outstanding achievement), 4 points; **B** (commendable), 3 points; **C** (satisfactory), 2 points; **D** (passing), 1 point; **F** (failure), 0 points; **I** (incomplete authorized), counted as units attempted after one year, 0 points; **U** (unauthorized incomplete), 0 points; **SP** (satisfactory progress), not counted in the grade point average; **W** (withdrawal), not counted in the grade point average; **AU** (audit), no credit earned and not counted in the grade point average; **Cr** (credit), signifying units earned, but not counted in the grade point average; **NC** (no credit), no credit earned and not counted in the grade point average.

Undergraduate Student Options on Grading

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

1. Courses graded credit/no credit (Cr/NC), whether taken at this or at another institution, may not be used to satisfy requirements for the student's major except for those courses identified in the course listing as graded "Cr/NC."

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

6. Courses in which a student has received a D or F may not be repeated using the credit/no credit option.

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

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

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

Candidates for graduation with the baccalaureate degree whose record carries a grade of Incomplete will be graduated provided they are otherwise eligible for graduation. However, the Incomplete cannot be made up after the degree has been granted. If students do not wish to be graduated with the grade of Incomplete on their record, they must officially cancel their application for graduation.

Satisfactory Progress Grade

The "SP" symbol is used in connection with courses that extend beyond one academic term. It indicates that work is in progress and has been evaluated and found to be satisfactory to date, but that assignment of a precise grade must await completion of additional work. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. Work is to be completed within a stipulated time period. This may not exceed one year except for graduate degree theses for which the time may be up to two years, but may not exceed the overall time limit for completion of all master's degree requirements. Any extension of time limit must receive prior authorization by the Dean of the University College (for undergraduate courses) or the Dean of the Graduate Division and Research (for graduate courses).

Withdrawal Grade

The symbol "W" indicates that the student was permitted to drop the course after the fourth week of instruction with the approval of the instructor and appropriate campus officials. It carries no connotation of quality of student performance and is not used in calculating grade point average or progress points.

Unauthorized Incomplete

The symbol "U" indicates that an enrolled student did not withdraw from the course but failed to complete course requirements. It is used when, in the opinion of the instructor, completed assignments or course activities or both were insufficient to make normal evaluation of academic performance possible. For purposes of grade point average and progress point computation, this symbol is equivalent to an "F."

Courses

Except as permitted in graduation 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 (junior and senior years) and intended for undergraduates; those numbered 500 through 599 are in the upper division and are also acceptable for advanced degrees; and those numbered 600 through 799 are strictly graduate courses. Courses numbered X-900—X-999 are those offered only through Continuing Education to meet specific academic needs of community groups. Courses at the X-900 level are designed to meet special or professional needs, and unless otherwise stated in the course description are applicable toward degree requirements at San Diego State University. Courses at the X-900 level are not acceptable on advanced degree programs.

Auditing

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

Repeated Course

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

Final Examinations

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

Academic Credit Through Course Work

Credit for Upper Division Courses

Normally, only juniors, seniors and graduate students enroll in upper division courses (numbered 300 and above). However, a freshman or sophomore may enroll in an upper division course for upper division credit if the instructor consents.

Community College Credit

A maximum of 70 semester units earned in a community college may be applied toward the degree, with the following limitations: (a) no upper division credit may be allowed for courses taken in a community college; (b) no credit may be allowed for professional courses in education taken in a community college, other than an introduction to education course.

Concurrent Master's Degree Credit

A senior who is within 12 units of completing requirements for the bachelor's degree and whose overall grade point average is 3.0 or above may petition the Graduate Council to take for concurrent master's degree credit 500-numbered courses listed in the Graduate Catalog as acceptable for master's degree programs, and certain 600- and 700-numbered courses approved by the department, with the remaining requirements for the bachelor's degree. Petitions must be submitted before the end of the fourth week of classes (or the first week of summer term II) of the semester (or term) in which the concurrent credit is earned. The bachelor's degree must be completed at the end of the semester or term in which the concurrent credit is earned. The maximum number of units which may be earned as concurrent master's degree credit is determined by the difference between the number of units remaining for the bachelor's degree and 15. No more than three units in 600- and 700-numbered courses will be accepted toward the minimum unit requirements for the master's degree.

Concurrent Postbaccalaureate Credit

Applicable to the "Fifth Year" Credential Requirement Only

Concurrent postbaccalaureate credit may be earned during the final semester or summer session by seniors admitted to the School of Education who meet all of the following qualifications:

1. Have a minimum grade point average of 2.5 on the last 60 units attempted;
2. Complete course work in excess of graduation requirements during the semester (or summer session) when graduation occurs;
3. Attempt no more than 18 units during the final undergraduate semester (or 15 units during summer session);
4. Petition the Dean, School of Education, during the final undergraduate semester (or summer session) when graduation will occur to record a maximum of 12 units of excess 300-, 400-, or 500-numbered courses as "postbaccalaureate" (petition form available in Evaluations Office, AD-124);
5. Graduate at the end of the semester (or summer session) the petition is made.

Extension courses are not acceptable for concurrent postbaccalaureate credit. Concurrent postbaccalaureate credit will not be granted retroactively.

Credit for Extension Courses

The maximum amount of extension and correspondence credit which may be accepted toward the minimum requirements for the bachelor's degree is 24 semester units. Extension and correspondence credit do not count in satisfaction of the minimum residence requirement. A maximum of six units in extension courses at San Diego State University may be accepted as part of the requirements for the master's degree, subject to limitations described in the Graduate Bulletin.

Continuing education courses offered by departments are of two kinds. The first includes regular courses listed in the General Catalog which are available for use by students in meeting college and university credit requirements of various kinds, and are usually at the upper division level. A second kind is offered by some departments at the X-900 level and serves to meet the needs of specific community groups. Courses at the X-900 level are designed to meet special or professional needs, and unless otherwise stated in the course description are applicable toward degree requirements at San Diego State University. Courses at the X-900 level are not acceptable on advanced degree programs.

Academic Credit Through Examination

Credit by Examination

Approval to receive undergraduate credit-by-examination is granted at the discretion of the appropriate college authorities and under the following conditions:

1. The student must be matriculated, in good standing (not on probation), be registered in at least one regular course (not Extension) at the time credit-by-examination is authorized, and pay for additional units if cost exceeds fees already paid. Application for credit by examination must be made within the time limits for filing a change of program as listed in the Academic Calendar each semester. In summer sessions the total units earned for courses and examinations cannot exceed the limit authorized by the Education Code.
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 by the Veterans Administration in the application of their regulations; and is not always accepted as transfer credit between collegiate institutions.

Credit for Advanced Placement Examinations

San Diego State University grants credit toward its undergraduate degrees for successful completion of examinations of the Advanced Placement Program of the College Entrance Examination Board. Students who present scores of three or better will be granted 6 to 10 semester units (9 to 15 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 Evaluations Office.

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

Examination	Score	Semester units credit allowed toward degree	SDSU course equivalents*	Remarks
American History	3, 4, 5	6	History 110A-110B (6)	Satisfies American history/ institutions and ideals, and U.S. Constitution requirements. Does not satisfy Calif. govt. requirement.
European History	3, 4, 5	6	History 105A-105B (6)	
English	3, 4, 5	6	English 100 or 101 and 200 (6)	
French	3	6	French 201 and 211 (6)	
	4, 5	6	French 202 and 212 (6)	
Classics: Vergil	3, 4, 5	5	Classics 202L (5)	If more than one examination is satisfactorily passed, 5 additional units credit will be provided
Latin Prose	3, 4, 5	5	Classics 202L (5)	
Latin Lyric	3, 4, 5	5	Classics 202L (5)	
German	3	6	German 201 and 211 (6)	
	4, 5	6	German 202 and 212 (6)	
Spanish	3	7	Spanish 201 and 211 (6)	
	4, 5	7	Spanish 202 and 212 (6)	
Biology	3, 4, 5	6	Biology 100 and 100L (4)	+ Biology 300 (2)
Chemistry	3, 4, 5	10	Chemistry 200, 200L, 201, 201L (10)	
Mathematics				
Calculus AB	3, 4, 5	6	Mathematics 150 (5)	+ Mathematics 300 (1)
Calculus BC	3, 4, 5	9	Mathematics 150 (5)	+ Mathematics 151 (4)
Physics				
B	3, 4, 5	8	Physics 124A-124B (6)	+ Physics 125A-125B (2)
C	3, 4, 5	8	Physics 195, 195L, 196, 196L (8)	
Art History	3, 4, 5	6	Art 258 and 259 (6)	
Studio Art	3, 4, 5	6	Art 100, 102 or Art 101, 103 (6)	
Music	3, 4, 5	6	Music 102, 151 (6)	

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

Credit for College Level Examination Program (CLEP)

San Diego State University will consider the granting of credit to those students who have attained a score at or above the 50th percentile on each test of the General Examinations of the College Level Examination Program exclusive of English. Credit may also be allowed for the Special Examinations of CLEP in mathematics. Scores should be forwarded to the Admissions Office for evaluation.

Academic Credit for Military Service

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

To obtain credit for military service, the student must be fully matriculated and enrolled for admission to the university.

Student Classification

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

Each student who enrolls in one or more summer session classes shall be classified as a summer session student. Each student who enrolls in one or more extension classes shall for his extension class work be classified as an extension class student. Such students need not be matriculated students as a prerequisite for enrollment in classes.

Freshman. A student who has earned a total of fewer than 30 semester units.

Sophomore. A student who has earned a total of 30 to 59 semester units, inclusive.

Junior. A student who has earned a total of 60 to 89 semester units, inclusive.

Senior. A student who has earned a total of 90 semester units or more.

Graduate. A student who has completed a four-year college course with an acceptable baccalaureate degree from an accredited institution and who has been admitted to the University with postbaccalaureate standing. For information on classification of graduate students, see the Graduate Bulletin.

Student Program and Records

Transcripts of Record

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

Change of Program

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

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

Change of program is permitted without effect on record or grade and with no restriction or penalty beginning the first week of class and ending the 20th day of classes.

Withdrawals from class after the 20th day of instruction and prior to the last three weeks of instruction are permissible only for serious and compelling reasons. Permission to withdraw during this period is granted only with the approval of the instructor and the Department Chairman, and approvals are made in writing on prescribed forms. Withdrawals are not permitted during the final three weeks of instruction, except in cases such as accident or serious illness where the cause of withdrawal is due to circumstances clearly beyond the student's control and the assignment of an Incomplete is not practicable. Ordinarily, withdrawals in this category will involve total withdrawal from the campus, except that credit, or an Incomplete, may be assigned for courses in which sufficient work has been completed to permit an evaluation to be made. Requests to withdraw under such circumstances must be approved by the dean of the school or college of the student's major.

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Change of Major or Curriculum

At the time of admission to the university, each undergraduate student is assigned to a major field or curriculum, or is designated as an undeclared major. After registration, any student wishing to change his major or curriculum must make application at the Evaluations Office.

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

Withdrawal, Leave of Absence, Readmission, and Evaluation

Withdrawal. Students who wish to withdraw from the university must initiate action formally through the Registrar's Office. Failure to file will result in a failing grade in all courses. Under certain circumstances, complete withdrawal is possible up to three weeks preceding the last day of instruction; however, refunds are obtainable only for the first 14 days after the term begins. A student withdrawing during the refund period is no longer considered a continuing student and is required to apply for readmission.

A course will not appear on the permanent record if withdrawal occurs before the end of the 20th day of classes. For complete information about withdrawals after the first four weeks of the term, refer to change of program.

Unofficial Withdrawal. A student withdrawing unofficially from class or from the university will receive failing grades in all courses which he stops attending. An unofficial withdrawal is one in which a student stops attending classes without filing official withdrawal forms within the established deadlines.

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

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

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

Approval for leaves of absence will not be granted to students who have been admitted 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.

Dean's List

The Dean's List recognizes academic achievement within a single semester.

Students must place within the top ten percent of the school or college in which they are majoring, and have a grade point average of at least 3.50 based on a minimum of 12 units of credit for courses in which letter grades were assigned. The computation of grade points will be made six weeks after the end of the semester to include students who complete incomplete grades promptly.

Students will be recognized by the Dean of their respective School or College; undeclared and liberal studies majors will be listed by the Dean of The University College.

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, U and NC, zero progress points. An undergraduate student will be placed on academic probation if at any time the student's cumulative grade point average in all college work attempted or the student's cumulative grade point average at this institution falls below 2.0 or if during any term while the student is enrolled he/she 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/her cumulative grade point average is 2.0 or higher in all college work attempted and in all work attempted at this university and when the student 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 a student falls 15 or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.
B. As a junior (60-89 semester hours of college work completed) if a student falls nine or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.
C. As a senior (90 semester hours of college work completed) if a student falls six or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.
D. Regardless of class level or cumulative grade point average, if in any term while a student is on probation the student fails to earn at least twice as many progress points as units attempted. Probation will be lifted when a student 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 the poor performance have been alleviated. Application for reinstatement should be made at the Admissions Office.

Administrative Academic Probation

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

A. Withdrawal from all or a substantial portion of a program of studies in two successive terms or in any three terms.
B. Repeated failure to progress toward the stated degree or objective or other program objective (when such failure appears to be due to circumstances within the control of the student).
C. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (example: failure to take placement tests, failure to complete a required practicum).

Administrative Academic Disqualification

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

A. The conditions for removal of administrative academic probation are not met within the period specified.
B. The student becomes subject to academic probation while on administrative academic probation.
C. The student becomes subject to administrative academic probation for same or similar reason for which the student has been placed on administrative academic probation previously, although not currently in such status.

Student Discipline and Grievances

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.
(i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on campus property or at a campus function without prior authorization of the campus president.
(j) Engaging in lewd, indecent or obscene behavior on campus property or at a campus function.
(k) Abusive behavior directed toward, or hazing of, a member of the campus community.
(l) Violation of any order of the campus president, notice of which had been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the other provisions of this Section.
(m) Soliciting or assisting another to do any act which would subject a student to expulsion, suspension or probation pursuant to this Section.
(n) For purposes of this Article, the following terms are defined:
  (1) The term "member of the campus community" is defined as meaning California State University and Colleges Trustees, academic, nonacademic and administrative personnel, students, and other persons while such other persons are on campus property or at a campus function.
  (2) The term "campus property" includes:
    (A) real or personal property in the possession of, or under the control of, the Board of Trustees of The California State University and Colleges, and
    (B) all campus feeding, retail or residence facilities whether operated by a campus or by a campus auxiliary organization.
  (3) The term "deadly weapons" includes any instrument or weapon of the kind commonly known as a blackjack, slingshot, billy, sandclub, sandbag, metal knuckles; any dirk, dagger, switchblade knife, pistol, revolver, or any other firearm; any knife having a blade longer than five inches; any razor with an unguarded blade, and any metal pipe or bar used or intended to be used as a club.
  (4) The term "behavior" includes conduct and expression.
  (5) The term "hazing" means any method of initiation into a student organization or any pastime or amusement engaged in with regard to such an organization which causes, or is likely to cause, bodily danger, physical or emotional harm to any member of the campus community; but the term "hazing" does not include customary athletic events or other similar contests or competitions.

41302. Expulsion, Suspension or Probation of Students: Fees and Notification. The President of the campus may place on probation, suspend, or expel a student for one or more of the causes enumerated in Section 41301. No fees or tuition paid by or for such student for the semester, quarter or summer session in which he is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester, quarter or summer session in which he is suspended, no additional tuition or fees shall be required of the student on account of his suspension. In the event that a student who has not reached his eighteenth birthday is suspended or expelled, the President shall notify his parent or guardian of the action by registered mail to the last known address, return receipt requested.

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

If a student believes that a professor's treatment of him is grossly unfair or that a professor's behavior is clearly unprofessional, he may bring his complaint to the proper university authorities and official reviewing bodies by following the ***Procedures for Handling Student Grievances Against Members of the Faculty,*** adopted by the Faculty Senate. A copy of the procedures may be obtained from the Dean of Student Affairs (AD-231).

Graduation Requirements for the Bachelor's Degree

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

1. Students who declare their major, or change their major, during the 1978-79 academic year must meet all graduation requirements appearing in this catalog. However, students may remain with the general education requirements in effect during the year in which they entered SDSU, another campus in the CSUC system, or a California community college. Students may continue to use this catalog in subsequent years so long as they remain in continuous enrollment at the University or are on approved leave of absence, provided they do not change their majors. If students change or declare their majors in subsequent years, they must adopt the catalog in effect at the time of such change or declaration; they may continue with this catalog only with regard to their general education requirements.

2. At the students' option, they may change to the catalog in effect in the year in which they graduate. Thus, students graduating in December 1978, May 1979, or in the 1979 summer sessions may adopt this catalog by so indicating on their application for graduation.

Applications for graduation are available in the Evaluations Office (Administration Bldg., Room 124) and are normally filed in the fall semester of the senior year. Deadlines by which applications must be received in the Evaluations Office are published each year in the fall semester Class Schedule.

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

I. General Education Requirements

As an important part of education, undergraduate students spend approximately one-third of their college years studying in the general education program. Course work in general education is intended to enrich students' overall academic programs and to complement their mastery of a more specialized subject area.

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

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

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

1. Course work in a major;
2. Special basic courses in mathematics, composition and other subjects which are identified in the catalog as ineligible for General Education;
3. Course work in excess of 12 units in one department.
4. No more than three units from courses numbered 299 (Experimental Topics), and not more than three units from courses numbered 496 or 596 (Experimental Topics) can be applied to general education requirements.
5. Course work in excess of three units used to satisfy the American Institutions requirement [hence, three of the six units of the requirement (if met by taking courses)] may be counted in the Humanities or Social Sciences section of the general education program.
6. Course work used to satisfy the Physical Activities graduation requirement.

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

The Program in General Education

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

BASIC SUBJECTS

The inclusion of "Basic Subjects" in a general education program serves to establish that there are common modes of expression and analysis which underlie the whole enterprise of learning. The most fundamental of these are written and oral communication in English, mathematical and (increasingly) statistical computation, and logical analysis. All of these modes of expression are capabilities which should be achieved by students during the first semester or year of college, if not before.

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

Three units in English Composition:
- Afro-American Studies 120A. Composition and Reading (3)
- English 100. Composition and Reading (3)
- English 101. Composition and Literature (3)
- Mexican-American Studies 111B. Written Communication (3)

Three units in Mathematics, Statistics or Logic:
- Any mathematics course numbered 118 or higher, with the exclusion of computer programing courses.
- Economics 201. Statistical Methods (3)
- Political Science 201. Elementary Statistics for Political Science (3)
- Psychology 270. Statistical Methods in Psychology (3)
- Sociology 201. Elementary Social Statistics (3)
- Philosophy 120. Logic (3)

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

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** (Seven units to include a laboratory).
   a. Life Sciences — At least three units from the following courses:
      - *Anthropology 101. Human Bio-Cultural Origins (3)
      - Biology 100. General Biology (3)
      - Biology 100L. General Biology Laboratory (1)
      - Botany 100. Plants and Man (3)
      - Microbiology 110. Microbiology and Man (3)
      - Microbiology 110L. Microbiology and Man Laboratory (1)
      - Natural Science 110B. Energy in Nature with Laboratory (4)
      - Zoology 100. Evolution and Diversity of Animals (3)
      - Zoology 100L. Evolution and Diversity of Animals Laboratory (1)

b. Physical Sciences — At least three units from the following courses:
Astronomy 101. Principles of Astronomy (3)
Astronomy 103. The Structure of Scientific Thought (3)
Astronomy 109. Astronomy Laboratory (1)
*Geography 101. Introduction to Physical Geography (3)
Geography 101L. Physical Geography Laboratory (1)
*Geography 103. Introduction to Meteorology (3)
Geography 103L. Introduction to Meteorology Laboratory (1)
Geological Sciences 100. General Geology (3)
Geological Sciences 101. General Geology Laboratory (1)
Natural Science 100A. Physical Science (3)
Natural Science 102A. Physical Science with Laboratory (4)
Natural Science 110A. Energy in Nature with Laboratory (4)
Physics 103. Physics for Poets (3)
Physics 115A. Elementary Physics (4)

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

Special provision for majors in the sciences and related fields.

a. Where course work in biology, chemistry, physics or zoology is required (or listed as a recommended course in the catalog) in preparation for a student's major, he or she may substitute a course, acceptable in preparation for the major in any of those disciplines, in lieu of courses listed above for general education.
b. If a student does so, and later changes his or her major to a field which does not require course work in these disciplines, the student may nevertheless receive general education credit for courses taken in those disciplines.
c. Undeclared majors who take non-general education science courses in those four disciplines, in anticipation of declaring a major which requires such course work, are included in a. and b. above.

2. **Social and Behavioral Sciences** (Six units to include a 3-unit course in two different disciplines):
Anthropology 102. Introduction to Cultural Anthropology (3)
Economics 100. Contemporary Economic Problems (3)
Economics 101. Principles of Economics (3)
Economics 102. Principles of Economics (3)
Geography 102. Introduction to Cultural Geography (3)
Linguistics 101. Language Study (3)
+°Mexican-American Studies 140. History and Sociology of Racism (3)
Political Science 101. Introduction to Political Science (3)
Political Science 102. Introduction to American Government and Politics (3)
Political Science 302. Modern Political Thought (3)
+Psychology 101. Introductory Psychology (3)
Sociology 101. Introductory Sociology (3)
°Women's Studies 201. Sexism and the Social Sciences (3)

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

3. **Humanities** (Nine units to include a 3-unit course in three of the following four areas):
a. Literature
Comparative Literature 270A-270B. World Literature (3-3)
English 220. Introduction to Literature (1-3)
b. Art, Drama, Humanities, Music
Art 157. Introduction to Art (3)
Art 258. Appreciation and History of Art (3)
Art 259. Appreciation and History of Art (3)
Drama 105. Introduction to the Theater (3)
Drama 120. Dramatic Heritage (3)
Humanities 101. Introduction to Humanities (3)
Humanities 102. Humanities in Perspective (3)
Humanities 140. Mythology (3)
Music 151. Introduction to Music (3)

c. Classics, History
Classics 140. The Heritage of Greece and Rome (3)
History 100A-100B. The Global Community (3-3)
History 105A-105B. Western Civilization (3-3)
History 110A-110B. American Civilization (3-3)
History 115A-115B. Comparative History of the Americas (3-3)
Humanities 130. The Jewish Heritage I (3)
d. Philosophy, Religious Studies
Philosophy 101. Introduction to Philosophy: Values (3)
Philosophy 102. Introduction to Philosophy: Knowledge and Reality (3)
Philosophy 103. Historical Introduction to Philosophy (3)
Religious Studies 101. World Religions (3)

EXPLORATIONS IN THE HUMAN EXPERIENCE

Based upon "Foundations of Learning," the third section of the general education program affords students an opportunity to explore fundamental human concerns, especially as they affect contemporary men and women. These concerns cannot be addressed solely from the perspective of the humanist, or the social scientist, or the natural scientist, but require the intellectual collaboration of scholars and teachers from many diverse academic areas.

"Explorations in the Human Experience" consists primarily of upper division courses organized around themes or topics relevant to general education. Students are encouraged and expected to complete course work in Basic Subjects and Foundations of Learning before undertaking course work in this section of the program.

For assistance in developing your general education program, contact an academic adviser. (Refer to section of catalog on Academic Advising.)

Alternative Patterns of Study

Explorations in the Human Experience can be completed by students in one or two general ways:

1. Students may identify a theme listed below and complete any three courses (a minimum of nine units) listed under the theme.
2. Students may design their own themes, in the following manner:
With the approval of the college or school of their major (or the University College for undeclared majors), students may design a theme containing nine units of course work. The courses selected must relate closely to a general topic or theme which the student has devised, and they must be offered by at least two schools or colleges. Courses may be selected in either of two ways:
a. Nine units from among courses approved for Foundations of Learning and/or Explorations in the Human Experience; or
b. Six units from among courses approved for Foundations of Learning and/or Explorations in the Human Experience, and three units from outside of the general education program.

Additional Qualifications

1. Upper division courses taken for Explorations in the Human Experience may not be counted toward a major.
2. In Explorations in the Human Experience, students may take no more than one course per department or interdisciplinary program, except for Theme 27 (foreign language study).

Themes and Courses

1. The Way We Are: Human Nature and Behavior

The behavior of contemporary men and women is conditioned by psychological, genetic, and environmental factors of great complexity. This theme explores various dimensions of this behavior,

including the impact on modern life of culture and society, racial and sexual characteristics, and genetic factors.

* Afro-American Studies 445. Ethnicity and Social Psychology (3)
* Anthropology 432. Principles of Personality in Culture (3)
Biology 145. Introduction to Heredity (3)
English 301. The Psychological Novel (3)
* Political Science 325. Political Behavior (3)
Psychology 342. Public Opinion Measurement (3)
* Psychology 351. Psychology of Personality (3)
Recreation 104. Challenges of Leisure (3)
* Religious Studies 353. The Human Dimension of Religion and Psychology (3)
Social Welfare 360B. Perspectives on Behavioral and Social Change (3)
Women's Studies 325. Psychology of Women (3)
* Zoology 340. Sociobiology (3)

2. Social Change in the Third World

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

* Anthropology 425. Peasant Society and Culture (3)
* Anthropology 426. Cultural Change and Processes (3)
Comparative Literature 272A. Third World Literature (3)
* Economics 365. Economics of Underdeveloped Areas (3)
* Geography 521. Urbanization and Modernization in Latin America (3)
History 565. Revolution and Social Change in Asia (3)
Political Science 364. Political Change in Contemporary Africa (3)
* Political Science 381. International Relations of the Developing Nations (3)
* Political Science 561. Governments and Politics of the Developing Areas (3)
* Sociology 506. Modernization of Traditional Societies (3)
Women's Studies 310. Women in Comparative Cultures (3)

3. Ways of Thinking and Knowing

The idea that mankind can add to knowledge through scientific investigation and observation is, historically speaking, a fairly recent development. Other sources of knowledge such as intuition, reason, religious revelation, aesthetic perceptions, and mysticism, have much longer histories and continue to compete with science as sources of human knowledge. This theme will allow students to explore several "ways of knowing" and to compare different ideas about knowledge and its acquisition.

American Indian Studies 470. Roots of Indian Tradition (3)
* Anthropology 424. Primitive Religion (3)
Classics 310. Greek and Roman Mythology (3)
* Natural Science 317. Development of Scientific Thought (3)
Natural Science 430. Interpretation of Quantum Mechanics (3)
* Philosophy 509. Ordinary Language Analysis (3)
* Philosophy 523. Theory of Knowledge (3)
* Philosophy 537. Philosophy of Science (3)
* Political Science 313. The Theory of Political Inquiry (3)
* Religious Studies 363. Religion and Science (3)
* Sociology 563. The Logic of Sociological Inquiry (3)

4. The Environment and Human Life

Throughout human history, people have had to answer fundamental questions about their relationship to nature. Their answers have influenced heavily the quality of their lives and even their existence. Concern for the environment is concern for the human condition, a continual struggle to

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

break out of the biological and social constraints of disease, famine, war, ignorance, and superstition. Courses in this theme explore the fundamental nature of ecosystems and the role of mankind in adapting to or modifying the natural world. Environmental degradation and the attendant ethical, social, political, and economic question will be emphasized.

* Anthropology 428. Ecological Anthropology (3)
* Biology 130. Ecosystems and Man (3)
* Chemistry 301. Chemical Principles in Environmental Protection (3)
* Economics 453. Economics and Ecology (3)
Engineering 150. Control of the Human Environment (3)
* Geography 370. Conservation of Environmental Quality (3)
* Geological Sciences 303. Environmental Geology (3)
History 340. Environmental Problems in Historical Perspective (3)
* Oceanography 320. The Oceans (3)
Political Science 334. Politics of the Environment (3)
Recreation 205. Wilderness and the Leisure Experience (3)
* Sociology 550. Population Problems (3)

5. Human Communication

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

* Anthropology 410. Language in Culture (3)
Classics 120. Latin and Greek Word Derivation (3)
Educational Technology and Librarianship 400. Technology and Lifelong Learning (3)
Journalism 500. Current Problems in Mass Communications (3)
* Linguistics 551. Sociolinguistics (3)
* Linguistics 552. Psycholinguistics (3)
* Political Science 326. Political Communication (3)
* Sociology 545. Sociology of Mass Communication (3)
Speech Communication 475. Intercultural Communication (3)
Speech Communication 530. Semantics (3)
* Speech Communication 592. Persuasion (3)
Speech Pathology and Audiology 305. Speech and Language Development and Communication Disorders (3)
* Telecommunications & Film 160. Cinema as Art and Communication (3)

6. Natural Resources for the World's Future

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

* Biology 320. Concepts of Ecology (4)
* Biology 420. Conservation of Wildlife (3)
* Economics 452. Economics of Energy Resources (3)
* Engineering 360. Energy: Issues and Ideas (3)

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

* Geography 351. Economic Geography: Primary Production (3)
* Geography 371A-371B. Conservation of Natural Resources (3-3)
* Geography 574. Water Resources (3)
History 540. Environmental History of the United States (3)
* Physics 301. Energy and Conservation (3)
* Zoology 430. Insects and Human Welfare (3)

7. Cross-Cultural Understanding: Issues and Challenges

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

Afro-American Studies 102. Afro-American Life-Styles (3)
* Anthropology 150. World Cultures (3)
* Anthropology 350. World Ethnography (3)
Comparative Literature 271B. Asian Literature (3)
History 321. Asia's Emerging Nations (3)
Mexican-American Studies 376. Mexican-American Culture and Thought (3)
* Political Science 381. International Relations of the Developing Nations (3)
* Sociology 525. Minority Group Relations (3)
* Sociology 536. The Family in Cross-Cultural Perspective (3)
* Spanish 440. Spanish Civilization (3)
Speech Communication 475. Intercultural Communication (3)

8. Science, Technology and Society

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

American Studies 360. Science, Technology and American Culture (3)
* Business Administration 455. American Business History (3)
* Chemistry 302. Chemistry and Society (3)
* Economics 380. Labor Problems (3)
History 584A. Science and Society (3)
History 584B. Science and Society (3)
* Natural Science 333. Technology and Human Values (3)
Public Administration 463. Science, Technology and Public Policy (3)
* Religious Studies 363. Religion and Science (3)
Sociology 406. Science, Technology and Social Dynamics (3)

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

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

Afro-American Studies 101. Introduction to Afro-American Studies (3)
Afro-American Studies 102. Afro-American Life-Styles (3)
Afro-American Studies 250. Psychology of Blackness (3)
* Afro-American Studies 461. Afro-American Literature (3)
American Indian Studies 110. American Indian Heritage (3)
American Indian Studies 200. American Indian Literature (3)
American Indian Studies 255. American Indian Music (3)
American Indian Studies 265. American Indian Art (3)

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

Mexican-American Studies 110A. Introduction to Mexican-American Studies (3)
Mexican-American Studies 115. Mexican-American in Transition (3)
Mexican American Studies 320. Mexican-American Life-Styles (3)
* Mexican-American Studies 380. Chicano Folklore (3)

10. Cultural Pluralism in America

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

Afro-American Studies 448. Black and Non-Black Interpersonal Relations (3)
* Afro-American Studies 452. Race Relations Strategies (3)
American Indian Studies 120. American Indians in Contemporary Society (3)
American Indian Studies 400. The American Indian Political Experience (3)
American Indian Studies 440. American Indian History (3)
* Anthropology 441. The California Indian (3)
Comparative Literature 272B. Third World Literature (3)
Mexican-American Studies 350B. Chicano History (3)
Social Welfare 350. Cultural Pluralism (3)
* Sociology 525. Minority Group Relations (3)
Women's Studies 341B. Women in American History (3)

11. Mass Society and the Individual

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

Afro-American Studies 231. Cultural Patterns and Identity (3)
American Indian Studies 450. Bureaucracy and the American Indian (3)
* Business Administration 356. The Corporation in Modern Society (3)
* Economics 332. Capitalist Economy (3)
* Journalism 508. Mass Communications and Society (3)
* Philosophy 329. Social Ethics (3)
Political Science 348. The Supreme Court and Contemporary Issues (3)
Political Science 372. Democracy and Mass Society (3)
* Psychology 340. Social Psychology (3)
* Sociology 533. Sex Roles in Contemporary Societies (3)
Telecommunications and Film 315. Theory and Criticism of Broadcasting and Film (3)
Women's Studies 320. Socialization of Women (3)
Women's Studies 370. Women and the Law (3)

12. The Arts and the Contemporary World

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

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

Afro-American Studies 180. Afro-American Music (3)
* Art 558. Art of the 20th Century (3)
Comparative Literature 514. Modern European Literature (3)

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

Drama 460B. History of the Theatre (3)
* Music 345. Music in Contemporary Life (3)
Music 351B. Musical Masterpieces of the 20th Century (3)
Music 351D. Twentieth Century American Jazz (3)
* Philosophy 541. History of Aesthetics (3)
* Philosophy 542. Philosophy of Art (3)
* Political Science 310. Politics and the Arts (3)
* Telecommunications and Film 363. International Cinema (3)
* Telecommunications and Film 563. Film Classics (3)
Women's Studies 353. Women Writers (3)

13. The Patterns of Nature

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

* Astronomy 301. Cosmology and Gravitational Collapse (3)
Biology 200. Natural History of Plants and Animals (3)
* Biology 380. Processes of Organic Evolution (3)
* Geography 507A. Geography of Natural Vegetation (3)
* Geography 507B. Geography of Natural Vegetation (3)
* Geography 508. Physical Climatology (3)
* Geological Sciences 105. Historical Geology (4)
* Geological Sciences 301. Geology of National Parks and Monuments (3)
*Geological Sciences 333. The History of Life (3)
* Natural Science 431. The Origins of Life (3)
* Physics 304. Concepts in Modern Physics (3)
* Zoology 314. Natural History of the Vertebrates (3)

14. Power and Innocence in America

Americans sometimes see themselves as innocents pursuing values such as simplicity, spontaneity and isolation; at other times they view themselves as powerful, producing new technologies, building great organizations and defending allies from aggression. These two self-images often clash, requiring reconciliations visible in our art, philosophy, popular culture and history. While studying the dynamic relationship of power and innocence in America, students will be exploring their own values, elements of our social structure and an important influence on our relations with other peoples of the world.

Afro-American Studies 380. Blacks in the American Justice System (3)
* Business Administration 356. The Corporation in Modern Society (3)
* Economics 474. Economic Concentration and Monopoly Power (3)
* Geography 370. Conservation of Environmental Quality (3)
History 536. The United States in the Nuclear Age (3)
* Mexican-American Studies 301A. Political Economy of the Chicano People (3)
* Mexican-American Studies 301B. Political Economy of the Chicano People (3)
Political Science 348. The Supreme Court and Contemporary Issues (3)
* Social Welfare 370A. Social Policies and Social Issues (3)
Women's Studies 330. Contemporary Issues in the Liberation of Women (3)

15. The Human Health Experience

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

* Biology 350. Human Heredity (3)
* Biology 362. Principles of Human Physiology (3)
* Biology 390. Environment, Health and Disease (3)

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

Family Studies and Consumer Sciences 107. Nutrition Today (3)
Health Science and Safety 101. Health and Life-style (3)
Microbiology 360. Microorganisms in Human History (2)
* Psychology 150. Psychology of Individual Adjustment (3)
* Psychology 330. Developmental Psychology (3)
* Sociology 523. The Sociology of Mental Illness (3)
* Sociology 526. Medical Sociology (3)

16. The Urban Experience

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

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

17. Ancient Sources of the Western Tradition

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

* Anthropology 478. Post-Pleistocene Archaeology of Europe (3)
* Art 568. Art of Crete, Mycenae, Greece, and Rome (3)
Classics 310. Greek and Roman Mythology (3)
Classics 320. Classical Literature (3)
Classics 330. Classical Drama (3)
Classics 340. Classical Civilization (3)
Comparative Literature 505. The Bible as Literature (3)
English 505. The Bible as Literature (3)
History 500A. Ancient History (3)
History 500B. Ancient History (3)
* Natural Science 315. History of Science I (3)
* Philosophy 301. History of Philosophy I (3)
* Political Science 301A. Theory of the State (3)

18. The Emergence of Western Civilization

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

* Art 571. Medieval Art (3)
Comparative Literature 510. Medieval Literature (3)
European Studies 401A. The Cultural Heritage of Europe I (3)

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

History 503A. Europe in the Middle Ages (3)
History 503B. Europe in the Middle Ages (3)
* Philosophy 502. History of Philosophy II (3)
* Religious Studies 310. Greek and Latin Fathers (3)
* Religious Studies 314. Medieval Western Christianity (3)

19. Western Civilization from the Renaissance Through the Age of Enlightenment

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

Comparative Literature 511. Continental Renaissance (3)
Comparative Literature 512. Seventeenth and Eighteenth Century European Literature (3)
English 260A. English Literature (3)
European Studies 401B. The Cultural Heritage of Europe II (3)
European Studies 402A. The Cultural Heritage of Europe III (3)
History 307A. Modern Europe (3)
Music 351A. Musical Masterpieces of the 18th and 19th Centuries (3)
* Natural Science 316. History of Science II (3)
* Philosophy 303. History of Philosophy III (3)
* Political Science 301B. Theory of the State (3)
* Religious Studies 316. The Reformation and Beginnings of Modern Christianity (3)

20. Western Civilization in the Modern Age

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

* Anthropology 440. Cultures of Europe (3)
Comparative Literature 513. Nineteenth Century European Literature (3)
European Studies 402B. The Cultural Heritage of Europe IV (3)
History 307B. Modern Europe (3)
Humanities 131. The Jewish Heritage II (3)
* Natural Science 305. Modern Physical Science (3)
* Philosophy 504. History of Philosophy IV (3)
* Philosophy 505A. Twentieth Century Philosophy (3)
* Philosophy 505B. Twentieth Century Philosophy (3)
Political Science 356. Governments of Continental Europe (3)
* Religious Studies 318. Recent Christianity (3)
Women's Studies 340. Women in History (3)

21. East Asia: Traditions and Transformations

This theme presents an interdisciplinary approach to East Asian cultures. The emphasis is on China and Japan, but a number of courses also treat the Indian sources of East Asian traditions and the impact of China and Japan on adjacent areas and the West.

* Anthropology 451. Chinese Society (3)
* Anthropology 452. Japanese Society (3)
* Anthropology 481. Archaeology of East Asia and Oceania (3)
Art 264. Chinese Art (3)
Art 265 Japanese Art (3)
Asian Studies 458A. Asian Cultures (3)
Comparative Literature 530. Asian Literature (3)
* Economics 465. Economic Problems of South and East Asia (3)
* Geography 331. Eastern Asia (3)
History 320. Asia's Dynamic Traditions (3)
History 561B. The Far East (3)
* Philosophy 596. Topics in Asian Thought (3)
Political Science 562. Governments and Politics of the Far East (3)
* Religious Studies 503. Religions of the Far East (3)

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

22. South and Southeast Asia: Traditions and Transformations

This theme presents an interdisciplinary approach to South and Southeast Asian cultures. The emphasis of this theme is the traditional values of this area and their transformation in modern times.

* Anthropology 447. Cultures of Southeast Asia (3)
* Anthropology 450. Cultures of India (3)
* Art 565. The Art of India and Southeast Asia (3)
Asian Studies 458B. Asian Cultures (3)
Comparative Literature 271B. Asian Literature (3)
* Economics 465. Economic Problems of South and East Asia (3)
* Geography 333. Southeastern Asia (3)
* Geography 334. Southern Asia (3)
History 562. Civilization of India: The Great Traditions (3)
History 563. The Modern Indian Subcontinent (3)
History 564A. Southeast Asia (3)
History 564B. Southeast Asia (3)
* Religious Studies 501. Religions of India (3)

23. Cultures and Civilizations of Africa

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

* Anthropology 449. Cultures of Sub-Saharan Africa (3)
* Anthropology 479. Archaeology of Africa (3)
Comparative Literature 540. African Literature (3)
* Geography 330. Africa, South of the Sahara (3)
History 575A. Africa (3)
History 575B. Africa (3)
Humanities 158. African Culture and Civilization (3)
Political Science 364. Political Change in Contemporary Africa (3)

24. Cultures and Civilization of the Middle East

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

* Anthropology 453. Near Eastern Societies (3)
* Art 566. The Art of Persia and the Islamic World (3)
Comparative Literature 535. Near Eastern Literature (3)
* Economics 469. Economic Problems of Africa and the Middle East (3)
* Geography 335. The Middle East and North Africa (3)
History 573A. History of the Near East from the 7th Century to World War I (3)
History 573B. History of the Near East from the 7th Century to World War I (3)
History 574. The Near East in the Twentieth Century, 1914 to Present (3)
Humanities 157. Arab-Islamic Culture and Civilization (3)
Humanities 357. Islamic Culture and Civilization (3)
Political Science 563. Government and Politics of the Middle East (3)
* Religious Studies 340. Islam (3)

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

25. Culture and Civilization of Latin America

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

* Anthropology 442. Cultures of South America (3)
* Anthropology 443. Contemporary Latin American Cultures (3)
* Anthropology 477. Postclassic Cultures of Mesoamerica (3)
* Art 561. Arts of the Pre-Hispanic Americas (3)
* Art 562. Colonial Art of Latin America (3)
Comparative Literature 545. Modern Latin American Literature (3)
* Economics 464. Economic Problems of Latin America (3)
* Geography 323A. Middle America (3)
* Geography 323B. Middle America (3)
* Geography 324. South America (3)
History 315A. Latin America (3)
History 315B. Latin America (3)
Latin American Studies 101. Latin American Heritage (3)
Latin American Studies 341. Latin American Civilization (3)
* Political Science 566. Political Change in Latin America (3)
* Political Science 567. Political Systems of Latin America (3)

26. The Other Europe: Soviet Russia and East Europe

In political, military, ideological, scientific, economic and many other realms, the Soviet-East European nations confront the United States with its major challenge of the twentieth century. Despite historic diversity and antagonism among many of these nations, the advent of Marxism-Leninism has transformed the area into a political-military bloc with strong pressures toward conformity in social and ideological matters. This theme provides a broad assessment of this area of the world with special attention to the Soviet Union as the principal force for development and change.

* Economics 313. Marxian Economic Theory (3)
* Economics 468. The Economics of the Soviet Union and Eastern Europe (3)
European Studies 331. Russian Civilization (3)
* Geography 337. Soviet Union (3)
History 518A. Russia and the Soviet Union (3)
History 518B. Russia and the Soviet Union (3)
Political Science 359. Government of the Soviet Union (3)
Political Science 558. Comparative Communist Governments (3)
Russian 305A. Survey of Russian Literature (3)
Russian 305B. Survey of Russian Literature (3)
Russian 563. Russian Literature of the Twentieth Century (3)

27. Foreign Language Study

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

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

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

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/her option, elect to revert to the standard program in effect at the time of graduation; any students who change their major shall revert to the standard program or 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.

II. Major and Minor Requirements

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

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

C. **Major.** Completion of a departmental or an interdisciplinary major is required. A major is an area of specialized study which provides the student with extensive knowledge of the subject matter and its organizing concepts. It consists of 24 or more upper division units for the Bachelor of Arts, Bachelor of Music, and Bachelor of Vocational Education degrees; and of 36 or more units for the Bachelor of Science degree. At least half of the units must be completed at SDSU unless specifically waived by the department; units received through SDSU extension courses are not applicable to this requirement. A summary list of all majors appears at the close of this chapter; the full statement of requirements for each major can be found through the Index. Courses taken in satisfaction of the major cannot be used to meet requirements in general education or a minor.

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

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

III. American Institutions Requirement

Three units in courses taken to satisfy the American Institutions requirement may be used for general education credit in the Humanities or Social Science section if listed there.

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 110A-110B
History 115A-115B
History 310A-310B
History 547A-547B
Mexican-American Studies 120A and 120B
Mexican-American Studies 141A and 141B
Political Science 101 and 102
Political Science 320 and 321
Political Science 305 and 320
Political Science 320 and 522
Political Science 305 and 321
Political Science 305 and 522

C. **Examinations and courses:** By passing any one or two of the aforementioned examinations AND course work appropriate to the remaining area or areas. Courses applicable to each area are listed below.
1. American History, Institutions and Ideals:
All courses listed in III.B above and History 537A-537B, 544A-544B, 545A-545B.
2. United States Constitution:
Afro-American Studies 170A; History 110A, 115A, 310A, 531, 532, 545A, 545B, 547A; Mexican-American Studies 120A, 141A; Political Science 102, 320, 547A and 547B.
3. California State and Local Government:
Afro-American Studies 170B; History 110B, 115B, 310B, 541B, 547B; Mexican-American Studies 120B, 141B; Political Science 102, 320, 321, 522.

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

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

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

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

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

Secondary school language courses can be used to satisfy this requirement, as follows: 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.

Native speakers from foreign countries who have finished high school or the equivalent in that country 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.

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

Eight to twelve units (or equivalent knowledge demonstrated in a test of reading knowledge administered by the foreign language department concerned in consultation with the Department of Music) as follows:

1. *Vocalists* — one semester each of French, German, and Italian.
2. *Music history and literature students* — 12 units of French, German, or Italian.
3. *All other* — eight units of one foreign language chosen from French, German, or Italian (except that classical guitar students may substitute Spanish).

V. Physical Activities Requirement

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

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

VI. Competency Requirements

Competency in basic mathematics and writing skills is regarded as essential to successful study in a university environment. The University asks all students to demonstrate their competence in these important skills in the following ways.

A. **Mathematics.** The Mathematics Competency Requirement can be satisfied in any of four ways:
1. By a score at the 50th percentile or higher on the mathematics section of the Scholastic Aptitude Test (SAT).
2. By a score at the 50th percentile or higher on the mathematics section of the American College Test (ACT).
3. By a passing score on the Mathematics Competency Test or the Mathematics Competency Retest administered by the SDSU Test Office.
4. By a passing grade in Mathematics 102, 103, 118, or higher numbered course.

B. **Writing.** All undergraduates, both freshmen and transfers, must satisfy this requirement at time of entrance or within two semesters thereafter. The completion of prior examinations and/or courses in English composition or remedial English is not a basis for exemption. The requirement can be satisfied at time of entrance by any of the following:
1. By a passing score on the Test of Standard Written English (TSWE), offered as a part of the Scholastic Aptitude Test (SAT) since October 1974.
2. By a passing score on the verbal section of the American College Test (ACT).
3. By a score of 3, 4, or 5 on the College Entrance Examination Board's (CEEB) Advanced Placement Test in English.
4. By a passing score on the English Equivalency Examination (EEE) administered by The California State University and Colleges each spring in most California high schools.
5. By a passing score on the English Placement Test (EPT) administered through The California State University and Colleges.

Students who have not satisfied this requirement at time of entrance must take a writing placement test (the EPT is for students with less than 56 units; the TSWE is for students with more than 56 units) at the SDSU Test Office sometime prior to or during their first semester on campus. Students whose scores fall below an acceptable range on this test must register in University Studies 150 (Writing Development, 3 units) in either their first or second semesters at SDSU. Failure to do so will result in Administrative Disqualification at the end of the second semester; reinstatement thereafter will be conditional upon satisfaction of this requirement.

Note: All students subject to degree requirements of 1977-78 and subsequent general catalogs must demonstrate competency in writing skills as a requirement for graduation. In addition, all lower division students (those who enter with fewer than 56 transferable semester units) are required to take the CSUC English Placement Test (EPT) so that information can be available to help in the selection of appropriate course work in writing skills and to prepare for meeting the graduation requirement. Failure to take the English Placement Test at the earliest opportunity after admission may lead to administrative probation which, according to section 41300.1 of Title 5, *California Administrative Code*, and CSUC Executive Order 186, may lead to disqualification from further attendance. *The*

results of the EPT will not affect admissions eligibility.

Information bulletins and registration materials for the EPT will be mailed to all students subject to these requirements. Alternatively, the materials may be obtained from the Office of Admissions and Records. Information on currently available ways to meet the graduation requirements in mathematics and writing may be obtained from the Dean of The University College.

VII. Unit Requirements

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

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

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

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

1. For the Bachelor of Arts degree in Applied Arts and Sciences 40
2. For the Bachelor of Arts degree in Liberal Arts and Sciences 45
3. For the Bachelor of Science degree (except engineering) 36
4. For the Bachelor of Science degree in Engineering 36
5. For the Bachelor of Music degree 40
6. For the Bachelor of Vocational Education degree 40

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

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

1. From transferable community and junior college courses 70
2. From credit by examination 30
3. From extension and correspondence courses 24
4. From credit/no credit courses 24
5. From University Studies courses in area of Study Skills courses or Mathematics 102 6
6. From Experimental Topics courses numbered 299 9
7. From Experimental Topics courses numbered 496 and 596 9
8. From University Studies courses numbered 200 and 400 6

D. **Units in one department.**

1. **Bachelor of Arts degree in Liberal Arts and Sciences.** The maximum number of units in any one department, lower and upper division combined, which can be applied toward the Bachelor of Arts degree in Liberal Arts and Sciences is 48, except in journalism. Students majoring in journalism may not accumulate more than 36 units of credit in journalism courses.
2. **Bachelor of Music degree.** The maximum number of units in upper division music courses acceptable toward the Bachelor of Music degree is 70.
3. **Bachelor of Science degree in Business Administration.** The minimum number of units in business administration and economics courses necessary for a Bachelor of Science degree in any of the seven business majors is 52 (40 percent of 128 units). In addition, the minimum number of units from departments outside of business administration and economics is likewise 52 (40 percent of 128 units).
4. **Other degrees.** The maximum number of units per department for other degrees is left to the discretion of the student, except the Bachelor of Arts degree in Applied Arts and Sciences with a major in Radio-Television in which no more than 48 units in telecommunications and film may be counted toward the total units required for graduation.

VIII. Residence Requirement

A minimum of 30 units must be earned in courses taken at San Diego State University. Twenty-four of these units shall be earned in upper division courses. Courses taken in extension and units earned through credit-by-examination may not be used to fulfill this requirement. In addition at least one-half of the upper division units required for the major must be taken at this institution unless specifically waived by the department.

IX. Grade Point Average Requirements

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

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

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

Application for Graduation

Graduation is not automatic on the completion of requirements. Students who intend to graduate must take the initiative. When they believe that they are eligible, they should file an application with the Evaluations Office, Administration Building, not later than the end of the third week of classes in the fall if they want to graduate in mid-year, and not later than the end of the eleventh week of classes in the fall if they want to graduate in May or at the end of summer session. The Class Schedule each semester specifies the exact date. An application fee of $6.00, which is nonrefundable and nontransferable, is required. After the degree is granted no changes can be made in the undergraduate record.

Election of Regulations for Graduation

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

Graduation With Honors and Distinction

Graduation with honors is granted to those undergraduate students in each graduating class who 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.

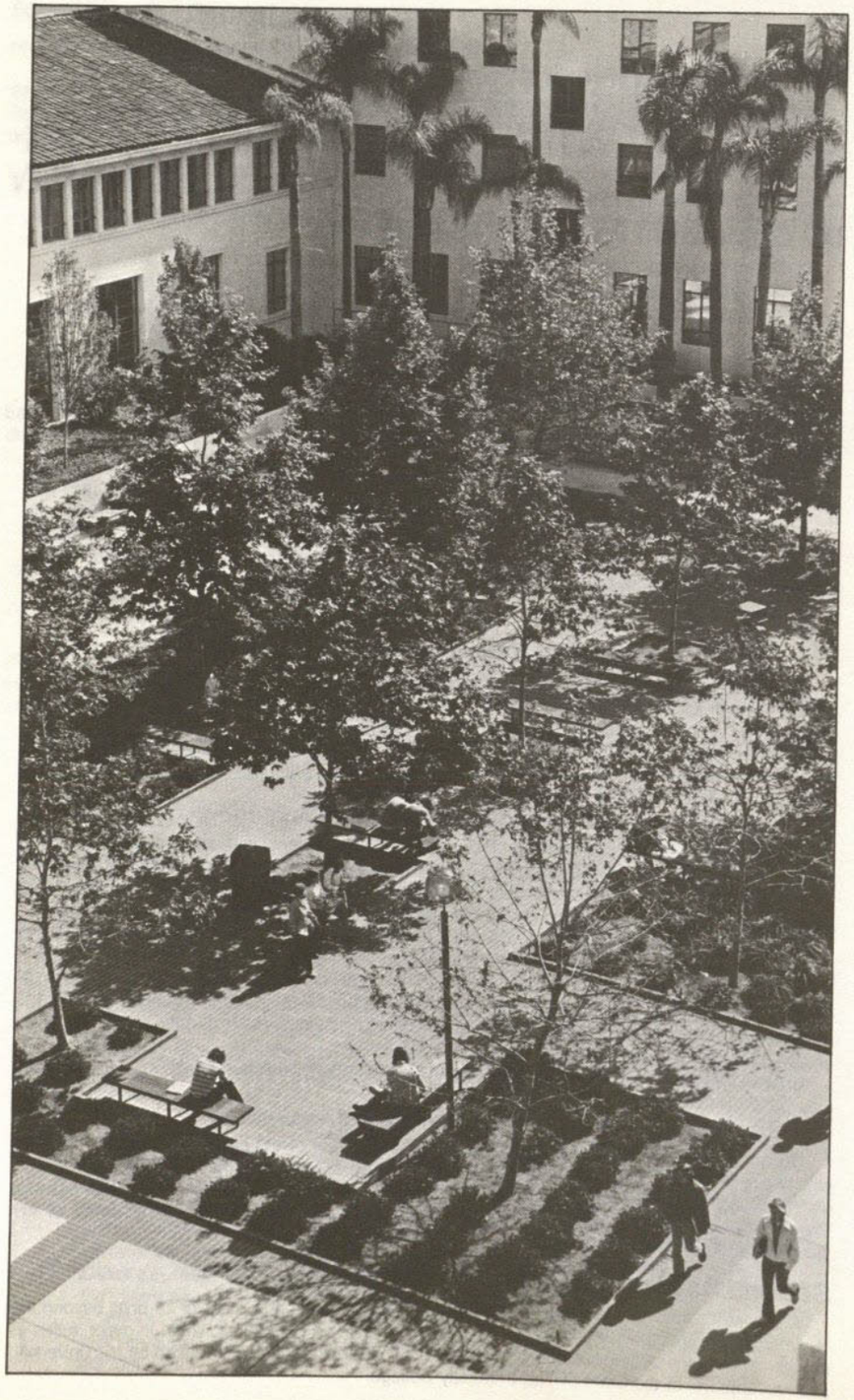
Upon recommendation of their major department, students doing superior work in their major field may be graduated with distinction in that field.

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 undergraduate students who expect to complete requirements for graduation in the summer session. The President of the University, by the authority of the Trustees and on recommendation of the faculty, awards the degrees.

Second Bachelor's Degree

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



Curricula

Summary

Summary of Curricula Offered

Majors	Arts and Sciences Curricula: Applied Arts and Sciences AB	Arts and Sciences Curricula: Applied Arts and Sciences BS	Arts and Sciences Curricula: Liberal Arts and Sciences AB	Graduate Curricula: Graduate Division MA	Graduate Curricula: Graduate Division MS
## Accounting	....	BS			
Aerospace engineering	....	BS		....	MS
Afro-American studies			AB		
** American studies			AB	MA	
Anthropology			AB	MA	
Art	AB	....	AB	MA	
** Asian studies			AB	MA	
Astronomy	AB	....	AB	....	MS
Biology	AB	BS	AB	MA	MS
Botany	....	BS	AB		
† Business administration				MBA	MS
Chemical physics	....	BS			
Chemistry	AB	BS		MA	MS
					%Ph.D.
** Child development	....	BS			
¶† City planning				....	MCP
Civil engineering	....	BS		....	MS
Classics			AB		
** Comparative literature			AB		
¶¶ Computer science	AB	....	AB	....	MS
† Counseling				....	MS
Criminal justice administration	....	BS		....	MS
Drama	AB	....		MA	MFA
# Ecology				....	Ph.D.
Economics			AB	MA	
† Education				MA	
Electrical engineering	....	BS			
Engineering	....	BS		....	MS
English			AB	MA	
†† Environmental health	....	BS			
** European studies			AB		
## Finance	....	BS			
French			AB	MA	
§ Genetics				....	Ph.D.
Geography			AB	MA	
Geology	....	BS			
German			AB	....	MS
Health science	....	BS		MA	
History			AB	MA	
Home economics	AB	....		....	MS
Industrial arts	AB	....		MA	
Industrial technology	....	BS			
## Information systems	....	BS			
## Insurance	....	BS			
Journalism			AB		
** Latin American studies			AB	MA	
** Liberal studies	AB	....	AB		
** Linguistics			AB	MA	
## Management	....	BS			
## Marketing	....	BS			
**† Mass communication				....	MS
Mathematics	....	BS	AB	MA	MS
Mechanical engineering	....	BS		....	MS
Mexican-American studies			AB		

Summary of Curricula Offered — Cont.

Majors	Arts and Sciences Curricula: Applied Arts and Sciences AB	Arts and Sciences Curricula: Applied Arts and Sciences BS	Arts and Sciences Curricula: Liberal Arts and Sciences AB	Graduate Curricula: Graduate Division MA	Graduate Curricula: Graduate Division MS
Microbiology	....	BS	AB	....	MS
Music	AB	BM		MA	
Nursing	....	BS			
Philosophy			AB	MA	
Physical education	AB	....	AB	MA	
Physical science	*AB	....			
Physics	....	BS	AB	MA	MS
Political science			AB	MA	
Psychology			AB	MA	MS
Public administration	AB	....		....	MPA
† Radiological physics				....	MS
%% Radio-television	AB	BS		MA	
## Real estate	....	BS			
Recreation administration	AB	....			
† Rehabilitation counseling				....	MS
Religious studies			AB		
Russian			AB	MA	
** Russian and East European studies			AB		
** Social science			AB	MA	
• Social welfare	AB	....	AB		
† Social work				....	MSW
Sociology			AB	MA	
Spanish			AB	MA	
Special major				MA	
Speech communication	AB	....		MA	
Speech pathology and audiology	AB	....		MA	
¶¶ Statistics				....	MS
Vocational arts	....	BVE			
Zoology	....	BS	AB		

%% Offered by the Department of Telecommunications and Film.
* Limited to students in Teacher Education.
† For master's degree only (not an undergraduate major).
% Offered jointly with the University of California, San Diego.
§ Offered jointly with the University of California, Berkeley.
# Offered jointly with the University of California, Riverside.
A concentration with the B.S. in Business Administration.
** An interdisciplinary program.
¶ Offered by Public Administration and Urban Studies.
†† Offered by the Department of Microbiology.
• Offered by the School of Social Work.
¶¶ Offered by the Department of Mathematics.

SPECIAL CURRICULA

Preprofessional Curricula
Predental
Prelegal
Premedical

Medical Technology

Military Curricula
Aerospace studies (A.F.R.O.T.C.)

Certificate (nondegree) Programs
Certificate in American literature
Certificate in applied linguistics
Certificate in construction practices
Certificate in criminal justice administration
Certificate in financial management (banking, real estate or insurance)
Certificate in fire protection administration
Certificate in governmental administration
Certificate in human resources management
Certificate in international relations
Certificate in materials management
Certificate in personnel and labor relations
Certificate in public administration

Teaching Credentials

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

Minors for the Bachelor's Degree

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

The University College

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

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

The furtherance of innovative and nontraditional education on the campus is a principal concern of The University College, and toward this end, it sponsors the Coordinated Freshman Studies 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 groups of 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 creative thought; the problems of ecological balance; ethics, values and institutions; 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 1978-79 fall semester is June 30, 1978.

Honors Program

University Honors Program

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

Students may apply by contacting The University College (AD-223) at entrance, or before completion of three semesters. Eligibility for the program is determined by an SAT score of approximately 1150 or above (ACT 27), or by a superior GPA at the University. Those interested in Coordinated Freshman Studies may be enrolled in both programs concurrently.

Departmental Honors Courses

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

New Hampshire Exchange Program

Students eager to attend a university on the East Coast for a semester may take advantage of the exchange program established between San Diego State University and the University of New Hampshire. The program permits participants to pay normal fees at their home campus while involved in the exchange, thus relieving them of additional tuition costs. Students must provide their own travel and room and board expenses; however, those currently receiving financial aid may continue to be qualified for it. Credits earned at New Hampshire are transferable to the home campus. To be eligible, the student must have completed at least 30 units by the exchange date, with 12 units completed at SDSU at the time of application. (Minimum GPA should be 2.5.) Students may apply to The University College office before October 20, 1978 for the spring semester exchange, and before March 2, 1979 for the following fall.

Study Skills Center

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

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

Test Office

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

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 the Graduate Council under the chairmanship of the Dean of the Graduate Division, who also serves as the administrative officer of the Graduate Division.

The Graduate Division admits all students to the University and to authorized graduate degree curricula, determines their eligibility to continue in such curricula, and, in the cases of unsatisfactory performance, requires students to withdraw from graduate curricula and the University.

The Dean of the Graduate Division is the appropriate university authority for the administration of all matters related to graduate degree curricula, minimum requirements for which are specified in Section 40504 of the ***California Administrative Code***.

Association Membership

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

Degrees Offered

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

Doctoral degrees are awarded jointly by the Board of Regents of the University of California and the Board of Trustees of The California State University and Colleges in the names of San Diego State University and the cooperating campus of the University of California.

Doctor of Philosophy

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

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

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

Master of Arts

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

American studies
Anthropology
Art
Asian studies
Biology
Chemistry
Drama
Economics
Education
English
French
Geography
German
Health science
History
Industrial arts
Latin American studies
Linguistics
Mathematics
Music
Philosophy
Physical education
Physics
Political science
Psychology
Radio and television
Russian
Social science
Sociology
Spanish
Special major
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
Statistics

Master of Business Administration

Master of City Planning

Master of Fine Arts in Drama

Master of Public Administration

Master of Social Work

Admission to Postbaccalaureate Study

Admission to San Diego State University for postbaccalaureate study is on a controlled basis and limited to those applicants judged by the University to be fully qualified and to those who can benefit from the experience. The requirements listed below are the minimum required for admission to the University. For many programs, the departments have established additional quality and prerequisite requirements. Potential applicants should refer to the Graduate Division Bulletin under the departmental listings. Students are also advised to contact the departmental offices just as soon as graduate work is contemplated in the final baccalaureate year for advice as to how to proceed. Some departments stop reviewing applications earlier than others because of the limited space available.

Application Procedures

All applicants for postbaccalaureate study (e.g., advanced degree applicants, those seeking credentials, and those interested in taking courses for professional growth, etc.) must file a complete application within the appropriate filing period. ***Second baccalaureate degree aspirants 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- and 700-numbered courses. Admission with postbaccalaureate standing (unclassified) does not constitute admission to, or assurance of consideration for admission to, advanced degree curricula.

Postbaccalaureate Standing (Classified)

A student wishing to be admitted to a program leading to a credential **only** (not an advanced degree) must meet the criteria specified under General Requirements. Such a student must also meet the professional, personal, scholastic and other standards prescribed by the appropriate department in the School of Education. The applicant should contact the department involved for information concerning specific admission requirements, and should submit a departmental application during the appropriate filing period. Admission with postbaccalaureate standing (classified) does not constitute admission to, or assurance of consideration for admission to, advanced degree curricula.

Graduate Standing (Classified)

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

(a) Achieve a satisfactory score on the Graduate Record Examination 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 Management Admission Test.)
(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- and 700-numbered courses. Once the conditions established by the department or school have been met, the student will be accorded full graduate standing (classified).

A student who is already enrolled in the University with postbaccalaureate standing may request acceptance into an advanced degree curriculum with graduate standing (classified). Applications for such continuing students are available at the Graduate Division Office.

Graduate Bulletin

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

Nondegree Curricula

Preprofessional Programs

Preprofessional Programs

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

Predental Curriculum

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

Regardless of the major predental students should include the following courses in their program: Botany 200 and Zoology 200; Biology 215, 503; Zoology 503 or Biology 541; Chemistry 200, 200L, 201, 201L, 231, 231L, 431, 431L; Mathematics 150 and 151 or 121 and 122; Physics 124A and 124B or 194A and 194B, 125A, 125B; or 195, 195L, 196, 196L, 197, 197L; Psychology 101.

In addition to the courses listed, students should fulfill all requirements for their major and, if possible, take at least one advanced course recommended by their department such as Biology 502; Microbiology 310, 330; Zoology 506, 508, 535. The students are also expected to obtain information regarding the entrance requirements of specific dental schools.

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

The Preprofessional Health Adviser will be available to high school or transfer students from May 15-30 and during the registration period by appointment. All predental students should sign up at Physics Room 236, 286-6638.

Prelegal Curriculum

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

The following curriculum is designed to meet the requirements of standard American schools of law for a broad and liberal education, while at the same time providing desirable flexibility in the individual programs. There are two patterns of concentration which will usually be indicated for the 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 101 and 102, Political Science 101 and 102, and a year course in history. Upper division: In the junior and senior years students will plan their course with the counsel of their adviser in terms of the field of law in which they plan to work, but keeping in mind the entrance requirements and examinations for admission to schools of law. The following list should receive 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 323; Economics 370, 401, 490; History 521A-521B, 545A-545B; Political Science 301A-301B, 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: Botany 200 and Zoology 200; Biology 215, 503; Biology 541 or Zoology 503; Chemistry 200, 200L, 201, 201L, 231, 231L, 431, 431L, 250 or 251, 310A and 310B or 410A and 410B, 361A and 361B or Biology 502; Mathematics 150, 151; Physics 194A, 194B, 125A, 125B; or 195, 195L, 196, 196L, 197, 197L.

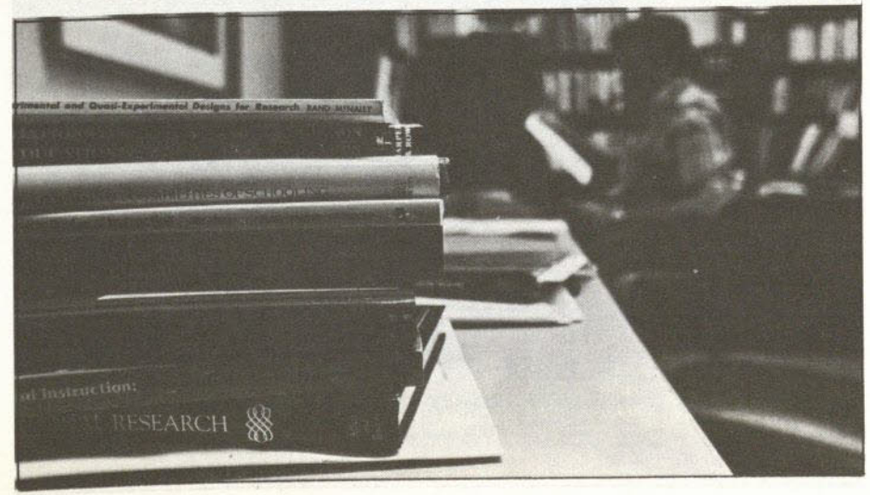
In addition to the courses listed, students should fulfill all requirements for their major and, if possible, take at least one advanced course recommended by their department such as: Biology 502, 564, 568; Microbiology 310, 330; Zoology 506, 508, 535; Chemistry 361A-361B or 560A-560B. The students are also expected to obtain information regarding the entrance requirements of specific medical schools.

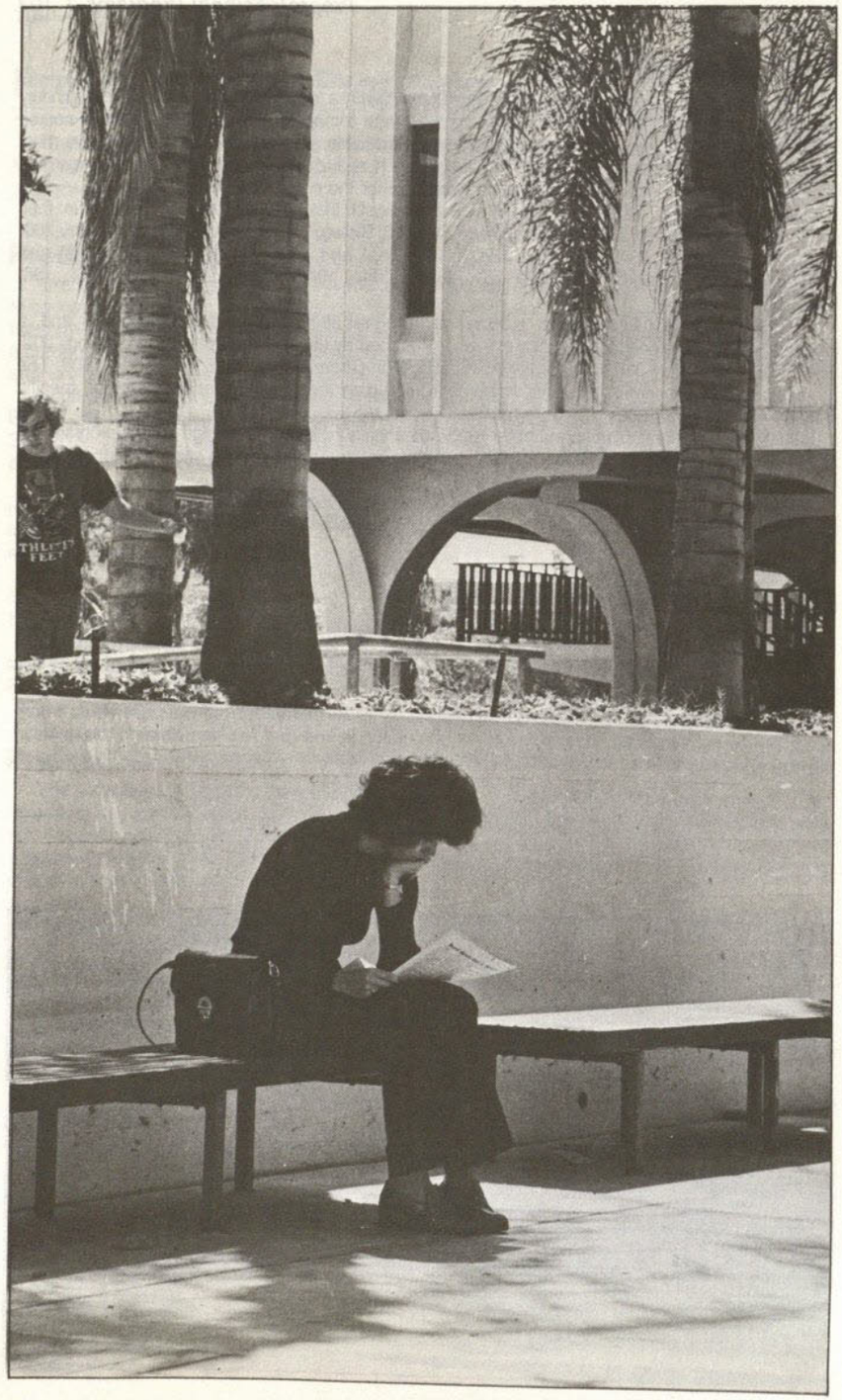
High school students planning to enter medicine should include in their high school program the following subjects: elementary algebra, plane geometry, intermediate algebra, chemistry, physics and two or three years of French or German.

The Preprofessional Health Adviser will be available to high school or transfer students from May 15-30 and during the registration period by appointment. All premedical students should sign up at Physics Room 236, 286-6638.

Preparation for Other Professions

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





College of Extended Studies

Continuing Education
External Degree Programs

Continuing Education

Functions

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

Summer Programs

The College of Extended Studies administers a comprehensive summer program for San Diego State University. Approximately 400 regular courses, workshops, short courses, interdisciplinary and experimental offerings, and special programs are available for matriculated students, students from other institutions and special groups. Selected degrees and certificate programs are available for individuals who can only attend school during the summer. Credit earned during the summer is applicable to graduation and residence requirements; however, admission to the University is not required for summer attendance.

Three sessions are scheduled each summer; two 3-week terms during which four units of credit may be earned and one 6-week term in which students may earn seven units of credit. The summer program is offered from the first of June through the middle of August each year. For information contact the Director of Summer Programs.

Extension Programs

In order to meet the needs of the adult community, as well as matriculated students, the Division of Extension Programs administers a variety of extension courses and workshops, concurrent enrollment, a wintersession, and external degree programs. For the convenience of adult students most courses are scheduled in the evenings or on weekends; on campus or at convenient learning extension centers throughout the service area. The following categories of programs are offered through this division.

Extension

Extension courses are offered each semester in a number of areas including education, business administration, public administration, and the arts and sciences. Many courses and programs are developed in cooperation with off-campus organizations and groups who have identified specific needs. The usual class carries three units of extension credit, although many one-unit weekend workshops are also offered throughout the year. These courses are listed in a special Extended Studies Program Bulletin published each semester.

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

Concurrent Enrollment

A limited number of regular, on-campus classes are open to qualified extension students by special permission of the department and the instructor. Students who take advantage of "Concurrent Enrollment" are required to pay regular extension fees. They are permitted to enroll only after matriculated students have completed their registration.

Wintersession

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

International Programs

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

Cooperating universities abroad include the University of Provence, France; the Universities of Heidelberg and Tubingen, Germany; the Hebrew University of Jerusalem in Israel; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; the Universidad catolica, Peru; the Universities of Granada and Madrid, Spain; the University of Uppsala, Sweden; Lincoln University College of Agriculture and Massey University, New Zealand; and Waseda University of Japan. In the United Kingdom, cooperating universities (which may vary from year to year) include, among others, Aberdeen, Dundee, Edinburgh, Bangor, Heriot-Watt, Leicester, London, Manchester, Nottingham, Oxford, Liverpool, Lampeter, Sheffield, and Strathclyde. In addition, CSUC students may attend a special program in Taiwan, Republic of China, or an architecture program in Copenhagen, Denmark.

Eligibility for application is limited to those students who will have upper division or graduate standing by September 1979 at a CSUC campus; who have demonstrated the ability to adapt to a new cultural environment; and, who, in the cases of France, Germany, Mexico, Peru, and Spain, will have completed at least two years of college-level study in the language of instruction at the host university, or possess equivalent knowledge of the language. At the time of application, students must have a minimum cumulative grade point average (g.p.a.) for all college-level work of 2.5, except for the programs in Israel, New Zealand, Peru, and the United Kingdom where a minimum g.p.a. of 3.0 is required. Selection is competitive and is based on home campus recommendations and the applicant's academic record. Final selection decisions are made by a statewide committee of faculty members, except for the programs in New Zealand and the United Kingdom where final selections are made by the respective host universities.

The International Programs supports all tuition and other academic and administrative costs overseas for each of its participants to the same extent that such funds would be expended to support similar costs in California. Students assume costs for pre-departure orientation, insurance, transportation, housing, and meals. Home campus registration and other fees and personal incidental expenses or vacation travel costs while abroad are also paid by the student. Nonresident students are subject to nonresident fees. The Office of International Programs collects and administers funds for those items which the program must arrange or can negotiate more effectively, such as home campus fees, orientation costs, insurance, outbound transportation, and, in some centers, housing. International Programs participants may apply for any financial aid available at their home campuses, except for campus work-study.

Applications for the 1979-80 academic year must be submitted before February 9, 1979, except for New Zealand and the United Kingdom. Applications for the New Zealand program must be submitted by May 11, 1979, for participation during calendar year 1980. (The academic year in New Zealand begins in February and ends in October.) United Kingdom applications must be submitted by January 5, 1979.

Detailed information and application materials may be obtained from the College of Extended Studies; further information may also be obtained by writing to The California State University and Colleges International Programs, 400 Golden Shore, Suite 300, Long Beach, California 90802.

External Degree Programs

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

Contact the Director of Extension Programs for additional information on Extension, External Degrees (except those offered for the military), The Wintersession, Concurrent Enrollment, and International Programs.

Conferences and Professional Programs

The Division of Conferences and Professional Programs designs, implements and administers a comprehensive, year-round, University conference operation for on- and off-campus conferences, meetings, seminars, and workshops. Professional certificate programs are coordinated by this division and educational services are provided for a wide variety of groups and professional organizations. The Division also coordinates the activities of the Center for Continuing Education in Business in cooperation with the School of Business Administration. For additional information contact the Director of Conferences and Professional Programs.

Certificate Programs

The following certificate programs are available through the division of Conferences and Professional Programs:

+ Applied Linguistics
Construction Practices
* Criminal Justice Administration
Fire Protection Administration
Labor Relations
Materials Management
Personnel Administration
* Public Administration

For further information contact the Director of Conferences and Professional Programs.

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* For further information contact the Director of Public Administration.
+ For further information contact the Department of Linguistics.

Military Education Programs

The Division of Military Education Programs serves as the liaison with the military installations in the University service area for the purpose of developing higher educational opportunities for military personnel. The University, which has been designated by the Department of Defense as a Servicemen's Opportunity College, offers a wide variety of external degree and certificate programs designed specifically for military personnel, including Bachelor of Science degree offerings in Engineering Technology, Industrial Technology and Health Care Administration and a Bachelor of Arts degree in Business Administration and Liberal Arts. Most classes are held on base for the convenience of the students, while some are scheduled on the University campus to take advantage of laboratories and other resources. This division also administers special certificate programs for the military including American literature, human resources management, and construction practices.

For additional information contact the Director of Military Education Programs.

Retired Adults Education Program

The Educational Growth Opportunities Program (EGO) is sponsored by the College of Extended Studies at San Diego State University.

EGO's programs for retired adults living in the San Diego area are planned for and taught by senior adults who are interested in furthering the educational growth of retired persons.

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

American Language Programs

The College of Extended Studies offers four noncredit English language programs for international students. Academic English for the University Bound is a program offered in semester-long segments to students who intend to matriculate in American colleges or universities. The American Language and Culture Program is offered in quarterly segments to students whose goals are to improve their spoken English and better understand American customs and life-styles. Additionally, the division offers month-long programs in the English of Business and Economics for students or business people. In summer, accelerated English language workshops for students, teachers and business people are provided.

Information about and applications for these programs may be obtained from the Director of the American Language Program.

Foreign Travel/Study Programs

Each summer the College offers a variety of travel/study programs which are designed to give students and community members an opportunity to travel abroad and earn extension units of credit. Programs range from two to five weeks in length, with a maximum of six units of credit offered for the longer programs. Participants need not be regularly matriculated students at SDSU. For further information contact the Coordinator of Foreign Travel/Study Programs.

External Degree Programs

Purpose

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

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

Admission Requirements

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

Admission and Enrollment Procedures

Students who desire to become classified candidates for the degree must apply for admission to the degree program by completing the following steps prior to earning nine units of credit in that program:

1. Complete and submit Application for Admission.
2. Request transcripts from last high school and all colleges and universities attended; transcripts must be received directly from the school.
3. Submit a one-time admissions fee of $20.00.

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

Instruction and Scheduling

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

Curriculum

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

Special Provisions for the Military

San Diego State University subscribes to the policy and criteria of the Department of Defense Servicemen's Opportunity College Program as these apply to external degree programs. Through the College of Extended Studies academic programs are offered which afford service personnel special considerations by:

Increasing academic opportunities to pursue higher education through course offerings on military bases;

Providing opportunities for military students to complete academic work interrupted by military duties;

Providing a designated SOC Counselor who is familiar with the problems attendant to pursuing an education while in the Armed Forces;

Providing the maximum allowable recognition of credit from such nontraditional modes as DANTES, CLEP, CEEB, and ACE Guide to the Evaluation of Educational Experiences in the Armed Services; and

Allowing a military student to continue to satisfy program curriculum requirements at another regionally accredited institution in accordance with the provisions of his/her Servicemen's Academic Agreement and Program of Studies.

Fees

Since Continuing Education and External Degree programs do not receive state support, they are required to be financially self-supporting. Fees for external degree courses range from $45 to $65 per semester unit.

Degrees Offered

Graduate:

Master of Arts degree in public administration.
Master of Arts in vocational education.
(For graduate external degree program details, refer to the Graduate Catalog of the Graduate Division.)

Undergraduate:

*Major in business administration with the A.B. degree.
Major in criminal justice administration with the B.S. degree.
Major in engineering technology with the B.S. degree.
*Major in health care administration with the B.S. degree.
Major in industrial technology with the B.S. degree.
*Major in liberal arts with the A.B. degree.

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

Business Administration Major

With the A.B. Degree

The external program in business administration is designed to meet the needs of persons whose geographic location and personal and professional commitments prohibit regular classroom attendance on campus. The curriculum includes a full range of subjects to prepare individuals for administrative and managerial roles in the business enterprise. Courses offered in the program will constitute the upper division curriculum consisting of approximately 60 semester units.

The courses which meet the requirements for this major are offered through the joint sponsorship of the appropriate academic department and the College of Extended Studies. The degree is awarded by the Board of Trustees of The California State University and Colleges. All courses offered by San Diego State University for this major are at the upper division level only. Lower division requirements may be fulfilled through community college course offerings.

In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total unit requirement of 124 units for this degree.

General Requirements

Preparation Courses — 15 units
General Education — 40 units
American Institutions (3 of the 6 units required are included in general education)

Major: Required Core (30 units)

Concentrations in the Major: (20 units)

One of the following to be determined through academic advising based on the student's area of interest:

Real Estate, Accounting, Marketing, Management.

For specific course information, contact the Director of Professional Programs.

Criminal Justice Administration Major

With the B.S. Degree

The criminal justice administration external degree program has been developed to meet the academic and occupational needs of persons who are currently or plan to become employed in the fields of law enforcement corrections, probation, parole, or investigative agencies.

This external degree program is similar to the criminal justice administration major offered for matriculated students at SDSU.

In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total unit requirement of 128 units for this degree.

General Requirements

Preparation Courses:
- Social Sciences — 9 units
- Statistics — 3 units

General Education — 40 units

American Institutions (Included in general education)

Major

Thirty-six upper division units selected from Criminal Justice Administration 301, 310, 320, 321, 330, 333, 495, 502, 510, 520, 531, 540, 543, 550; Public Administration 301, 310, 330, 340, 341, 450, 497, 512, 530; Sociology 440, 510, 513, 514.

Approved Electives

A minimum of 24 upper division units is required.

The student may select courses from the above list which have not previously been taken to satisfy the major requirements. Additional upper division courses may be selected which are specifically related to the student's academic and professional objectives including areas outside of criminal justice administration.

Engineering Technology Major

With the B.S. Degree

In conjunction with the Consortium of The California State University and Colleges, courses are offered leading to a Bachelor of Science degree in Engineering Technology. This is a flexible program designed to meet the specific career objectives of both civilian technicians in private industry and military personnel. The program stresses the practical and applied aspects of electronics; it was designed to meet the standards for accreditation of the Engineers' Council for Professional Development in Engineering Technology, and gives students an educational background which will assist them in the preparation for the Engineer-in-Training examination.

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

All courses offered by SDSU for this major are at the upper division level only. Lower division requirements may be fulfilled through community college course offerings. In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total requirement of 128 units.

General Requirements

Preparation Courses:
- Math — 12 units
- Natural Science — 15 units
- Technical Core — 39 units

General Education — 24 units

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

Major

A minimum of 40 upper division units must be completed. Within the degree program students will complete a 30-unit Technical Specialty of which 16 units must be upper division and 14 units may be technology courses transferred from community or other colleges. Two optional patterns in electronics are available: (a) communication and control theory; and (b) digital computers and circuits.

Admission to Program

Completion of 56 transferable semester units (84 quarter) with a minimum 2.0 grade point average, and completion of an appropriate academic background such as engineering technology, or equivalent industrial, educational, government or military experience.

Health Care Administration Major

With the B.S. Degree

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

The courses which meet the requirements for this major are offered through the joint sponsorship of the appropriate academic departments and the College of Extended Studies. The degree is awarded by the Board of Trustees of The California State University and Colleges. All courses offered by SDSU for this major are at the upper division level only. Lower division requirements may be fulfilled through community college course offerings.

In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total unit requirement of 124 units for this degree.

General Requirements

Preparation Courses — 21 units

General Education — 40 units

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

Major

Forty-five upper division units selected from Business Administration 350, 352, 360, 496; Nursing 496, 499 (Management of Patient Care); Public Administration 462 (Health Care Administration), 499 (Providers of Health Care Services), and other courses as recommended by Coordinator; Psychology 350; Sociology 526, 527.

Approved Electives

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

Industrial Technology Major

With the B.S. Degree

Emphasis in Electronics Technology

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

Only upper division courses which satisfy the requirements for the major will be offered by SDSU externally; lower division requirements may be fulfilled through community college course offerings.

In addition to the major and general education requirements, courses may be completed at either the lower or upper division level to fulfill the total unit requirement of 128 units for this degree.

General Requirements

Preparation Courses — 19 units

General Education — 40 units

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

Major

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

Approved Electives

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

Liberal Arts Major

With the A.B. Degree

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

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

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

General Requirements

General Education — 40 units

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

Major

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

Writing Skill

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

Courses and Curricula

Courses and Curricula

Course Numbering

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

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

The Unit or Credit Hour

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

Prerequisites for Undergraduate Courses

Prerequisites for each course are stated in the course description.

The student should not register for any course for which he has not completed the indicated prerequisites. ***The one exception to this is that he may register for the course without having completed the stated prerequisites if he has secured the consent of the instructor.***

Semester in Which Courses Are Offered

In the listing of courses that 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) ..... Three units each semester. Year course normally beginning in the fall semester.
(3-3) I, II ..... Three units each semester. Year course beginning either semester.

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

Common Courses

Experimental 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 (excluding University Studies 299) and nine units of 496 applicable on a bachelor's degree of which no more than three units of 299 (excluding University Studies 299) and 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.

Specified sections of Experimental Topics courses (299 and 496) may be offered for credit/no credit under the following conditions:

1. Requests to offer these courses for Cr/NC must be submitted with the class schedule tentative program forms.
2. The Cr/NC option applies only to separate courses offered under 299 and 496, i.e., separate sections of the same course cannot have two different grading systems.
3. Only those requests submitted to the Office of the Vice President, Academic Affairs, in time for inclusion in the printed class schedule will be approved.

Honors Courses (300)

These courses are intended for students with superior scholastic records and aptitude. An interested student should direct his inquiries to the chairman of the department concerned.

Special Study (499)

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

Credit/No Credit Courses

Courses which are offered for credit/no credit are indicated by the symbols Cr/NC in the course title.

Aerospace Studies

In the College of Professional Studies

Faculty

Professor: Lasiter (Chair)
Assistant Professors: Greer, Kramer

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 retainer pay of $100 per month is given for 20 months of the program. Cadets receive approximately $350 during the Field Training Unit and are reimbursed for the cost of travel to and from the unit.

Officer Training Program Requirement

To meet Air Force assession requirements, 60 percent of the accepted applicants for the officer training program must be enrolled in a technical academic major. Majors that satisfy this prerequisite include Engineering, Computer Science, Information Systems, Mathematics, Physics, Chemistry, or a liberal studies major that is approved by the Aerospace Studies Department Chair.

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, but may be used to satisfy preparation for the major and general education requirements, if applicable.

UPPER DIVISION COURSES

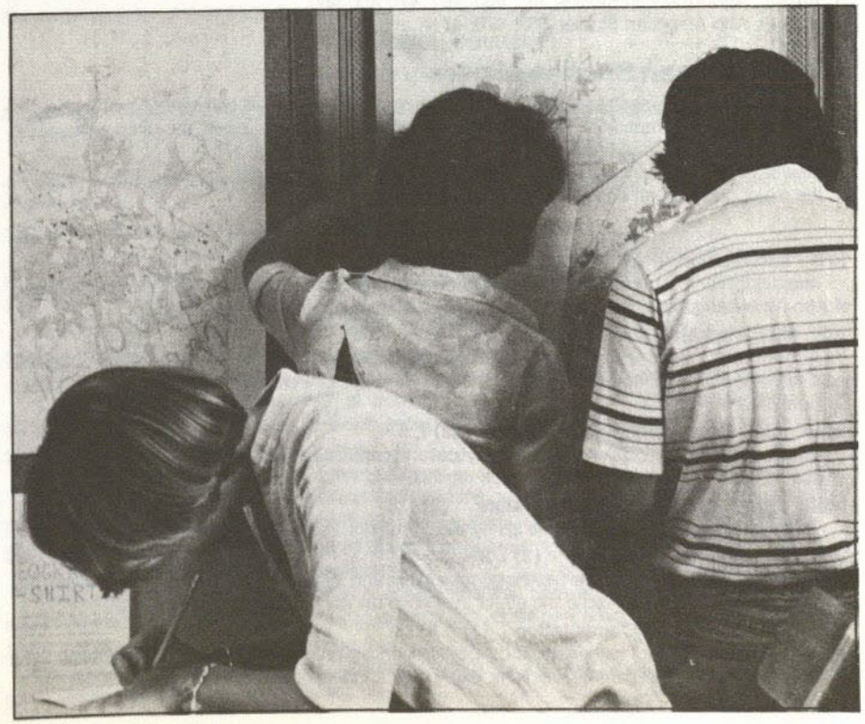
(Intended for Undergraduates)

300A-300B. *(131A-131B.)* **The Professional Officer (3-3)**
Semester I: The Professional Officer: The military justice system; leadership theory and practice. Semester II: Management principles and functions; problem solving, briefing for commissioned service.

333-S. *(133.)* **Field Training Unit (3)**
Required for advanced cadets; military orientation and flight familiarization. Credit granted through the Extension Division on basis of individual student application with approval of the Aerospace Studies Department Chair.

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

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



Afro-American Studies

In the College of Arts and Letters

Faculty

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

Offered by the Department

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

Afro-American Studies Major

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

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

A minor is not required with this major.

Preparation for the major. Afro-American Studies 101, 160, 286; three units selected from 102, 140, 230, 231, 250; and three units selected from 170A, 170B, 180 and 260. (15 units.)

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

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

Area I. Afro-American Studies 330, 331, 360, 445 and 451.
Area II. Afro-American Studies 363, 460, 461, 470 and 480.
Area III. Afro-American Studies 362, 470, 471A and 471B.

Afro-American Studies Minor

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

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

LOWER DIVISION COURSES

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

102. *(32.)* **Afro-American Life Styles (3) I, II**
Afro-American life styles in the past, present, and future. Examination of contemporary problems, their roots and their effects on Twentieth Century America. (Formerly numbered Afro-American Studies 233.)

120A. *(2A.)* **Composition and Reading (3) I, II**
Practice of composition skills utilizing analytical and critical writing and readings, as exemplified by various nonfictional works of scholarly Black personalities.

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

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

160. *(5.)* **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. *(7A-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**
Afro-American Music from its African roots to present. Consideration of musical styles, events, significant contributors as well as role of socio-cultural variables in development of music.

220. *(20.)* **Politics and Economics of Urban Development (3)**
Prerequisite: Afro-American Studies 101.
Political, economic, and other social implications of urban development, decay and renewal and context within which they occur or are undertaken. Analysis of specific programs and projects.

230. *(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.

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.

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

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

286. *(86.)* **Statistics and Research (3) I**
Prerequisite: Afro-American Studies 160.
Fundamentals of research and statistics as used for writing reports, papers, books.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

320. *(120.)* **Organizational Management of Urban Low-Income Neighborhoods (3)**
Prerequisite: Afro-American Studies 101.
Examination of relevant approaches to administration and management in relation to the acquisition of skills for the analysis, development, and management of urban programs in low-income neighborhoods.

330. *(130.)* **Black Child Development (3) I, II**
Attitudes, needs and problems of the Afro-American child with emphasis on new approaches and insights into the development of positive changes for the child's growth and development.

331. *(131.)* **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) II**
Prerequisite: Three units in Afro-American history or communications.
Rhetoric of Black Americans from David Walker to the present, the role rhetoric has played in the history of Black people and an analysis of the Black audience in terms of the Black experience.

363. *(143.)* **Socio-Cultural Analysis of Black Languages (3)**
Prerequisite: Three units in Afro-American Studies.
Social and cultural function of Black languages, verbal and non-verbal, in Afro-American life, and their profound impact on larger society. Also, a probe into issues concerning validity of Black English.

380. Blacks in the American Justice System (3)
Interpretation and application of constitutional principles and judicial decisions to political and social problems faced by Afro-Americans.

445. *(145.)* **Ethnicity and Social Psychology (3)**
Prerequisite: Afro-American Studies 101 or 250.
Analysis of major social psychological theories specifically focusing on how these theories relate to minority attitude/value formation and group behavior. Strategies for resolving social issues.

448. Black and Non-Black Interpersonal Relations (3)
Cognitive and experiential examination of contemporary issues around Black and non-Black interpersonal relations. Authenticity in relationships, interracial trust, personal development, conflict resolution, and proactive belief systems. Central aim to assist Blacks and non-Blacks to facilitate communication.

451. *(151.)* **Black Consumer Psychology (3) I, II**
Prerequisite: Afro-American Studies 250.
Attitude values and decision making of Black people as consumers. Laws and techniques of manipulating consumers.

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

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

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

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

471A. *(172.)* **Antebellum Forms of Black Struggle (3) I, II**
Prerequisite: Afro-American Studies 101 or 170A.
Antislavery movement and the resistance of Afro-Americans to the institution of slavery and the culmination of the movement during the Civil War.

471B. *(171.)* **Black People in the Twentieth Century (3) I, II**
History of social movements and institutions from 1890 to the present.

480. *(180.)* **Twentieth Century Afro-American Jazz (3) I, II**
Prerequisite: Afro-American Studies 101 or 180.
Historical development of jazz from its beginnings to the present, based on the ability to identify people, discuss musical styles and events, and to relate these factors to the life of the times.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

American Indian Studies

In the College of Arts and Letters

Faculty

Chair: Rouillard
Associate Professor: Rouillard
Assistant Professor: Robinson
Lecturers: Cook, Dixon, Grider, Lomayesva, Murphy, Russo, Sandoval

Offered by American Indian Studies

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

LOWER DIVISION COURSES

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

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

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

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

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

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

110. American Indian Heritage (3) I, II
American Indian experience and their interpretations of the natural forces of nature from European contact to modern times.

120. American Indians in Contemporary Society (3) I, II
Sociological understanding of the American Indian groups in contemporary society with emphasis on the relationship to dominant society and why the focus has been on Indians as social problems.

200. American Indian Literature (3) I, II
Introduction to American Indian literature: creation and origin stories, legends, and poetry from the oral tradition to contemporary American Indian authors.

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

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

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

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

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

265. American Indian Art (3) I, II
American Indian as a creative person and artistic products from earliest examples to present surveyed through cultural elements affecting symbols, material, and media. Diverse forces generating forms which have become tradition will be central to the study.

299. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

303. American Indian Women in American Society (3) I
Historical and contemporary analysis of the role of Indian women in both Indian and dominant society.

400. The American Indian Political Experience (3) I, II
Social and political response to dominant group policies by the American Indian as compared to other minority groups.

430. American Indian Poetry (3) I, II
Analysis of American Indian oral literatures, focusing on selected tribal traditions. Relationship between oral traditions and contemporary American Indian poetry will be explored in studies of James Welch, Simon Ortiz, Norman Russell, Scott Momaday and others.

440. American Indian History (3) I, II
Historical analysis of Indian-White contact. Emphasis on the impact of historical events upon the various cultures.

450. Bureaucracy and the American Indian (3) II
Comparative study in the dynamics of the bureaucratic influence on society, with reference to the American Indian experience.

460. American Indian Community Organization and Development (3) I, II
Prerequisite: American Indian Studies 110 or 120.
Study of theories and purposes of development of community organizations and their functions as they relate specifically to American Indian communities both reservation and urban. Analysis of policies which govern local community programs will be explored.

470. Roots of Indian Tradition (3) II
Spirits, prophesies, and renewals of the Indian way compared through symbols and ceremony. Religions will be surveyed as they have been influenced by foreign elements and philosophies. Influences on values and tribalism as reflected through symbols and other measures.

496. Topics in American Indian Studies (1-3)
Prerequisite: American Indian Studies 110 or 120.
An undergraduate seminar. Topics will be announced in the class schedule. Maximum credit six units.

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

UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

533. Problems in American Indian Education (3) II
Prerequisite: American Indian Studies 110 or 120.
Survey of education system imposed on Indian America from the close of the Indian-White military conflict period to the present. Philosophies, government policy and public school accommodation will be central to the topic. Studies, recommendations and resultant programs that affect the overall educational process will be assessed.

American Studies

In the College of Arts and Letters

Faculty

American Studies is administered through the American Studies committee, composed of faculty members from the departments of Afro-American Studies, Geography, History, Literature, and Political Science. For names of American Studies advisers, contact the College of Arts and Letters, Student Advising Center, LE-469.

Offered by American Studies

Master of Arts degree in American studies.

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

American Studies Major

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

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

Preparation for the major. American Studies 201, 202; and six units of English 250, 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.

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

Major. A minimum of 33 upper division units to include American Studies 498; History 547A-547B or History 548A-548B (may be used for Group B); and two groups of nine and one group of six upper division units selected from Group A, Group B, or Group C; to be approved by the adviser. American Studies 501 and 580 are recommended for all majors.

The remaining six units needed to fulfill the 33-unit requirement may be taken in courses listed in Groups A, B, C and D, except that no more than 12 of the 33 units may be taken from any one group. American Studies 580 can be used for Group A, B, or C, where applicable.

Group A: ***American Literature.*** Afro-American Studies 461; Comparative Literature 570 (when relevant to American Studies); English 521, 522, 523, 524, 525, 526, 527; Mexican-American Studies 335; Women's Studies 352, 353 (when relevant to American Studies).

Group B: ***American History.*** History 310A-310B, 530, 531, 532, 533A-533B, 534, 535A-535B, 536, 537A-537B, 538A-538B, 539A-539B, 540, 541A-541B, 544A-544B, 545A-545B, 546A-546B, 547A-547B, 548A-548B, and 596 (when relevant to American studies); Women's Studies 341A-341B.

Group C: ***Social Sciences.*** Afro-American Studies 362; Anthropology 441, 445, 446; Business Administration 456; Economics 332, 338A-338B, 370, 380, 385, 453, 458, 474, 489; Family Studies and Consumer Sciences 436; Geography 321, 354, 358, 370, 371, 464, 555, 566, 570, 573, 574, 575; Journalism 500, 503; Mexican-American Studies 303, 320; Physical Education 476; Political Science 305, 320, 332, 335, 338, 378, 522, 523, 530, 531, 536, 546, 547A-547B; Religious Studies 520, 522; Sociology 422, 424, 513, 514, 521, 525, 536, 545, 547, 557; Women's Studies 330.

Group D: ***Electives.*** American Studies 501; Art 560; Music 347, 351D; Philosophy 564.

LOWER DIVISION COURSES

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

Deals specifically with the concept of culture as a matrix for synthesizing various disciplinary methodologies in the study of American culture. Required for American studies majors. (Formerly numbered American Studies 151.)

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

Focuses on a particular American problem, examining it in terms of the methodological concerns relating to American culture. Required for American studies majors. American Studies 202 may be taken without 201 by non-majors. (Formerly numbered American Studies 152.)

UPPER DIVISION COURSES

(Intended for Undergraduates)

360. Science, Technology and American Culture (3)

Effects of scientific theories and practical technologies on the growth and character of American culture. From Jefferson and Franklin to smashing of atoms and space explorations, how science and technology have influenced American values, environment, arts, politics, and national identity.

498. Senior Seminar in American Culture (3) I, II

Advanced reading and directed research on a problem in the study of American culture. Particular problems are presented with an emphasis on the integration of two or more disciplines or disciplinary techniques.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

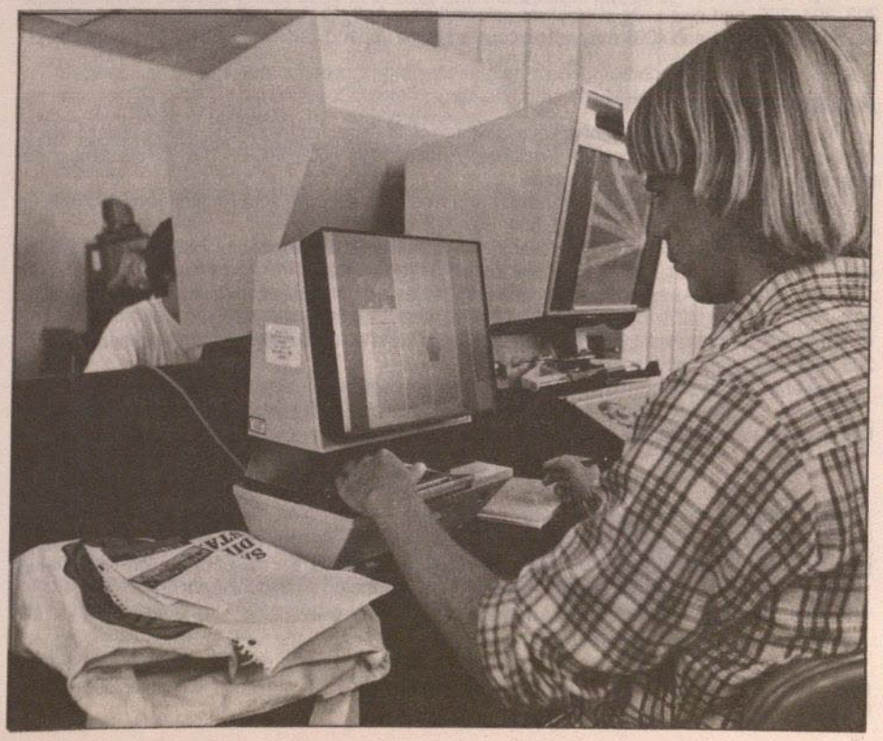
501. Study of American Culture (3) I, II

Prerequisite: Major in American studies; open to other students with permission of instructor.

American studies as a discipline, the critical methods of the field, the variety of materials for interdisciplinary study. (Formerly numbered Humanities 180.)

580. Topics in American Studies (1-3) I, II

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



Anthropology

In the College of Arts and Letters

Faculty

Emeritus: Anderson, Ezell, Rogers
Chair: Leach
Professors: Goldkind, Leach, Lippold, Pendleton, Watson, Whitney
Associate Professors: Greenfeld, Himes, Moore, Pillsbury, Rohrl, Staniford
Assistant Professors: Ball, Bartel, Henry, Scollay, Sonek
Lecturers: Almstedt, Kasper, 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 in section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Anthropology 101, 102. (Six units.)

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

Major. A minimum of 24 upper division units in Anthropology to include Anthropology 301, 302, 303, 304, 305, and nine units of electives selected from Anthropology with approval of the adviser. (Anthropology 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, twelve units of which must be in upper division courses (excluding Anthropology 400A-400B). The 15 units must be selected from one of the following areas:

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

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

Socio-Cultural: Anthropology 102, 303 and 350 and six units selected from Anthropology 305, 423, 424, 425, 426, 427, 428, 429, 430, 496 (if appropriate), 520, 522, 532.

Linguistics: Anthropology 102, 304 and 410 or 511 and six units selected from Anthropology 303, 305, 423, 496 (if appropriate), 499.

General: Anthropology 101, 102 and nine units selected from 301, 302, 303, 304, 305.

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

LOWER DIVISION COURSES

101. *(1.)* **Human Bio-Cultural Origins (3) I, II**
Man's place in nature; fossil evidence for hominid evolution; evolutionary theory; racial, clinical and genetic variability; relationship of physical and cultural adaptations; the rise of civilization. Not open to students with credit in Anthropology 400A. (Formerly numbered Anthropology 100.)

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

150. World Cultures (3)
Prerequisite: Anthropology 102.
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 101.
One lecture and six hours of laboratory.
Application of the methods and techniques of archaeology through excavation, laboratory analysis, and preparation of reports.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

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

302. *(102.)* **Principles of Archaeology (3) I, II**
Prerequisite: Anthropology 101 or 400A.
Methodology of concept formation, hypothesis testing, model building and law development in archaeology. Emphasis on theories of culture change and process. Archaeological examples from a worldwide sample of prehistoric and historic societies.

303. *(103.)* **Principles of Cultural Anthropology (3) I, II**
Prerequisite: Anthropology 102 or 400B.
Primary emphasis on the principles and fundamentals guiding the study of cultural anthropology and its various topics of interest. An overview of the more recent trends within the field will be presented.

304. *(104.)* **Principles of Anthropological Linguistics (3) I, II**
Prerequisite: Anthropology 101 or 102 or 400A or 400B.
The structural nature of language. How languages differ, change and influence each other. The language families of the world. The significance of language for human social life in a variety of cultures.

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

350. *(152.)* **World Ethnography (3)**
Prerequisite: Anthropology 102 or 400B.
Cultural patterns of representative peoples. Industries, arts, social organization and supernaturalism considered with view to environmental adjustment, historical development and functional interrelation. Ethnological theories reviewed and applied in interpreting illustrative societies.

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

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400A-400B. *(100A-100B.)* **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 101. Anthropology 400B is not open to students with credit in Anthropology 102. Anthropology 400A-400B may not be used to fulfill minimal upper division requirements in the anthropology major or minor.

406. Nonhuman Primates (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Basic aspects of nonhuman primates, geographical distribution, ecology (habitat, diet), external and internal morphology, locomotion and social behavior, reproduction and development.

410. *(122.)* **Language in Culture (3)**
Prerequisite: Anthropology 102 or 400B.
Survey of anthropological interests in the study of language and of linguistic interests in the sociocultural context of language. (Formerly numbered Anthropology 510.)

423. *(149.)* **Kinship and Social Organization (3)**
Prerequisite: Anthropology 102 or 400B.
Comparison of kinship systems and the structure of social relationships throughout the world. The methodological orientations and theories relating to social organization with emphasis on non-Western societies. (Formerly numbered Anthropology 523.)

424. *(153.)* **Primitive Religion (3)**
Prerequisite: Anthropology 102 or 400B.
Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism. Primitive mentality and the supernatural. (Formerly numbered Anthropology 524.)

425. *(155.)* **Peasant Society and Culture (3)**
Prerequisite: Anthropology 102 or 400B.
The social organization and culture of present-day small agricultural communities with emphasis on changes brought about by modernization. (Formerly numbered Anthropology 525.)

426. *(156.)* **Cultural Change and Processes (3)**
Prerequisite: Anthropology 102 or 400B.
The individual and the culture pattern: the acquisition of culture, innovation and invention, direction of cultural development, diffusion and interpenetration of cultures. Illustrations from contemporary and historic peoples: Indians of the Southwest, Eskimos, aboriginal groups of Australia, Africa and Oceania. (Formerly numbered Anthropology 526.)

427. *(158.)* **Economic Anthropology (3)**
Prerequisite: Anthropology 102 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 acquired and distributed in non-Western, non-market-industrial societies. (Formerly numbered Anthropology 527.)

428. *(159.)* **Ecological Anthropology (3) I, II**
Prerequisite: Anthropology 102 or 400B.
Biological and cultural interactions with the environment in relation to adaptations of human populations. Examples from a worldwide sample of societies. (Formerly numbered Anthropology 528.)

429. *(164.)* **Urban Anthropology (3)**
Prerequisite: Anthropology 102 or 400B.
Cultural roles of urban centers and processes of urbanization in non-Western, nonindustrial societies of past and present. Urban influence of traditional peasant and primitive peoples of Africa, Asia, and Latin America. (Formerly numbered Anthropology 529.)

430. *(187.)* **Political Anthropology (3)**
Prerequisite: Anthropology 102 or 400B.
Political processes, institutions, and ideologies in primitive and peasant societies. (Formerly numbered Anthropology 530.)

432. Principles of Personality in Culture (3)
Prerequisite: Anthropology 102 or 400B.
Principles related to the determinants of human behavior contained in culture. Studies of behavior cross-culturally.

440. *(148.)* **Cultures of Europe (3)**
Prerequisite: Anthropology 102 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. (Formerly numbered Anthropology 540.)

441. *(161.)* **The California Indian (3)**
Prerequisite: Anthropology 102 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. (Formerly numbered Anthropology 541.)

442. *(162.)* **Cultures of South America (3)**
Prerequisite: Anthropology 101 or 102 or 400A or 400B.
Indian cultures in terms of origins, migration, relation to habitat, cultural variation and relevance to contemporary trends. Development of Inca civilization, the effects of the Spanish conquest and its aftermath. (Formerly numbered Anthropology 542.)

443. *(163.)* **Contemporary Latin American Cultures (3)**
Prerequisite: Anthropology 102 or 400B.
A social anthropological approach to the structure and dynamics of contemporary conditions and problems, especially as revealed in studies of particular communities. Included are such topics as ethnic and regional differences within national societies, population change, social consequences of economic changes, changing stratification systems, values, institutional change. (Formerly numbered Anthropology 543.)

445. *(171.)* **Ethnology of North America (3)**
Prerequisite: Anthropology 102 or 400B.
Native cultures and the role of environmental and historical factors in North America. (Formerly numbered Anthropology 545.)

446. *(172B.)* **Southwestern Ethnology (3)**
Prerequisite: Anthropology 102 or 400B.
Indian cultures of the American Southwest in historic times; ecological adaptations, responses to white contact, adaptations to modern American life. (Formerly numbered Anthropology 546.)

447. *(175.)* **Cultures of Southeast Asia (3)**
Prerequisite: Anthropology 102 or 400B.
Prehistory, races and cultures of Indonesia, Philippines and nearby mainland Southeast Asia. Includes both primitive and peasant societies and reviews them with respect to environmental, historical and social factors. (Formerly numbered Anthropology 547.)

448. *(178.)* **Cultures of Oceania (3)**
Prerequisite: Anthropology 102 or 400B.
The aboriginal cultures and people of Melanesia, Australia, Micronesia, and Polynesia in prehistoric, historic, and modern times. (Formerly numbered Anthropology 548.)

449. *(185.)* **Cultures of Sub-Saharan Africa (3)**
Prerequisite: Anthropology 102 or 400B.
Indigenous peoples and cultures of Africa south of the Sahara. A comparison of cultural traditions, social organization, and modern trends in newly emergent nations of the area. (Formerly numbered Anthropology 549.)

450. *(186.)* **Cultures of India (3)**
Prerequisite: Anthropology 102 or 400B.
Indigenous peoples and cultures of India and contiguous areas of South Asia. The development of cultural traditions, social organization, and modern trends. (Formerly numbered Anthropology 550.)

451. *(191.)* **Chinese Society (3)**
Prerequisite: Anthropology 102 or 400B.
Culture and social organization of Chinese people. Traditional China, overseas Chinese, contemporary Taiwan and Hong Kong, recent social change in Mainland China. (Formerly numbered Anthropology 551.)

452. *(192.)* **Japanese Society (3)**
Prerequisite: Anthropology 102 or 400B.
Culture and social organization of Japanese people. Traditional Japanese economic, social, political and religious institutions. Korea, Okinawa and overseas Japanese. Recent industrial and urban changes in modern Japan. (Formerly numbered Anthropology 552.)

453. Near Eastern Societies (3)
Prerequisite: Anthropology 102 or 400B.
Cultures and social organization of the peoples of Southwest Asia and North Africa. Traditional social, economic, political and religious institutions. Effects of colonialism, nationalism and social change. (Formerly numbered Anthropology 553.)

461. *(157.)* Mesoamerican Ethnohistory (3)
Prerequisites: Anthropology 102 or 400B and Anthropology 477.
European contact and early Colonial periods in Middle America as revealed through sixteenth century literary sources and archaeological research. Emphasis on interaction of native Mesoamerican and Spanish cultures and on general processes of culture contact and change. (Formerly numbered Anthropology 361.)

470. *(147.)* Prehistory of South America (3)
Prerequisite: Anthropology 101 or 400A.
Development of native South American cultures from initial occupation to the 16th century. Emphasis on major historical trends, particularly of the Andean area. (Formerly numbered Anthropology 570.)

471. *(170.)* Archaeology of North America (3)
Prerequisite: Anthropology 101 or 400A.
Origin of the American Indian and survey of the main prehistoric cultures of the North American continent. (Formerly numbered Anthropology 571.)

472. *(172A.)* Southwestern Prehistory (3)
Prerequisite: Anthropology 101 or 400A.
Prehistoric Indian cultures in the American Southwest; ecological adaptations and outside cultural influences. (Formerly numbered Anthropology 572.)

473. *(174.)* Paleolithic Archaeology of Europe (3)
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the area from Ireland eastwards to European Russia beginning with the first evidence of hominid activity through the end of the Pleistocene. (Formerly numbered Anthropology 573.)

474. *(176.)* Archaeology of Western and Central Asia (3)
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the area from Anatolia eastwards to India and including the Arabian peninsula beginning with the first evidence of hominid activity through ethnohistorically known societies. (Formerly numbered Anthropology 574.)

475. *(180.)* Preclassic Cultures of Mesoamerica (3)
Prerequisite: Anthropology 101 or 400A.
Developmental background of Mesoamerican peoples to rise of Teotihuacan urban state. Origins and evolution of agriculture, village life, and civilization in Middle America. (Formerly numbered Anthropology 575.)

476. *(181.)* Classic Pre-Columbian Civilizations of Middle America (3)
Prerequisite: Anthropology 101 or 400A.
General overview and selected topics in culture history of Middle America from rise of Teotihuacan in first century B.C. to its fall in eighth A.D. Emphasis on Teotihuacan, Maya, and Zapotec peoples. (Formerly numbered Anthropology 576.)

477. *(182.)* Postclassic Cultures of Mesoamerica (3)
Prerequisite: Anthropology 101 or 400A.
History and process in Mesoamerica from rise of Tula to fall of Tenochtitlan. Attention to role of commerce in rise and fall of civilizations. Emphasis on Toltec, Maya, Mixtec, and Aztec peoples. (Formerly numbered Anthropology 577.)

478. *(183.)* Post-Pleistocene Archaeology of Europe (3)
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the area from Ireland eastwards to European Russia in the time period from the initial Holocene hunter-gatherer-fisher adaptations and domestication of plants and animals through Roman Colonialism. (Formerly numbered Anthropology 578.)

479. *(184.)* Archaeology of Africa (3)
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the regions of northern Africa and sub-Saharan Africa beginning with the first evidence of hominid activity through ethnohistorically known societies. (Formerly numbered Anthropology 579.)

480. *(189.)* Topics in Arctic Anthropology (3)
Prerequisites: Anthropology 101 or 102 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. (Formerly numbered Anthropology 580.)

481. *(190.)* Archaeology of East Asia and Oceania (3)
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the areas of China, Siberia, southeast Asia, Australia, Japan and Oceania beginning with the first evidence of hominid activity through ethnohistorically known societies. (Formerly numbered Anthropology 581.)

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

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

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

500. *(115.)* Primate Social Behavior (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 406.
Analysis of modes of primate socialization. Development of social behavior with emphases on communication group structure, aggression, and sex. Various methods of analysis and observation practiced utilizing primate collection at the San Diego Zoo.

501. *(116.)* Human Paleontology (3)
Prerequisite: Anthropology 101 or 400A.
Comparative anatomy of fossil man and other primates; evolutionary relationships and cultural associations.

502. Microevolution (3)
Prerequisite: Anthropology 301.
The evolution of human populations over a short period of time. Interaction of the evolutionary forces of mutation, selection, drift and gene flow with the cultural systems of human populations.

503. Human Variation (3)
Prerequisite: Anthropology 101 or 400A.
Morphological, physiological and genetic aspects of human variability. Significance of this diversity in the biological adaptations of human populations.

504. Primate Anatomy (3)
Two lectures and three hours of laboratory.
Prerequisites: Anthropology 301 and 406.
Primate anatomy both regional and systemic, including skeletal, cardiovascular and digestive systems; the integument and otolaryngology of primates.

505. Human Osteology (3)
Two lectures and three hours of laboratory.
Prerequisites: Anthropology 301 and Zoology 108.
Identification of individual bones and teeth; sex, age, and racial variation; stature reconstruction; continuous and discontinuous morphological variations; paleopathology. Training in observations, measurements, and analyses.

506. Physical Anthropology of the Living (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 301.
Theory and practice of techniques in measurement and description of biological variations in modern populations.

507. Blood Groups and Anthropology (3)
Two lectures and three hours of laboratory.
Prerequisites: Anthropology 301 and 503.
Human blood groups and their frequencies in populations, analyses of gene frequencies, methods of defining and selecting samples from human population, evolutionary significance of blood groups and species antigens.

511. *(126.)* **Field Methods in Linguistics (3)**
Two lectures and three hours of laboratory.
Prerequisites: Three units of linguistics or Anthropology 304, and consent of instructor.
Principles and techniques of linguistic analysis. Problems and methods in the phonetic transcription and analysis of unwritten, non-Indo-European languages. Emphasis on phonetics, phonemics, field techniques, and work with informants.

520. *(150.)* **Ethnological Field Methods (3)**
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 350.
The problems and techniques of obtaining data in ethnological and social anthropological field work; preparation, gaining and maintaining rapport, evaluating data, participant observation. A review of literature followed by work with informants.

522. *(154.)* **Social Anthropology (3)**
Prerequisite: Anthropology 350.
Development of social anthropology as a distinct subfield of cultural anthropology. Readings and analysis of functionalism as theory and methodology in the explanation of social and cultural processes. (Formerly numbered Anthropology 352.)

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

532. *(165.)* **Culture and Personality (3)**
Prerequisite: Anthropology 102 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 102 or 400B.
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.

560. *(173.)* **Advanced Archaeological Field Methods (3)**
One lecture and six hours of laboratory.
Prerequisite: Anthropology 200.
Advanced projects in excavation and stabilization of ruins, archaeological surveys, laboratory analysis and preparation of reports.

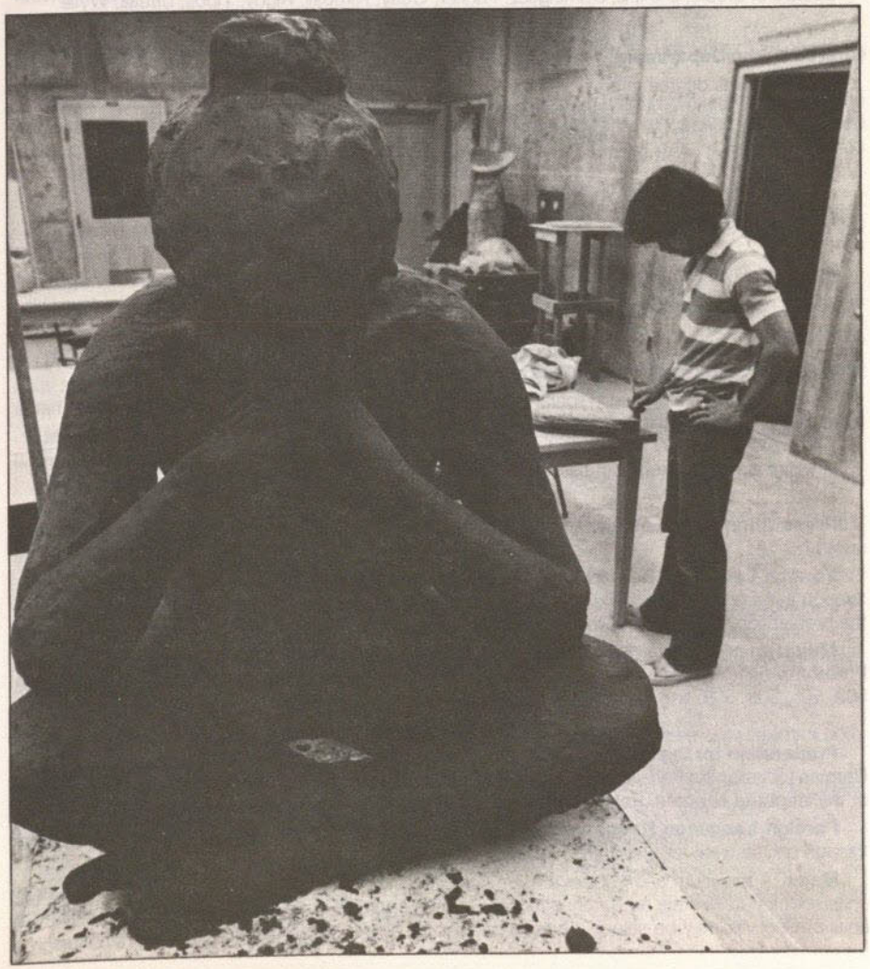
561A-561B. *(188A-188B.)* **Archaeological Laboratory Methods (3-3)**
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 560. Anthropology 561A is prerequisite to 561B.
Semester I: Application of palynology, paleontology and technologies. Semester II: Practical applications of materials from 561A. Individual laboratory research project required.

582. Regional Anthropology (3)
Prerequisite: Anthropology 102 or 400B.
In-depth study of a major geographical region of the world such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia.

583. Topical Anthropology (3)
Prerequisite: Anthropology 101 or 102 or 400A or 400B as appropriate depending on the topic.
In-depth study of a major subdiscipline such as Political Anthropology, Economic Anthropology, Social Anthropology, Psychological Anthropology, Cultural Ecology, Applied Anthropology, Anthropological Genetics, or Environmental Archaeology.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Art

In the College of Professional Studies

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

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

Faculty

Emeritus: Andrews, Dirks, Jackson, Ruocco, Sorenson, Swiggett
Chair: Orth
Professors: Baker, Berg, Bigelow, Covington, Fisch, Higgins, Hopkins, Hunter, Lingren, Longenecker, Miller, Orth, Rogers, Tanzer, Wallace
Associate Professors: Austin, Bowne, Frick, Groover, Hodge, Papworth, Ray
Assistant Professors: Cauley, Dumlas, Esser, Mansfield, Moaney, Perczel, Roberts, Shipman, Shirk, Stoddard
Lecturers: Brodie, Daniels, Dominguez, Forster, Getty, Kimball, Rigby, Tibbs, Urrutia, Wylie

Offered by the Department

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

Art Major

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

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

This major in art may be planned with an emphasis in studio arts or art history.

A minor is not required with this major in art.

Emphasis in Studio Arts

Preparation for the major. Art 100, 102, 103, 203, 204, 216, 258 and 259; Philosophy 101. (27 units.)

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

Major. A minimum of 24 upper division units in art to include Art 403, 404, 500, 557, 590; Philosophy 541; and six units selected with the approval of the adviser from Art 405, 406, 416, 499, 502, 505, 506, 509, 516, 571, 572, 573 and 574.

Emphasis in Art History

Preparation for the major. Art 158, 258, 259, 264 and 265. (15 units.) Four semesters of French, German (or Italian for Renaissance majors only) with a grade of "B" or better, or a reading knowledge of the language selected. Refer to section of catalog on "Graduation Requirements."

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 24 upper division units in art to include Art 557, 568, 571, 573, 575; nine units selected from other art history offerings with the approval of the art history faculty, of which six units of electives may be selected from anthropology, history, or philosophy.

Art Major

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

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

The major in art may be planned with an emphasis in crafts, environmental design, graphic communication, painting and printmaking, or sculpture. The programs in environmental design and in graphic communication have a preprofessional orientation supplemented by a strong liberal arts background. Environmental design can lead to interior, architectural, landscape design or city planning. Graphic communication prepares the student for the areas of environmental graphics, art direction, visual design for the contemporary media of advertising, fashion illustration or editorial illustration. The areas of painting and printmaking and sculpture prepare students for professional attitudes toward the fine arts and the continuance of their educational experience in graduate schools with the goal of teaching at institutions of higher learning. The preprofessional program in art education prepares the student for teaching in either elementary or secondary schools. The crafts program can be developed to specialize in ceramics, enameling, furniture or industrial design, jewelry, metal smithing, 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, 102, 103, 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, enamel; 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, 102, 103, 241, 258, 259; and six units selected from Art 203, 204, 205, 240, 243. (27 units.)

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

Emphasis in Environmental Design

Preparation for the major. Art 100, 101, 102, 103, 247, 248, 249, 250, 251, 258, 259; and three units selected from Art 216, 220, 225. (36 units.) Recommended: Art 241, 205, 234; Industrial Arts 121; Family Studies and Consumer Sciences 119, 245.

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

Group I: Art 451, 552, 553, 554, 557; six units selected from Art 381, 481, 581; three units selected from Art 323, 348, 450, 452, 454, 547, 577.

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, 102, 103, 203, 204, 205, 258, 259. (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, 102, 103, 216, 258, 259; and three units selected from Art 203, 204, 220, 225, 231, 234. (24 units.)

Major. A minimum of 24 upper division units to include Art 416 or 517, 498, 516, 557; three additional units of art history; and nine units selected from Art 323, 331, 403, 404, 500.

Alternate Program for Advanced Degree Preparation

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

Art Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

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

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

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

Group II: Six units of drawing and painting, six units of crafts or sculpture, three units of graphic communication or environmental design, and Art 485 and 586. (21 units.)

Art Minor

The minor in art consists of a minimum of 22 units in art, 12 units of which must be in upper division courses in one emphasis area, as listed in the art majors. The courses must be selected in consultation with an emphasis area adviser.

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

LOWER DIVISION COURSES

100. *(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.

102. *(1B.)* **Drawing and Composition (3) I, II**
Six hours.
Prerequisite: Art 100.
Line and value in drawing; emphasis on structure and proportion, sketching, gesture, and contour drawing. (Formerly numbered Art 200.)

103. *(2B.)* **Design and Aesthetics (3) I, II**
Six hours.
Prerequisite: Art 101.
Continuation of Art 101. Original work in creative design including projects in three dimensions. (Formerly numbered Art 201.)

157. *(5.)* **Introduction to Art (3) I**
An illustrated lecture course dealing with the meaning of art derived from an investigation of the principles of art. Designed to increase the understanding and appreciation of art.

158. Tribal Arts of Native America, Sub-Saharan Africa and Oceania (3) I, II
Introduction to tribal arts of Native America, Sub-Saharan Africa and Oceania in cultural context, from the ancient to the contemporary period. Arts of diverse peoples living in small-scale societies are included. Field trips.

203. *(15A-15B.)* **Life Drawing (3) I, II**
Six hours.
Prerequisite: Art 100.
Drawing from the nude model. Maximum credit six units.

204. *(16A-16B.)* **Painting (3) I, II**
Six hours.
Prerequisite: Art 100.
Pictorial composition and techniques of painting. Maximum credit six units.

205. *(18A-18B.)* **Waterbase Media (3) II**
Six hours.
Prerequisite: Art 101.
Composition of still-life and landscape in aqueous media. Maximum credit six units.

210. Printmaking (3)
Six hours.
Prerequisites: Art 102 and 103. Consent of instructor.
Introduction and exploration of basic printmaking media. Emphasis on aesthetic and technical processes in intaglio, lithography, relief and serigraphy.

216. *(17A-17B.)* **Sculpture (3) I, II**
Six hours.
Prerequisite: Art 103.
Three dimensional design using varied materials. Maximum credit six units.

217. *(27.)* **Life Modeling—Sculpture (3) I, II**
Six hours.
Prerequisite: Art 103.
Creative experimentation with sculptural forms from the human figure.

220. *(61.)* **Design in Crafts (3) I, II**
Six hours.
Prerequisite: Art 103.
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. Introduction of glaze for surface enrichment. Maximum credit six units.

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

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

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

241. *(14A.)* **Beginning Graphic Communication (3) I, II**
Six hours.
Prerequisites: Art 100 and 103.
Creative projects exploring the interrelation of fundamental art principles and design using phonetic symbols and typography. (Formerly numbered Art 141.)

242. *(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.

243. *(14B.)* **Intermediate Graphic Communication (3) I, II**
Six hours.
Prerequisite: Art 241.
Typographic and design concepts applied to layout for contemporary media. (Formerly numbered Art 241.)

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

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

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

250. *(95A.)* **The Contemporary House (3) I, II**
Six hours.
Prerequisites: Art 100, 101, and 248.
Elementary problems in neighborhood planning, house design, and landscaping.

251. *(95B.)* **Interior Design (3) I, II**
Six hours.
Prerequisite: Art 103.
Elementary functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume.

258. *(50A.)* **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. *(52B.)* **Chinese Art (3) I**
A study of the arts of China.

265. *(52A.)* **Japanese Art (3) II**
A study of the arts of Japan.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

323. *(113A.)* **Furniture Design (3) I**
Six hours.
Prerequisite: Art 101. Industrial Arts 151 is recommended.
Study of the principles of design through the making of furniture.

325. *(119A.)* **Ceramics (3) I, II**
Six hours.
Prerequisite: Art 225.
Basic methods of forming, decorating, glazing and firing pottery forms with emphasis on the use of the potter's wheel.

331. *(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.

334. *(180A-180B.)* **Advanced Weaving (3) I, II**
Six hours.
Prerequisite: Art 220.
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.

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.

341. *(114A.)* **Graphic Communication (3) I, II**
Six hours.
Prerequisite: Art 243.
Investigation of design concepts relating to advertising.

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.

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.

381. *(135A.)* **History and Theory of Environmental Design (3) Irregular**
Prerequisites: Art 258 and 259.
Environmental arts. From earliest times to the 15th century.

387. *(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. (Formerly numbered Art 587.)

403. *(115A-115B.)* **Advanced Life Drawing (3) I, II**
Six hours.
Prerequisite: Art 203.
Drawing the nude model. Maximum credit six units.

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

405. *(118A.)* **Intermediate Waterbase 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 103 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.

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.

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

441. *(114B.)* **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.
Prerequisites: Art 101 and 403.
The disciplines of realistic descriptive illustration including problems in imaginative, aesthetically refined painterly illustration. Media to include gouache, watercolor, scratch board, mixed media, and pen and ink.

444. *(196A.)* **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) Irregular**
Six hours.
Prerequisites: Art 248 and 251.
Survey, analysis and conceptual design methods of residential interiors stressing materials, equipment, components and structural detailing. Maximum credit six units.

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

454. *(195B.)* **Environmental Design (3) I, II**
Six hours.
Prerequisite: Art 247.
Survey, analysis and design synthesis of problems of more complexity, through interiors, to landscape, to architectural planning and, finally, concern for city design.

479. *(129A.)* **History of Ceramics (3) I, II**
Three lectures and two hours of activity.
Historical background to 20th century ceramics. Philosophical approaches to design of pottery and differing materials and techniques as related to contemporary ceramics. Field trips and activities to verify findings of research.

481. *(135B.)* **History and Theory of Environmental Design (3) Irregular**
Prerequisites: Art 258 and 259.
Environmental arts. From the 15th to the 19th century.

485. *(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. (Formerly numbered Art 585.)

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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. *(198B.)* **Senior Investigation and Report (3) I, II**
Nine hours for 497A; three hours for 497B.
Prerequisites: Six upper division units in art, and consent of the instructor.
Individual research into areas of studio and art history not covered by regular courses.
A. Studio Investigations
B. History Investigations

498. *(198A.)* **Senior Project (3) I, II**
Nine hours for 498A; three hours for 498B.
Prerequisite: Consent of instructor.
Investigation in art. Formal presentation of project.
A. Studio project.
B. History project.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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

502. *(120A-120B.)* **Inter-Media (1-3) I, II**
Two hours for each unit of credit.
Prerequisites: Art 102 and 103.
Process and materials in plane and space. Maximum credit six units.

503. *(115C-115D.)* **Life Drawing and Painting (3) I, II**
Six hours.
Prerequisite: Art 403.
Drawing and painting from nude and costumed models. Maximum credit six units.

504. *(116C-116D.)* **Advanced Painting (3) I, II**
Six hours.
Prerequisite: Art 404.
Pictorial composition and painterly process. Maximum credit six units.

505. *(118B.)* **Advanced Waterbase Media (3) I, II**
Six hours.
Prerequisite: Art 405.
Composition in watercolor and related media.

506. *(112B.)* **Design and Composition (3) I, II**
Six hours.
Prerequisite: Art 406.
Structure in picture making.

509. *(106A-106B.)* **Relief Printmaking (3) I, II**
Six hours.
Prerequisite: Art 203.
Woodcut, wood engraving, gessocut, linoleum, collograph, and relief printmaking processes. Emphasis on fine print quality and technical development using mixed media. Maximum credit six units.

510. *(126D-126E.)* **Intaglio Printmaking in Color (3)**
Six hours.
Prerequisite: Art 410.
Advanced creative intaglio printmaking in color, including zinc and copper plate; etching, drypoint, aquatint, engraving, embossing and color variations. Emphasis on fine print quality and technical development in the color process unique to this medium. Maximum credit six units.

511. *(136C-136D.)* **Lithography Printmaking in Color (3)**
Six hours.
Prerequisite: Art 411.
Advanced creative lithography printmaking in color. Emphasis on fine print quality in color process and color technology unique to this medium. Maximum credit six units.

512. *(146A-146B.)* **Serigraphy (3)**
Six hours.
Prerequisite: Art 203.
Techniques of reproducing original prints by means of the silkscreen process. Maximum credit six units.

516. *(117C.)* **Advanced Sculpture (3) I, II**
Six hours.
Prerequisite: Art 416.
The influence of art media and tools on aesthetic organization in sculpture in relief and in the round. Maximum credit six units.

517. *(127.)* **Advanced Figurative Sculpture (3) I, II**
Six hours.
Prerequisites: Art 216 and 217.
Figurative study with emphasis on individual exploration. Maximum credit six units.

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

523. *(113C-113D.)* **Advanced Furniture Design (3) I, II**
Six hours.
Total credit in Art 323, 423 and 523 limited to twelve units.
Prerequisite: Art 423.
Advanced individual design; exploration of materials, process and function. Maximum credit six units.

525. *(119C-119D.)* **Ceramics (3) I, II**
Six hours.
Prerequisite: Art 425.
Study of ceramic design through creative projects of clay forms. Maximum credit six units.

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

529. *(161B-161C-161D.)* **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. *(170C-170D.)* **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. *(180C-180D.)* **Advanced Weaving (3) I, II**
Six hours.
Total credit in Art 234, 334 and 534 limited to nine units.
Prerequisite: Art 334.
Advanced individual problems in weaving. Maximum credit six units.

535. Advanced Nonwoven Textile Construction (3)
Six hours.
Prerequisite: Art 435.
Advanced study in nonloom techniques. Techniques to include: looping, braiding, plaiting, and special fabricating techniques. Experimentation with new man-made fibers and with synthetic commercial dyes. Maximum credit six units.

541. *(114C., 114D.)* **Problems in Graphic Communication (3) I, II**
Six hours.
Prerequisite: Art 441.
Refinement of personally developed design concepts for visual communication with emphasis on individually directed solutions. The development of a portfolio of professional quality. Maximum credit six units.

543. *(193B.)* **Drawing and Illustration for Graphic Communication (3) I**
Six hours.
Prerequisite: Art 443.
The disciplines of realistic descriptive illustration including problems in imaginative, aesthetically refined painterly illustration. Media to include gouache, watercolor, scratch board, mixed media, and pen and ink.

544. *(196B.)* **Visual Communication Media (3) I, II**
Six hours.
Prerequisite: Art 444.
Experimental, creative and practical exploration of contemporary communication as related to magazine and editorial layout. Production of a student designed limited edition.

547. *(188.)* **Environmental Theory (3)**
Prerequisite: Art 247 or 347.
Survey of alternative solutions to the problem of design of the physical environment.

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

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

553. *(195D.)* **Contract Interior Design (3) Irregular**
Six hours.
Prerequisite: Art 451.
Projects in nonresidential architectural interiors involving space planning systems analysis, specification writing, equipment and materials appropriate to commercial function. Maximum credit six units.

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

557. *(156A.)* **Art of the Nineteenth Century (3) I, II**
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the French Revolution to 1900.

558. *(156B.)* **Art of the Twentieth Century (3) I, II**
Prerequisite: Art 557.
Major movements in sculpture, painting, graphics and architecture from the beginnings of this century to the present. Field/museum trips.

560. *(157.)* **History of American Art (3) Irregular**
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the Native American Art and Colonial Period to the present.

561. *(151A.)* **Arts of the Pre-Hispanic Americas (3) I**
Prerequisite: Art 158.
Arts of ancient Meso-America, Central America, Caribbean and South America from earliest times until contact with Europe.

562. *(151B.)* **Colonial Art of Latin America (3) II**
Prerequisites: Art 258 and 259.
The art and architecture of Latin America from the colonial period to the present. Field trips included.

565. *(152A.)* **The Art of India and Southeast Asia (3) II**
Prerequisites: Art 258 and 259.
Painting, architecture and sculpture of India and Southeast Asia viewed through their cultural history and aesthetic values. Field/museum trips.

566. *(152B.)* **The Art of Persia and the Islamic World (3) I**
Prerequisites: Art 258 and 259.
Painting, architecture and sculpture and minor arts of Persia and the Islamic world which manifest cultural history and heritage. Field/museum trips.

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

569. Art of Sub-Saharan Africa (3) I
Prerequisite: Art 158.
Form and content of the arts of Sub-Saharan Africa viewed within a cultural context.

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

571. *(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. *(155C.)* **Baroque and Rococo Art (3) II**
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting of the Baroque and Rococo periods.

576. Arts of Native North America (3) Irregular
Prerequisite: Art 158 or American Indian Studies 265.
Form and content of the arts of Native North America viewed within a cultural context. Field trips.

577. *(160.)* **History of Architecture (3) Irregular**
Prerequisites: Art 157, or 258 and 259.
Architecture from primitive times to the present.

578. *(126C.)* **History of Printmaking (3) Irregular**
Prerequisites: Art 258 and 259.
History of printmaking from its inception to the present.

579. *(129B.)* **Advanced History of Ceramics (4)**
Three lectures and two hours of activity.
Prerequisite: Art 479.
Emphasis on 20th century international ceramics. Philosophical approaches to historical heritage. Field trips and activities to verify findings of research.

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

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

582. The Decorative Arts (3)
Investigations into the arts of ceramics, enamelling, furniture, glass, jewelry, metalwork and textiles. Analyzing the aesthetic basis which determines their forms in various times and places. Field trips to museums and ateliers.

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

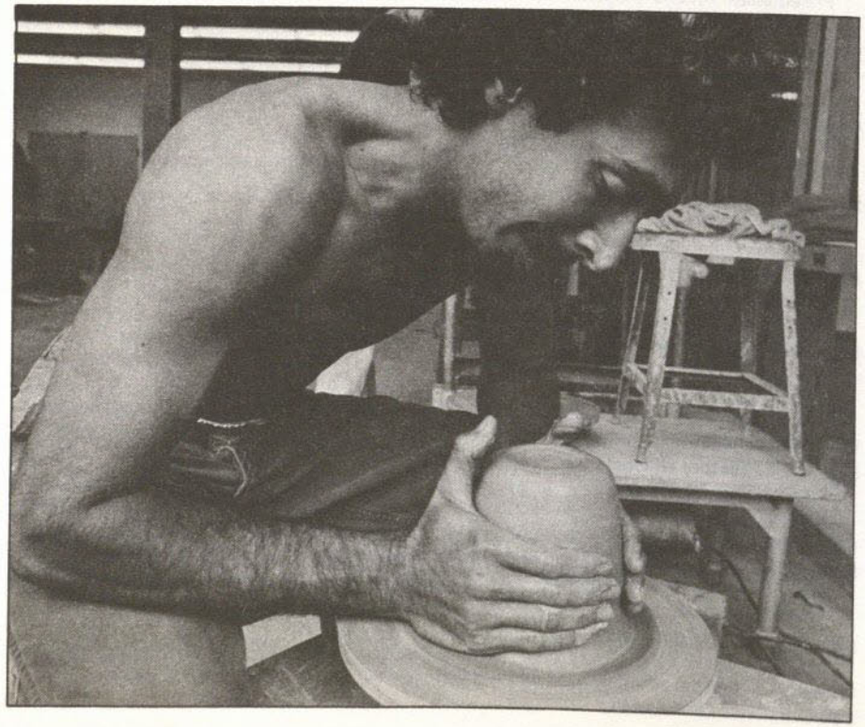
590. *(190.)* **Principles and Elements of Visual Aesthetic Organization (3) II**
Three hours.
Prerequisites: Senior standing and Art 157.
Visual aesthetic materials and the psychological principles involved in aesthetic organization.

591. *(191A.)* **Gallery Exhibition Design (3) I, II**
Six hours.
Prerequisite: Fifteen units of art.
Fundamental art elements and principles applied to the theories and techniques of gallery exhibition design.

592. *(191B.)* **Gallery Exhibition Design (3) I, II**
Six hours.
Prerequisite: Art 591.
Advanced problems in the theories and techniques of gallery exhibition design.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Asian Studies

In the College of Arts and Letters

Faculty

Asian Studies is administered through the Center for Asian Studies, composed of faculty members from the departments of Anthropology, Art, Classical and Oriental Languages and Literatures, Economics, Geography, History, Linguistics, Literature, Philosophy, Political Science, Religious Studies, and Sociology; the schools of Business Administration and Education; and the Library. Professor Alvin D. Coox 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 in the section of this catalog on "Graduation Requirements."

Preparation for the major. Six units in History 105A-105B, 120A-120B, or Philosophy 101 and 102; six units in Anthropology 101 and 102, Economics 101 and 102, Geography 101 and 102, or Political Science 101 and 103; and Asian Studies 105A-105B. (18 units.) Art 258 and 259 (unless waived by the instructor) are needed if Art 565 is selected in the major. Art 264 and 265 and Comparative Literature 271A-271B are recommended.

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

Major. A minimum of 30 upper division units to include six units selected from Asian Studies 458A-458B (not open to students with credit in Asian Studies 105A-105B), 499 or 596; from the humanities not less than 12 units from at least two departments selected from Art 565; Comparative Literature 490*, 495*, 530, 570*, 571*, 577*, 580, 581*; History 496*, 561A-561B, 562, 563, 564A-564B, 566, 567A-567B, 569, 570, 571A-571B, 596*; Philosophy 301 (unless waived by the 575 instructor) and 575*, 596; Religious Studies 501, 503, 506, 508, 580*, 581* and 499*; and from the social sciences no less than 12 units from at least two departments selected from Anthropology 447, 448, 450, 451, 452, 481*, 496*; Economics 330, 336*, 360, 365*, 465, 489, 496* and 499*; Geography 331, 333, 334, 350; Political Science 499, 561, 562.

* When relevant.

Asian Studies Minor

The minor in Asian Studies consists of a minimum of 21 units to include History 120A-120B or Asian Studies 105A-105B. Other lower division courses acceptable for the minor are Art 264 and 265; Comparative Literature 271A-271B, and four units of an appropriate Asian language. Twelve units must be in upper division. Upper division courses acceptable for the minor include:

Humanities: Not less than six units selected from History 561A-561B, 562, 563, 564A-564B, 566, 567A-567B, 569, 570, 571A-571B; Philosophy 301 (unless waived by the 575 instructor) and 575 (when relevant), 596; Religious Studies 501*, 503*, 506*, 508*.

Social Sciences: No less than six units selected from Anthropology 447*, 450*, 451*, 480; Business Administration 376; Economics 330, 465; Geography 331, 333, 334; Political Science 499, 562.

No more than six units may be selected from among History 566, 567A-567B, and Anthropology 451. No more than six units may be selected from among History 569, 570 and Anthropology 452. Three units from Asian Studies 499 or 596 may be substituted for three units in either Humanities or Social Sciences.

* Additional prerequisites are required for these courses.

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

LOWER DIVISION COURSE

105A-105B. 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 Asian Studies 159A-159B.)

UPPER DIVISION COURSES

(Intended for Undergraduates)

458A-458B. Asian Cultures (3-3)
An interdisciplinary study of the people of Southern, Southeastern, and Eastern Asia emphasizing social, cultural, economic and political aspects of Asian societies. Not open to students with credit in Asian Studies 105A-105B.

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

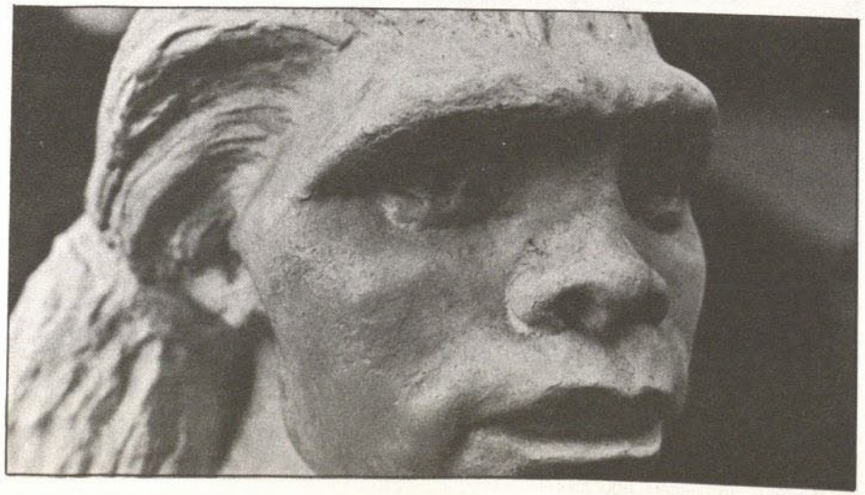
UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

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

GRADUATE COURSES

Refer to the Graduate Bulletin.



Astronomy

In the College of Sciences

Faculty

Emeritus: Huffer, Smith
Chair: Nelson
Professors: Daub, Nelson, Schopp, Young
Associate Professors: Angione, Talbert

Offered by the Department

Master of Science degree in astronomy.
Major in astronomy with the A.B. degree in liberal arts and sciences.
Major in astronomy with the A.B. degree in applied arts and sciences.
Minor in astronomy.

Astronomy Major

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

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

Preparation for the major. Astronomy 101 or 103, 109; Physics 195, 195L, 196, 196L, 197, 197L. (16 units.)

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

Major. A minimum of 24 upper division units to include Astronomy 304A-304B, 312A-312B; and Physics 350A-350B, 354A-354B. Recommended: Astronomy 520, Physics 306, 311, 408, 510.

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 531, 541A, 550.

Astronomy Major

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

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

Preparation for the major. Astronomy 101 or 103, 109; Physics 195, 195L, 196, 196L, 197, 197L. (16 units.)

Major. A minimum of 24 upper division units to include Astronomy 304A-304B, 312A-312B, 498A, 498B; and Physics 350A-350B, 354A. Recommended: Astronomy 520; Physics 306, 311, 354B, 408, 510.

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, 550.

Astronomy Minor

The minor in astronomy consists of a minimum of 15 units to include Astronomy 101 or 103, and 12 upper division units selected from Astronomy 301, 304A*, 304B*, 305, 312A*, 312B*, 520*; Natural Science 430.

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

* Prerequisites for this minor include Physics 195, 195L, 196, 196L, 197, 197L, and Mathematics 150, 151, 152, unless waived by the Department.

LOWER DIVISION COURSES

101. *(1.)* **Principles of Astronomy (3), I, II**
Pursuit of insights into the fundamental nature of the naked-eye night sky, the Solar System, stars and the Galaxy, and the mysteries of the remote universe.

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

109. *(9.)* **Astronomy Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Astronomy 101 or 103.
Demonstration of astronomical principles through observations with astronomical instruments and analysis of astronomical data.

112. *(12.)* **Elementary Navigation (3) I**
Compass corrections, time, line of position, use of celestial coordinates, tables such as H.O. 229 for the solution of the navigational triangle.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. Cosmology and Gravitational Collapse (3) I, II
Prerequisites: Three units of lower division physical science.
Einstein theory of general relativity applied to problems of gravitational collapse (stellar evolution, neutron stars, pulsars, and black holes) and cosmology (origin and evolution of the Universe).

304A-304B. *(104A-104B.)* **Advanced Astronomy (3-3)**
Prerequisites: Astronomy 101 or 103 and 109 and credit or concurrent registration in both Mathematics 151 and Physics 197, 197L.
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 or 103 and Physics 197, 197L. Astronomy 312A is prerequisite to 312B.
An application of modern physics to a study of the sun and the stellar system.

498A. *(198A.)* **Senior Project (1) I**
Prerequisite: An acceptable master plan for graduation within one year.
Consists of the selection and design of individual projects; oral and written progress reports.

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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

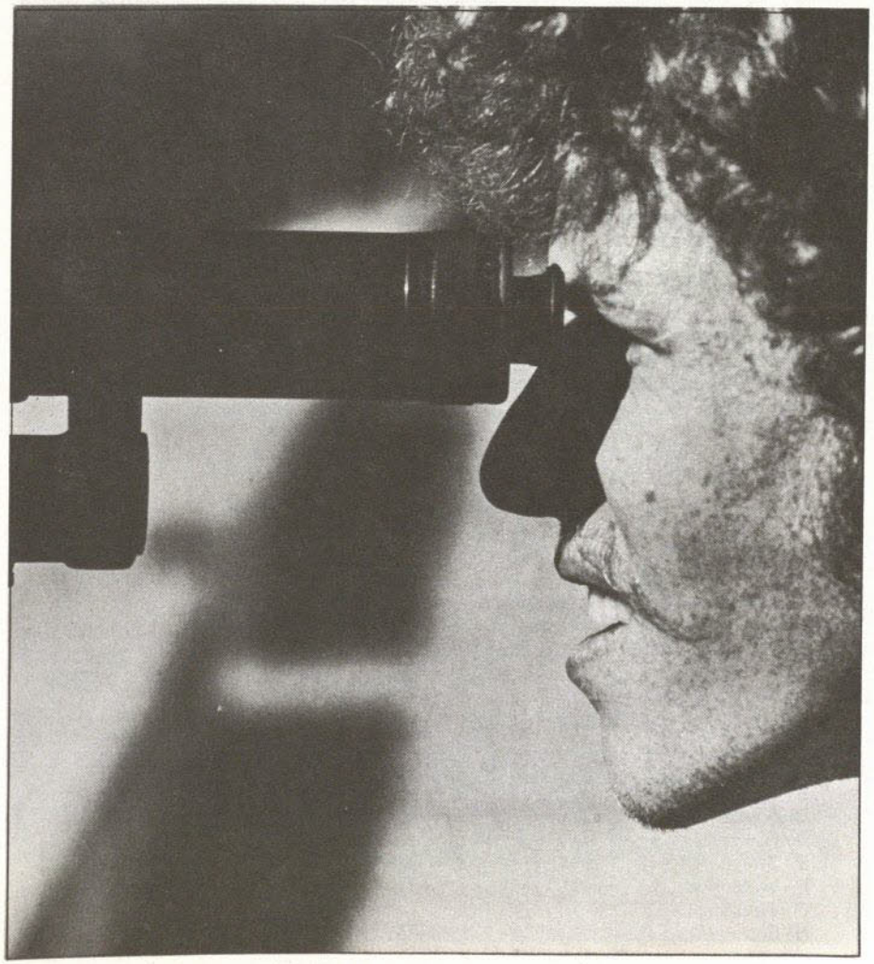
(Also Acceptable for Advanced Degrees)

520. Solar System Astronomy (3)
Prerequisites: Astronomy 101 or 103 and Physics 197, 197L.
Study of the structures of the planets, their atmospheres and satellite systems, asteroids, comets, and meteoroids, and the interplanetary medium, including the sun's influence in the system.

596. *(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

Refer to the Graduate Bulletin.



Athletics

In the College of Professional Studies

Faculty

Chair: Karr
Professor: Karr
Assistant Professors: Gilbert, Templeton
Head Coaches: Dietz, Hill, R., Hill, M., Vezie
Coaches: Hall, Hammerschmidt, Kofler, Rea, Shafer, Sneed, Tollner
Coaching Specialists: Baker, Judd, Plunkett, Suwara, Wallace, Wheeler

Offered by the Department

Courses in athletics.
Major or minor work in athletics is not offered.

LOWER DIVISION COURSE

299. *(99.)* **Experimental Topics (1-4) I, II**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

380. *(180.)* **Intercollegiate Sport Practicum (2-3)**
Major sports meet more than nine hours for three units; minor sports meet more than six hours for two units.

Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures for varsity team members. A sport may be taken only once for credit in either Athletics 380 or 381.

Subject fields of 380 are as follows:

Offered in the Fall
A Basketball (3)
B Cross Country (2)
C Football (3)
D Gymnastics (3)
E Swimming (2)
F Water Polo (2)
G Wrestling (3)
N Soccer (2)

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

381. *(181.)* **Competitive Sport Practicum (2-3)**
Major sports meet more than nine hours for three units; minor sports meet more than six hours for two units.

Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures. A sport may be taken only once for credit in either Athletics 380 or 381.

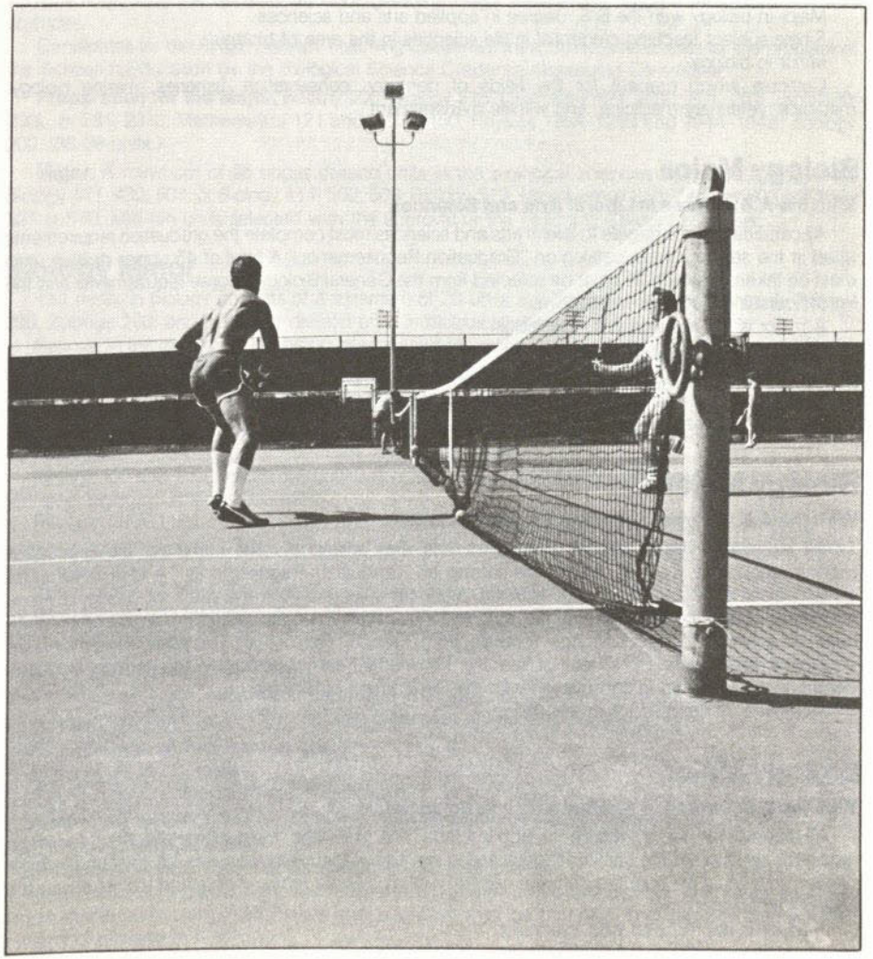
Subject fields of 381 are as follows:

Offered in the Fall
A Basketball (3)
B Cross Country (2)
C Football (3)
D Gymnastics (3)
E Swimming (2)
F Water Polo (2)
G Wrestling (3)
N Soccer (2)

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

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.



Biology

In the College of Sciences

Faculty

Emeritus: Taylor
Chair: Collier
Professors: Baer, Brandt, Clark, Collier, Cooper, Cox, Ebert, Farris, Ford, Hazen, Johnson, Krisans, McBlair, Miller, Neel, Paolini, Parsons, Ratty, Rinehart, Schapiro, Shepard, D., Sloan
Associate Professors: Awbrey, Daugherty, Diehl, Futch, Hurlbert, Thwaites, Zedler, J., Zedler, P.
Assistant Professors: Barnett, Davis, C., Hanscom, Mauriello, McClenaghan, Sabbadini
Lecturers: Davis, N., Loeblich, 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.
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.
Single subject teaching credential in life sciences in the area of biology.
Minor in biology.
Curricula which prepare for the fields of dentistry, conservation, fisheries, marine biology, medicine, veterinary medicine, and wildlife management.

Biology Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A total of 45 upper division units must be taken, of which 24 must be selected from the General Biology Degree requirements and the list of courses acceptable for electives.

A minor is not required with this major.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. Students must choose French, German, or Russian to meet this requirement. Refer to section of catalog on "Graduation Requirements."

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 in the section of this catalog on "Graduation Requirements." 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 12 units of a single foreign language (chosen from French, German or Russian), or demonstrate equivalent knowledge 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 in the section of this catalog on "Graduation Requirements." A total of 36 upper division units must be selected from the general Biology Degree requirements and the list of courses acceptable for electives.

A minor is not required with this major.

General Biology Degree Requirements

Preparation for the Major. Botany 200; Biology 215; Chemistry 200, 200L, 201, 201L, and 230, 230L or 231, 231L; Mathematics 121 and 122 or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38 or 39 units.)

Major. A minimum of 24 upper division units for the A.B. degree or 36 upper division units for the B.S. degree to include Biology 411, 430, 501, or Biology 411, 502, 503. Additional courses 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; all upper division zoology courses except Zoology 314, 350. All courses not covered in this list must have prior approval by the Biology Department chair. Oceanography 320 is not acceptable toward the degree.

Biology Major

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Candidates for the Single Subject Teaching Credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

Preparation for the Major. Botany 200; Biology 215; Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Mathematics 121 and 122 or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Major. A minimum of 36 upper division units in the biological sciences to include Biology 400; Biology 411, 430, 501, or Biology 411, 502, 503; Biology 572; Microbiology 310; Zoology 503 or 510 or 521 or 570; and ten units selected with the approval of the Teaching Credential adviser.

Biology Minor

The minor in biology consists of a minimum of 20 units in biological sciences to include Botany 200, Zoology 200, and 12 upper division units in biological sciences.

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

LOWER DIVISION COURSES

Students who declared a major in Biology, Botany, or Zoology prior to the 1978-79 academic year may substitute:

Biology 100 and 100L for the prerequisites of Botany 200 and Zoology 200 now listed for 400- and 500-level biological science courses;

Physics 115A-115B or 124A-124B and 125A-125B or 195, 195L, 196, 196L, 197, 197L for the prerequisites of Physics 125A-125B and 194A-194B now listed for 400- and 500-level biological science courses;

Biology 411 for Biology 520 as listed in older catalogs; Biology 502 for Biology 560 as listed in older catalogs; Biology 503 for Biology 540 as listed in older catalogs. Biology 430 may not be substituted for Biology 540 and 560.

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

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

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

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

200. *(4.)* **Natural History of Plants and Animals (3) I, II**
Two lectures and three hours of laboratory.
An introduction to plants and animals in relation to their environments and to one another, with emphasis on local forms and their habitats.

215. *(15.)* **Introduction to Quantitative Biology (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Concurrent registration in Zoology 200; Mathematics 122 or 150.
Methods and experience in defining and solving quantitative problems in biology, including the design of experiments, and parametric and nonparametric statistical techniques.

261. *(9.)* **Human Physiology (5) I, II**
Three lectures and six hours of laboratory.
Prerequisites: Chemistry 100, 100L; Zoology 108; credit or concurrent registration in Chemistry 130, 130L.
Human function viewed from cellular through organ system levels of organization. Intended primarily for prenursing students. Not acceptable for credit in Biological Sciences curriculum programs (see Biology 572).

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116 . Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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.
Prerequisite: Biology 100.
Basic aspects of ecological theory relating to the organismal population, community and ecosystem levels of organization. Not open to biological sciences majors.

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

350. *(159.)* **Human Heredity (3) I, II**
Prerequisite: Biology 100.
Selected principles of human inheritance with emphasis on relationships to other fields of human studies. Not open to students with credit in Biology 430, 503, or 544 or to biology majors.

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

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

380. Processes of Organic Evolution (3) I, II
Prerequisite: Biology 100.
Modern theory of organic evolution with emphasis on processes involved as they relate to past, present, and future evolution of mankind. Not open to biological sciences majors.

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

400. Bioscience Methodology (3) I
One lecture and six hours of laboratory.
Prerequisite: Consent of instructor.
Methods and techniques in the biological sciences, based on materials developed by the biological sciences curriculum committee. (Formerly numbered Biology 410.)

411. Ecology (4)
Three lectures and three hours of laboratory.
Prerequisites: Biology 215; Physics 125B and 194B; Chemistry 201, 201L.
Ecological concepts covering all levels of organization from the individual to the ecosystem. (Formerly numbered Biology 520.)

420. *(115.)* **Conservation of Wildlife (3) I, II**
Prerequisite: Biology 100 or Zoology 200.
Plant and animal resources with emphasis on their conservation and intelligent use.

430. Molecular Biology (4)
Three lectures and three hours of laboratory.
Prerequisites: Biology 215; Chemistry 230, 230L, or 231, 231L.
Cell chemistry and metabolism, diploid and haploid inheritance, mutations, the genetic material.

462L. *(141.)* **Human Physiology Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Biology 362.
Laboratory work in human physiology. Not open to students with credit in Biology 261.

496. Experimental Topics (1-4)
Refer to catalog statement on Experimental Topics on page 116. 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 501, senior standing and consent of instructor.
Investigation and report on current ecological literature.

497G. *(195.)* **Senior Investigation and Report in Genetics (2) I, II**
Prerequisites: Biology 503, senior standing and consent of instructor.
Investigation and report on current genetic literature.

497P. *(190.)* **Senior Investigation and Report in Physiology (2) I, II**
Prerequisites: Biology 502, senior standing and consent of instructor.
Investigation and report on current physiological literature.

498. *(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.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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

502. Cellular Physiology (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 215; Chemistry 230, 230L, or 231, 231L; Physics 125B and 194B.
Cellular structure, macromolecules, energetics, growth, division, transport, and response. (Formerly numbered Biology 560.)

503. Genetics (4)
Two lectures and six hours of laboratory.
Prerequisite: Biology 502.
Principles of transmission and molecular genetics, mutation, population genetics and evolution. (Formerly numbered Biology 540.)

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.

519. *(175.)* Statistical Methods in Biology (3) I
Two lectures and three hours of laboratory.
Prerequisite: Biology 411 or 430.
Application of statistical techniques to biological data. Not open to students with credit for another upper division course in statistics except with written approval of the chairman of the department offering the student's major to be filed with the Evaluations Office.

525. Agricultural Ecology (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 320 or 411.
Mechanisms controlling fertility, productivity and regulation in agricultural ecosystems. The ecological design and management of agroecosystems.

528. Ecology of Renewable Resources (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Biology 320, 411, or 420.
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.
Prerequisite: Biology 411.
Biological, chemical and physical considerations of inland waters.

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

532. *(112.)* Fisheries Biology (3) II
Two lectures and three hours of laboratory.
Prerequisite: Biology 411.
Fisheries of commercial importance. The dynamics of exploited populations.

535. *(121.)* Systems Ecology (4)
Three lectures and three hours of laboratory.
Prerequisites: Biology 411, Mathematics 122 or 150, and consent of instructor.
Theory and techniques of systems analysis and mathematical modeling as applied to ecological problems.

537. *(123.)* Advanced Systems Ecology (4)
Three lectures and three hours of laboratory.
Prerequisites: Biology 535 and consent of instructor.
Advanced topics in the application of mathematical modeling and simulation techniques to analyses of ecological problems.

541. *(156.)* Developmental Biology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 430 or 503.
Analysis of development with emphasis on embryonic differentiation.

544. *(158.)* Human Genetics (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Biology 503.
Genetics as related to human biology, with consideration of the applied fields of medical genetics, genetic counseling, and population studies.

545. *(157.)* Cytogenetics (4) I
Two lectures and six hours of laboratory.
Prerequisite: Biology 503.
The physical basis of heredity. Study of the chromosomes and chromosome behavior in relation to problems in heredity and evolution.

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

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

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

549. *(160.)* Evolution and Population Genetics (3) I, II
Prerequisite: Biology 503.
Theory of evolution and modeling of genetic systems.

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

559. *(173.)* Advanced Genetics (3) I, II
Prerequisite: Biology 503.
Current topics in molecular, organismal or population genetics. Maximum credit six units.

561. *(181.)* Advanced Topics in Cellular Physiology (3) I, II
Prerequisite: Biology 502.
Current topics in cellular physiology. May be repeated with new content. Maximum credit six units.

562. *(142A.)* Comparative Animal Physiology I (3)
Prerequisite: Biology 502.
Feeding and digestion, blood and circulation, nutrition, respiration and metabolism, excretion and osmoregulation. Considerations of function from molecular to organismal levels. Major phyla are considered. (Formerly numbered Biology 562A.)

562L. *(142A.)* Comparative Animal Physiology Laboratory I (2)
Six hours of laboratory.
Prerequisites: Biology 502; credit or concurrent registration in Biology 562.
Directed laboratory projects emphasizing the design of experiments in physiological research. Emphasis on topics presented in Biology 562. (Formerly numbered Biology 562A.)

563. *(142B.)* Comparative Animal Physiology II (3) II
Prerequisite: Biology 502.
Membrane excitability and transport processes; nerve conduction, muscle contraction, sensory reception and integration. Considerations of function from molecular to organismal levels. (Formerly numbered Biology 562B.)

563L. *(142B.)* **Comparative Animal Physiology Laboratory II (2) II**
Six hours of laboratory.
Prerequisites: Biology 502; credit or concurrent registration in Biology 563.
Directed laboratory projects stressing topics presented in Biology 563. (Formerly numbered Biology 562B.)

564. *(144.)* **Comparative Endocrinology (3) I, II**
Prerequisite: Biology 502, Botany 530, Microbiology 320, or Zoology 540. Recommended: Biology 563; Chemistry 361A-361B or 560A-560B.
Endocrine mechanisms at cellular, organismic, and population levels in plants and animals.

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

566. *(148.)* **Photophysiology (3) II**
Prerequisite: Biology 502.
Bioluminescence and the physiological effects of visible and ultraviolet radiations on plants and animals.

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

568L. *(182L.)* **Immunochemistry Laboratory (1) I, II**
Prerequisite: Credit or concurrent registration in Biology 568.
The characterization of the immunoglobulins and the measurement of the antigen-antibody reaction.

570. *(150.)* **Radiation Biology (3) I, II**
Prerequisites: Physics 125B and 194B; Zoology 200. Recommended: Biology 502; Chemistry 200, 200L, 201, 201L; and Physics 303.
Principles underlying radiological reactions of ionizing radiations. Effects of ionizing radiations at the biochemical, cell, organ, and organism levels.

570L. *(150L.)* **Radiation Biology Laboratory (2) I, II**
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Biology 570.
The laboratory determination of the effects of ionizing radiation on biological systems.

571. *(151.)* **Radioisotope Techniques in Biology (3) I, II**
One lecture and six hours of laboratory.
Prerequisites: Physics 125B and 194B. Recommended: Biology 502.
The principles and application of radioisotopes in biology. Radionuclide measurement, safe handling, tracer and radioautography techniques.

572. Physiology of Human Systems (3) I, II
Prerequisites: Physics 125B and 194B; Zoology 200.
Intended for students majoring in one of the natural sciences or engineering. Not open to students with credit in Biology 261 or 362.
Survey of basic themes in human physiology, presented at the cellular and organ system levels. Topics include membrane transport, nerve excitation, muscle contraction, hormone function, cardiovascular physiology, renal function, immunology, and sensory reception and integration.

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 Zoology 200, 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 Refer to the Graduate Bulletin.

Botany

In the College of Sciences

Faculty

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

Offered by the Department

Master of Arts degree in biology with an emphasis in botany.
Major in botany with the A.B. degree in liberal arts and sciences.
Major in botany with the B.S. degree in applied arts and sciences.
Single subject teaching credential in life sciences in area of botany.
Minor in botany.

Botany Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Biology 215; Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L, or 231, 231L; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. It is recommended that French, German, or Russian be chosen to meet this requirement. Refer to section of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503; plus 12 units of 400- or 500-level botany courses, at least two of which must include a laboratory.

Botany Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Biology 215; Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L, or 231, 231L; Mathematics 121 and 122 or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Major. A minimum of 36 upper division units in the biological sciences to include Biology 411, 430, 501, or Biology 411, 502, 503; plus Botany 501 or 502 or 503; Botany 490A, 490B, 514 and 530; Microbiology 310; plus five units of 400- and 500-level electives in the biological sciences.

Botany Minor

The minor in botany consists of a minimum of 20 units in the biological sciences to include Botany 200, Zoology 200, Biology 215, plus nine units in the biological sciences, six of which must be in 400- or 500-level botany courses.
Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Botany Major

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Candidates for the Single Subject Teaching Credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

Preparation for the major. Biology 215; Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L, or 231, 231L; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Major. A minimum of 38 upper division units in 400- and 500-level courses in the biological sciences to include Botany 490A, 490B; and Botany 501 or 502 or 503; Botany 514 and 530; Biology 400, and either Biology 411, 430, 501, or Biology 411, 502, 503; Microbiology 310; and four units selected from a 400- or 500-level course in zoology.

LOWER DIVISION COURSES

Students who declared a major in Biology, Botany, or Zoology prior to the 1978-79 academic year may substitute:

Biology 100 and 100L for the prerequisites of Botany 200 and Zoology 200 not listed for 400- and 500-level biological science courses;

Physics 115A-115B or 124A-124B and 125A-125B or 195, 195L, 196, 196L, 197, 197L for the prerequisites of Physics 125A-125B and 194A-194B now listed for 400- and 500-level biological science courses;

Biology 411 for Biology 520 as listed in older catalogs; Biology 502 for Biology 560 as listed in older catalogs; Biology 503 for Biology 540 as listed in older catalogs. Biology 430 may not be substituted for Biology 540 and 560.

100. *(1.)* **Plants and Man (3) I, II, S**
Basic structure and function of plants with emphasis on the interrelationships of plants and man.

200. Introduction to Botany (4)
Three lectures and three hours of laboratory.
Prerequisites: Chemistry 200 and 200L.
Basic botany for Life Sciences majors. Origin of life; evolution of basic metabolism; the plant cell, organelles and their function; plant structure and function; plant diversity and classification; basic concepts of genetics and plant ecology.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

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 (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Fifteen units in botany with grades of A or B or consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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.
This course will be offered for last time in 1978-79.

501. *(101.)* **Phycology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Botany 200.
Morphology and phylogenetic relationships of the algae.

502. *(102.)* **Mycology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Botany 200.
The structure, food relations, and classification of fungi.

503. *(103.)* **Vascular Plants (4)**
Two lectures and six hours of laboratory.
Prerequisite: Botany 200.
Structure, development and phylogenetic relationships of the bryophytes and vascular plants.

511. *(111.)* **Advanced Phycology (3)**
One lecture and six hours of laboratory.
Prerequisite: Botany 501.
Physiology, ecology, culture and economic aspects of the algae. Maximum credit six units with three units applicable on a master's degree.

514. *(114.)* **Plant Taxonomy (4) II**
Two lectures and six hours of laboratory, field trips.
Prerequisite: Botany 200.
The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.

526. *(126.)* **Plant Pathology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Botany 200. Recommended: Botany 502.
A practical course dealing with the principles of disease in plants, control measures, and quarantine procedures. Emphasis is placed on the determination and control measures of those pathogenic organisms which affect crops, trees and shrubs and nursery stock.

530. *(130.)* **Plant Physiology (4)**
Two lectures and six hours of laboratory.
Prerequisites: Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L, or 231, 231L.
The activities of plants, including food manufacture, absorption, conduction, transportation, respiration, growth and movement.

532. *(132.)* **Plant Metabolism (3)**
Prerequisite: Botany 530 or Biology 502.
An examination of metabolic pathways in plants and their regulation and control.

540. *(140.)* **Plant Anatomy (4) II**
Two lectures and six hours of laboratory.
Prerequisite: Botany 200.
The arrangement of structural elements within plant organs, with emphasis on cell and tissue types.

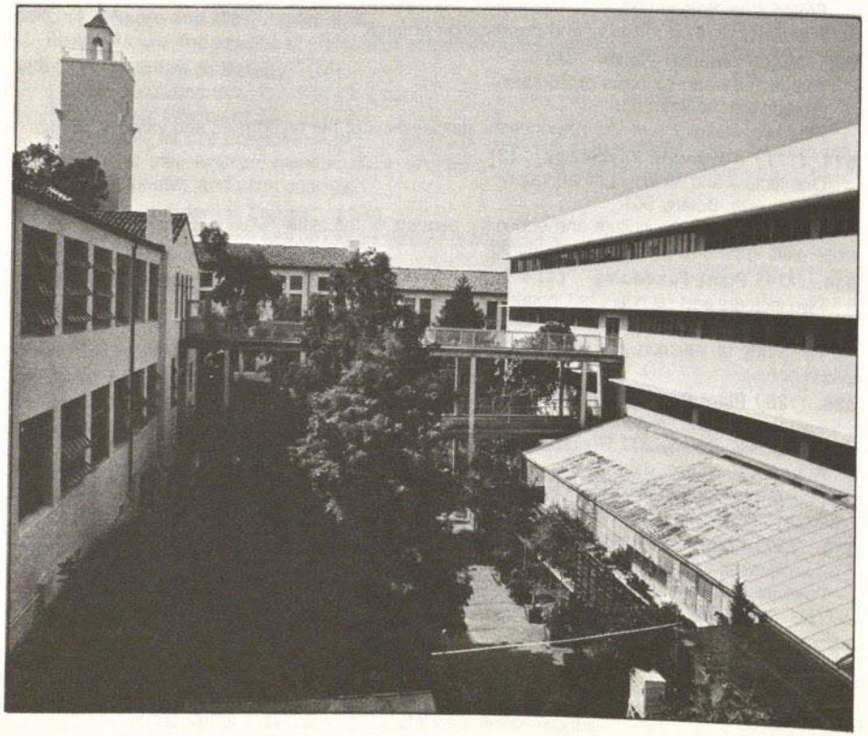
562. *(162.)* **Agricultural Botany (2)**
Field trips to be arranged.
Prerequisite: Botany 200.
California crop plants, their general identification, cultural methods, and regional distribution.

572. *(172.)* **Palynology (3) I**
One lecture and six hours of laboratory.
Principles and methods of pollen and spore diagnosis, with reference to use in taxonomy, paleontology, anthropology, and medicine.

596. *(196.)* **Selected Topics in Botany (2-3)**
Prerequisite: Consent of instructor.
Selected topics in classical and modern botany. May be repeated with new content. Maximum credit six units with three units applicable on a master's degree.

GRADUATE COURSES

Refer to the Graduate Bulletin.



School of Business Administration

A member of the American Assembly of Collegiate Schools of Business

Faculty

Dean: Hungate

Associate Dean: Crawford

Associate Dean: Barber

Accounting Department
Emeritus: Brown, Dodds, Ferrel, Wright
Chair: Bailey
Professors: Bailey, Brodshatzer, Harned, Lamden, Lightner, Meier, Meigs, Odmark, Snudden, Williamson
Associate Professor: Samuelson
Assistant Professors: Douglas, Porter, Skekel, Toole, Whittenburg

Finance Department
Emeritus: Chapman, Fisher, H., Schmier
Chair: Vandenberg
Professors: Hippaka, Hungate (Dean), Hutchins, Neuberger, Nye, Reints, Reznikoff, Vandenberg, Wijnholds
Associate Professors: Block, Short, Smith
Assistant Professors: Cowan, Crabb, Fisher, R., Sachdeva, Sterk, Warschauer, Wilbur

Information Systems Department
Emeritus: Gibson, LeBarron
Chair: Spaulding
Professors: Archer, Crawford (Associate Dean), Langenbach, Straub
Associate Professor: Spaulding
Assistant Professors: Feeney, Hatch, Lane, Swanson, Vik
Lecturers: Eichhorst, Stallard

Management Department
Emeritus: Torbert
Chair: Sherrard
Professors: Atchison, Belasco, Belcher, Galbraith, Ghorpade, Hampton, Mitton, Peters, Pierson, Sherrard, Srbich
Associate Professors: Beatty, Hesse
Assistant Professors: Jenkins, Lackritz, Mitry, N., Olson, Soukup
Lecturers: Chen, Unterman

Marketing Department
Emeritus: Akers
Chair: Haas
Professors: Barber (Associate Dean, Graduate Studies), Darley, Haas, Hale, Lindgren, McFall, Sharkey, Vanier, Wotruba
Associate Professor: Settle
Assistant Professors: Belch, Gazda, Sciglimpaglia

Offered by the School of Business Administration
Master of Science degree in business administration.
Master of Business Administration.
Majors with the B.S. degree in business administration in the following fields: accounting, finance, information systems, insurance, management, marketing, real estate.
Teaching major in business for the single subject teaching credential.
Minors in the following fields: accounting, business management, employee relations, finance, information systems, insurance, marketing, production and operations management.

The Business Administration Program — Admission to Majors

The undergraduate business administration program at San Diego State University is structured such that students desiring a business administration major are admitted to the general business administration major for their first two years of university work. During these first two years students should complete general education courses and a common core of eight lower division preparation for the business major courses — Business Administration 140, Business Law; Business Administration 180, Information Processing and Computer Programming; Business Administration 212, Accounting Fundamentals; Business Administration 290, Written Communications in Business; Economics 101, Principles of Economics (Macro); Economics 102, Principles of Economics (Micro); Mathematics 119, Elementary Statistics; and Mathematics 120, Mathematics for Business Analysis.

After students complete the preparation for the business major core courses listed above with no less than a grade of "C" for any course, they must present evidence of completion of these courses in the form of college or university transcripts or official grade sheets to the Undergraduate Planning and Advising Center in the School of Business Administration. Subsequent to verification of completion of these courses, students must declare a specific business administration major — accounting, finance, information systems, insurance, management, marketing, or real estate. Students are eligible to take upper division business courses after they have declared a specific area major in business.

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 101 and 102; Economics 201 or Mathematics 119 and Mathematics 120 or 150. (25-27 units.)

Major. A minimum of 43 upper division units to include Business Administration 301 or 302, 310, 311, 312, 323, 350, 370, 405, 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. A minimum of 40 percent (52 units) must be in course work outside Business Administration and Economics; twelve of these units must be at the upper division level and may be used to meet general education requirements.

Finance Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 290; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (25-27 units.)

Major. A minimum of 40 upper division units to include Business Administration 301 or 302, 310, 321, 323, 325, 327, 350, 370, 405, 423; Economics 490; at least three units selected from Business Administration 329 and 425; and three units of electives selected from Business Administration. Fifty-two units must be taken outside Business Administration and Economics.

Information Systems Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212; 280 290; Economics 101 and 102; Mathematics 120 or 150; and either Economics 201 or Mathematics 119. (28-30 units.)

Major. A minimum of 40 upper division units to include Business Administration 301, 315, 323, 350, 360, 370, 380, 383, 385, 405, 480, 482, and three units of electives selected from Business Administration 302, 306, 327, 341, 352, 389, 456, 473. Fifty-two units must be taken outside Business Administration and Economics.

Insurance Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 141, 180, 210A-210B or 212, 290; Economics 101 and 102; Economics 201 or Mathematics 119 and Mathematics 120 or 150. (28-30 units.)

Major. A minimum of 39 upper division units, to include Business Administration 301 or 302, and 323, 342, 346, 348, 350, 370, 405, 441, 443; and nine 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 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 concentrate in two areas of study in the major or to obtain a broad background in management with a concentration in one of the areas of study within the major. The areas of concentration are Personnel and Industrial Relations, Production and Operations Management, Organizational Behavior, Business Environment and Policy, and Statistics and Management Science.

(1) Professional Curriculum Within the Major Field

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 290; Economics 101 and 102; Mathematics 119; and Mathematics 120 or 150. (25-27 units.)

Major. Business Administration 301 or 302, 315, 323, 350, 351, 352, 356, 360, 370, 405. (31 units.)

(2) Areas of Concentration Within the Major Field

Select 12 units from Business Administration 366, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464. (Six units must be within one of the areas below.)

(a) Personnel and Industrial Relations: Business Administration 452, 453, 460.

(b) Production and Operations Management: Business Administration 461, 462.

(c) Organizational Behavior: Business Administration 451, 454.

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

(e) Business Environment and Policy: Business Administration 450, 455, 456, 457, 458, 459.

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

A minimum of 12 units must be taken in upper division courses outside of the Department of Economics and the School of Business Administration. Acceptable courses at the lower division level are Mathematics 151 or higher and units in a foreign language. These courses are in addition to and may not be used to satisfy any general education requirements.

Marketing Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 290; Economics 101 and 102; Mathematics 120 or 150, and either Economics 201 or Mathematics 119. (25-27 units.)

Major. A minimum of 37 upper division units to include Business Administration 301, 323, 350, 370, 371, 405, 470, 471, and 479; nine units selected from Business Administration 372, 373, 374, 375, 376, 472, 473, 474, 475, and 476; and three units of electives selected from remaining upper division business administration courses except those listed above. A minimum of 40 percent (52 units) must be in course work outside Business Administration and Economics; 12 of these units must be at the upper division level.

Real Estate Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 140, 180, 210A-210B or 212, 231, 290; Economics 101 and 102; Economics 201 or Mathematics 119, and Mathematics 120 or 150. (28-30 units.)

Major. A minimum of 39-40 upper division units to include Business Administration 301 or 302, 323, 335, 350, 370, 405, 433, 437; Public Administration 320; and 12-13 units selected from Business Administration 315, 333, 342, 373, 410, 431, 435, 441; Economics 422, 490, 559; Geography 354, 559. Fifty-two units must be taken outside Business Administration and Economics.

Business Major

For the Single Subject Teaching Credential

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

Minors

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

Accounting: A minimum of 16 units to include Business Administration 212, 310, 312 and 410.

Business Management: A minimum of 22 units to include Economics 101 and 102, Business Administration 210A-210B or 212, 350; and nine units selected from Business Administration 351 or 352, 356, 360, 459.

Employee Relations: A minimum of 22 units to include Economics 101 and 102, Business Administration 210A-210B or 212, 350, 352, and six units selected from Business Administration 351, 452, 453, 460.

Finance: A minimum of 19 units to include Business Administration 210A-210B or 212, 321, 323, 327, and 329; Mathematics 119.

Information Systems: Twenty-one units required, including Business Administration 180, 280, 380, 383, 385, 480, and Mathematics 119.

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: A minimum of 20 units to include Business Administration 210A, 370; Economics 102; and 12 units selected from Business Administration 301, 371, 372, 373, 374, 375, 376, 470, 472, 473, 474, 475, and 476.

Production and Operations Management: A minimum of 22 units to include Economics 101 and 102; Business Administration 210A-210B or 212, 301 or 302, 350, 360, and three units selected from Business Administration 366, 461, 462.

LOWER DIVISION COURSES

140. *(30A.)* **Business Law (3) I, II**
Introduction to legal institutions; nature and sources of law; the judicial system; legal concepts and cases involving contracts, agency, and sales.

141. *(30B.)* **Business Law (3) I, II**
Prerequisite: Business Administration 140.
Legal concepts and cases to be selected from business organization, negotiable instruments, property, security devices, creditors' rights and bankruptcy, trade regulation, and labor law. Students preparing for public accounting should take Business Administration 340 instead of 141.

150. *(40.)* **The Business Enterprise (3) I, II**
The business enterprise and its function in society; interrelations of ownership, entrepreneurship, and administration; interactions within the firm and within and among industries.

180. *(83.)* **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. *(1A-1B.)* **(2-2) or 212.** *(1A-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**
Functions and regulation of the real estate market; transfers of property including escrows, mortgages, deeds, title insurance; appraisal techniques; financing methods; leases; subdivision development; property management. Prerequisite for major in Real Estate.

280. *(84.)* **Business Systems Programming (3) I, II**
Prerequisite: Business Administration 180.
Fundamental concepts of data and file manipulation on using a procedure-oriented language.

290. *(80.)* **Written Communications in Business (3) I, II**
Principles of effective writing applied to business and industrial situations and to the organization and presentation of reports.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(190.)* **Statistical Analysis for Business (3) I, II**
Prerequisites: Mathematics 120; Economics 201 or Mathematics 119.
Statistical methods applied to business decision making.

302. *(191.)* **Quantitative Methods (3)**
Prerequisites: Mathematics 120; Economics 201 or Mathematics 119.
A study of various management science techniques such as simulation, transportation and simple linear programming and queuing theory.

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

310. *(100.)* **Intermediate Accounting (4) I, II**
Prerequisite: Minimum grade of C in Business Administration 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 310 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.
Problems involved in partnerships, consignments, consolidations, receiverships, foreign exchange, fund accounting, and other specialized areas.

315. *(103.)* **Accounting for Managers (4) I, II**
Prerequisites: Business Administration 212 and credit or concurrent registration in Business Administration 350.
Managerial accounting and financial accounting for nonaccountants. Not open to students with credit in Business Administration 310 or 312.

321. Managerial Economics (3) I, II
Prerequisites: Completion of lower division course requirements in major or minor.
Role of economic analysis in management decisions. Study of demand, cost, supply theories from a business viewpoint. Emphasis on managerial decision making.

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

325. *(127.)* **Planning of Capital Expenditures (3) I, II**
Prerequisites: Business Administration 323 and credit or concurrent registration in 301 or 302.
The capital expenditure decision process. Measuring and evaluating benefits and costs. The cost of capital and the evaluation process. Capital rationing problems. Risk and uncertainty in the decision process. Emphasis on quantitative and computer methods in the decision-making process.

327. *(128A.)* **Investments (3) I, II**
Prerequisite: Business Administration 323.
Investment principles and practices with emphasis on problems of the small investor, such as tests of a good investment, sources of information, types of stocks and bonds, mechanics of purchase and sale, investment trusts, real estate mortgages, and the like.

329. *(129.)* **International Business Finance (3) I, II**
Prerequisite: Business Administration 323.
The financing of international business transactions; international payments and their environment; international financial institutions.

331. Real Estate Development (3) I, II
Prerequisites: Economics 101 and 102, or 303 and 304.
Operation of the real estate market; principles of valuation, financing, leasing and property management. Not open to students with credit for Business Administration 231.

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

335. *(172.)* **Real Estate Institutions and Urban Development (3) I, II**
Prerequisite: Business Administration 231 or 331.
The real estate market as a land use determinant. Housing as a public resource. Land as an agent of production. Real estate and the quality of urban life. Real estate development and urban infrastructure. Property taxation. Urban decline and property redevelopment.

339. Consumer Law (3) I, II
Prerequisite: Business Administration 140.
Consumer law as it relates to corporate responsibility and consumer protection, both from the consumer's and the managerial point of view.

340. *(118.)* **Advanced Business Law (3) I, II**
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 suretyship. Special emphasis on problem-solving techniques. Not open to students with credit in Business Administration 141.

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

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

344. *(122.)* **Social Insurance (3) II**
Prerequisite: Economics 102.
Public assistance. Old age, survivors, disability, and hospitalization insurance; workmen's compensation; unemployment compensation and disability insurance. Administration, coverage, financing, and benefit provisions. Strength and weakness of existing systems.

346. *(123.)* **Employee Benefit Plans (3) II**
Theory of employee benefit plans. The group technique. Group life and health insurance. Insured pension plans. Trust fund plans. Funding and cost considerations. Profit sharing plans. Self-employed plans. Problems in benefit security. Administration of employee benefit plans.

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

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

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

352. *(140.)* **Human Resources Management (3) I, II**
Prerequisite: Business Administration 350.
Management of human resources including manpower planning and staffing, training and development, performance appraisal, compensation and union-management relations. Emphasis on effect of economic, sociological and psychological factors on concepts and practices.

356. The Corporation in Modern Society (3)
Prerequisite: Upper division standing.
Impact of the corporation in contemporary American life. Emphasis on examining major social issues of corporate-society interaction, and on the social responsibilities of corporations.

360. *(135.)* **Fundamentals of Production and Operations Management (3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Business Administration 350.
Role of the operations function in the organization. Study of production and operations organizations. Systems analysis, facilities planning, competitive bidding, methods and scheduling and control models.

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

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

371. *(156.)* **Consumer Behavior (3) I, II**
Prerequisite: 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.

372. *(152.)* **Retailing Principles (3) I, II**
Prerequisite: Business Administration 370.
Study of retail stores, emphasizing the problems of store managers and merchandising executives; store location, organization, personnel, sales promotion, buying and handling of merchandise, inventory, turnover, and control methods. Problems of profitable operation under changing conditions.

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

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

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

376. *(165.)* **International Marketing (3) II**
Prerequisite: Business Administration 370.
Bases and promotion of marketing; foreign marketing; organizations and methods; technical and financial features of international markets; selection of organization and trade channels. Determinants and principles of foreign marketing policies.

380. *(185.)* **Automated Management Information Systems (3) I, II**
Prerequisites: Business Administration 280; Economics 201 or Mathematics 119.
Concepts and techniques for the design, development, and implementation of EDP-based management information systems to improve decision making.

382. Information Systems Analysis (3) I, II
Prerequisites: Business Administration 180 and a minimum of three upper division units in the student's major or minor.
Characteristics of computer-based information systems in business. Includes general systems theory and techniques of analysis, design, and implementation. Emphasis on application to fields of accounting, marketing, finance, and management. Not open to students with credit in Business Administration 380.

383. *(187.)* **Advanced Programming Techniques (3) I, II**
Prerequisite: Business Administration 280.
Advanced concepts of data and file manipulation using standard and special features of a procedure-oriented language. (Formerly numbered Business Administration 481.)

385. *(184.)* **Information Systems Management (3) I, II**
Prerequisites: Business Administration 180; Economics 201 or Mathematics 119.
Administrative theories as they apply to typical information systems; interrelationship of personnel, equipment, and services; emphasis on quantitative and qualitative aspects of information systems.

389. *(182.)* **Consumer Income Management (3) I, II**
Functions and responsibilities of consumers; problems of choice making; planning expenditures for housing, household operation, insurance and investments. Economics of installment buying, borrowing procedures, control of frauds, legislation affecting consumers. (Formerly numbered Business Administration 381.)

390. Report Writing (3) I, II
Prerequisite: Business Administration 290.
Advanced study of preparation of analytical and technical reports used in business and other organizations. Includes individualized study of reports in student's career field.

401. *(196.)* **Business Internship (1-3) I, II**
Prerequisite: Consent of Dean of School of Business Administration.
Students to be assigned to business firms to work under the joint supervision of the business firm's supervisor and the course instructor.

405. Business Strategy and Integration (3) I, II
Prerequisites: Business Administration 301 (or 302), 323, 350, 370.
Integration of principles and concepts from all fields of business administration. Emphasis on interaction of disciplines for effective strategy and establishment of top management policy through a combination of case study and a business simulation game.

406. *(194B.)* **Methods in Teaching Business Skills (3) II**
Philosophy and psychology of teaching business skills; presentation and evaluation of objectives, techniques, and materials for skill development.

410. *(106.)* **Income Tax Accounting (4) I, II**
Prerequisite: Minimum grade of C in Business Administration 310 or 315.
Theory and procedures in the preparation of federal and California income tax returns for individuals, partnerships and corporations.

411. *(107.)* **Advanced Income Tax Accounting (3) I, II**
Prerequisite: Business Administration 410.
Theories of taxation as related to personal holding companies, corporate distributions, liquidation and capital changes; fiduciary return preparation; brief survey of gift, estate and social security taxes.

412. *(114.)* **Advanced Managerial Accounting (3) I, II**
Prerequisites: Business Administration 302 and 312.
Use of accounting information systems for managerial decision making. Introduction to decision making situations which use accounting information for full or partial resolution. Consideration of uncertainty, decision theory and specific decision contexts.

414. *(112.)* **Auditing (4) I, II**
Prerequisites: Business Administration 311, 312 and 314.
Consideration of internal control in the design of accounting systems; flow-charting techniques; duties, ethics and responsibilities of the auditor; procedures for verification of financial statements; auditor's reports.

415. *(108.)* **Governmental Accounting (2) I, II**
Prerequisite: Business Administration 310.
Principles of fund accounting useful in state and local governmental units, hospitals, colleges, and universities. Comparisons with commercial accounting emphasized. Includes study of budgetary accounting, appropriations, encumbrances, internal checks and auditing procedures.

417. *(119.)* **Advanced Accounting Problems (3) I, II**
Prerequisite: Business Administration 414.
An intensive review of the accounting principles and procedures covered in the accounting theory and accounting practice sections of the uniform C.P.A. examination prepared by the American Institute of Certified Public Accountants.

421. *(128B.)* **Security Analysis and Investment Strategies (3) I, II**
Prerequisite: Business Administration 327.
Theory and practice of security valuation and market behavior by advanced technical and fundamental analysis. Strategies for optimizing profit and minimizing risk in securities transactions. Institutional and personal portfolio management.

423. *(130.)* **Financial Analysis and Management (3) I, II**
Prerequisites: Business Administration 325 and Economics 490.
Evaluation of conditions and trends in the money and capital markets. Utilization of financial data as related to the problems of business enterprises. Emphasis on decision making and research in finance.

425. *(197.)* **Business Forecasting (3) I, II**
Prerequisites: Business Administration 323, 370, and 301 or 302.
Business fluctuations; forecasting, and related problems confronting the business firm; forecasting techniques; specific forecasts. The use of forecasts in the firm.

431. *(173.)* **Real Estate Finance (3) I, II**
Prerequisites: Business Administration 231 or 331.
Methods of financing real estate; sources of real estate credit; loan servicing; governmental financial agencies; acquisition and sale of mortgages and trust deeds.

433. *(174.)* **Theory of Real Property Value (3) I, II**
Prerequisite: Business Administration 335.
Introduction to theories of real property value. Techniques of value determination. Data analysis techniques.

435. *(175.)* **Real Estate Appraisal Problems (3) II**
Prerequisite: Business Administration 433.
Implementation of advanced value theory and appraisal technique in the solution of valuation problems involving condemnation, and industrial, commercial, land, and special purpose properties.

437. Housing, Renewal and Real Estate Dynamics (3)
Prerequisite: Business Administration 231 or 331.
Entrepreneurial behavior in the housing sector. Models of the housing market. Housing quality, social aspects of housing. Urban renewal and relocation. Low income housing. Public housing. Governmental involvement in the housing sector. Community and environmental factors.

441. *(121A.)* **Property Insurance (3) I**
Prerequisite: Business Administration 342.
Standard forms of property insurance including fire and allied lines, business interruption and consequential loss coverages, inland marine, and ocean marine. Other areas including marketing, underwriting, investment, rate-making, loss adjusting, reinsurance, and government regulation.

443. *(121B.)* **Casualty Insurance (3) II**
Prerequisite: Business Administration 342.
Basis for legal liability. Identification of personal business and professional liability situations, liability risk management. Analysis of major liability insurance contracts including automobile, malpractice, general liability, workmen's compensation. Other areas including underwriting, rate-making, regulation, and reserves of casualty insurers.

445. *(125.)* **Estate Planning (3) I, II**
Programming fundamentals with emphasis on economic, actuarial, and legal principles, program coordination and integration with wills; guardianships; estate planning fundamentals; taxation; business life insurance. Analysis of life insurance selling as a career.

450. Venture Management (3)
Prerequisite: Senior standing.
Process of initiating, expanding, purchasing, and consolidating businesses. Concepts, theories, and techniques of managerial innovation and implementation.

451. Organization Theory and Analysis (3)
Prerequisite: Business Administration 351.
Organizations as systems. Analysis of the impact of technological, structural and administrative factors on management.

452. *(142.)* **Wage and Salary Administration (3) I, II**
Prerequisite: Business Administration 352.
Major problems in the determination and control of compensation from employment. Comparison of underlying theory to current practice.

453. *(143.)* **Union-Management Relations (3) I, II**
Prerequisite: Business Administration 352.
Relationships and interactions among unions, workers, and management. Emphasis on unionization, collective bargaining and central administration, interaction of union and management relative to society.

454. Interpersonal Processes (3)
Prerequisite: Business Administration 351.
Interpersonal aspects of management: interpersonal perception, communication, group dynamics, and influence from a managerial perspective.

455. American Business History (3)
Prerequisite: Senior standing.
Development of the American Business System. Changes in the management and structure of business organizations and the role of business in American society.

456. *(134.)* **Conceptual Foundations of Business (3) I, II**
Prerequisite: Senior standing.
Interdisciplinary study of the foundations of business values and their evolution. The institution of business in the American experience expressed in the impact of business on overall goals, values, and behavior; public, corporate and private.

457. *(141.)* **Applications in Management (1-3) I, II**
Prerequisites: Business Administration 350 and concurrent registration in Business Administration 351, 352, 360 or 459.
Developing specific skills in areas of management.

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. Personnel Staffing and Development (3) I, II
Prerequisite: Business Administration 352.
Design of personnel activities for matching people and jobs. Includes development of techniques for personnel planning, staffing, appraisal, and development. Environmental constraints including legal and market forces.

461. *(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. Modeling, analysis, synthesis, and management of systems. Analysis of case studies.

462. *(138.)* **Operations Planning and Control Systems (3)**
Prerequisites: Business Administration 301 or 302, and 360.
Problems in the design of single- and multiple-product integrated production and inventory control systems. Detailed and aggregate scheduling of operations under deterministic and stochastic demand conditions.

463. *(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 302.
Study of current applications of operations research techniques to the solution of business and industrial problems. Readings, projects, cases, and field work as appropriate.

470. *(157.)* **Marketing Research (3) I, II**
Prerequisites: Business Administration 301 and 370.
Formal 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. *(163.)* **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.
Planning and implementing marketing strategy by integrating the specific elements in the marketing function. The application of the appropriate decision techniques in developing the overall marketing mix and in solving marketing problems.

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

482. *(188.)* **Data Processing Practicum (3) I, II**
Prerequisites: Business Administration 301, 383, 480.
Fundamentals of systems flow charting and computer programming; computer applications to typical automated data processing problems.

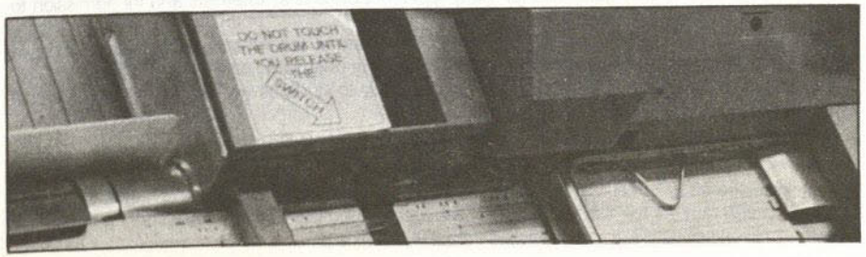
496. *(195.)* **Selected Topics in Business Administration (1-4) I, II**
Prerequisite: Consent of Dean of School of Business Administration.
Selected areas of concern in business administration; topic to be listed in class schedule. May be repeated with new content with consent of Dean of School of Business 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Chemistry

In the College of Sciences

The department is on the approved list of the American Chemical Society.

Faculty

Emeritus: Harrington, Joseph, Robinson, Rowe, Wick
Chair: Jones
Professors: Abbott, Bennett, Cobble, Coffey, Grubbs, Hellberg, Isensee, Jensen, Jones, Landis, Malik, Malley, Mathewson, O'Neal, Richardson, Ring, Roeder, Sharts, Spangler, Stewart, Wadsworth, Walba, Woodson
Associate Professors: Dahms, Lebherz

Offered by the Department

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

Chemical Physics Major

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

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

A minor is not required with this major.

Preparation for the major. Chemistry 200*, 200L*, 201*, 201L*, 231, 231L and 251*; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L. (43 units.)

Major. Thirty-nine upper division units to include Chemistry 410A-410B, 431, 431L, 520A and 550; Mathematics 340A; Physics 311, 350A-350B, 354A-354B, 357 and 510.

* Chemistry 204A-204B replaces Chemistry 200, 200L, 201, 201L, 251 in all degree programs.

Chemistry Majors

In Applied Arts and Sciences

Three majors in chemistry are offered in applied arts and sciences, as follows:

(1) Chemistry major with the B.S. degree and Certificate of the American Chemical Society, a program designed to qualify graduates for many types of positions as chemists and for admission to graduate work in chemistry;

(2) Chemistry major with the A.B. degree and Certificate of the American Chemical Society, a program designed to prepare students for graduate work in chemistry; and

(3) Related Professions major, a program available only to students who are taking a premedical or predental curriculum.

Certificate of the American Chemical Society

The Department of Chemistry is on the approved list of the American Chemical Society. Programs leading to a chemistry major with the B.S. degree or the A.B. degree are designed to meet the standards prescribed for the Certificate of the American Chemical Society. The program leading to the Related Professions major is not offered with the Certificate.

Chemistry Major

With the B.S. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

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

A minor is not required with this major.

The curriculum outlined below for the B.S. degree in applied arts and sciences is based upon the recommendations of the Committee for Professional Training of Chemists of the American Chemical Society. It qualifies graduates for many types of positions as chemists and provides the training required by most universities for admission to graduate work in chemistry.

Preparation for the major. Chemistry 200*, 200L*, 201*, 201L*, 231, 231L, 237, and 251*; Mathematics 150, 151, and 152; and Physics 195, 195L, 196, 196L, 197, 197L. (44 units.)

Major. A minimum of 36 upper division units to include Chemistry 407, 410A-410B, 431, 431L, 437, 457A-457B, 520A, 550, 560A, one unit of 498, and 11 units of upper division electives in chemistry or in related subjects with approval of the department.

* Chemistry 204A-204B replaces Chemistry 200, 200L, 201, 201L, 251 in all degree programs.

OUTLINE FOR THE B.S. DEGREE AND CERTIFICATE

	Units 1st Sem.	Units 2nd Sem.
First year		
Chemistry 200, 200L	5	—
Chemistry 201, 201L	—	5
† Mathematics 150, 151	5	4
Physics 195, 195L	—	4
* General Education	6	3
* Physical Activities	1	1
	17	17
Second year		
Chemistry 231, 231L	4	—
Chemistry 237—437	1	1
Chemistry 251	4	—
¶ Chemistry 410A	—	3
Chemistry 431, 431L	—	4
Mathematics 152	4	—
Physics 196, 196L	4	—
Physics 197, 197L	—	4
* General Education	—	3
	17	15
Third year		
Chemistry 407	—	1
Chemistry 410B	3	—
Chemistry 550	—	2
Chemistry 560A	3	—
# American Institutions	3	3
* General Education	6	3
General Electives	—	6
	15	15
Fourth year		
Chemistry 457A-457B	2	2
Chemistry 498	1	—
Chemistry 520A	3	—
Chemistry Electives	5	6
General Electives	3	4
* General Education	3	3
	17	15

* Refer to catalog section on General Education requirements.
† Some students will be required to take Mathematics 104 or 140 or both in their first semester because of failure to qualify on the mathematics placement examination. The appropriate number of units should then be subtracted from General Electives.
# If this requirement is met by examination the appropriate number of units should be added to general education courses.
¶ Students who must begin with Mathematics 140 rather than 150 should take Chemistry 410A in the first semester of their third year.

Chemistry Major

With the A.B. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

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

A minor is not required with this major.

Preparation for the major. Chemistry 200*, 200L*, 201*, 201L*, 231, 231L, 237, and 251*; Mathematics 150, 151, and 152; and Physics 195, 195L, 196, 196L, 197, 197L. (44 units.)

Major. A minimum of 25 upper division units in chemistry to include Chemistry 407, 410A-410B, 431, 431L, 437, 457A-457B, 520A, 550; one unit of 498; and three units of upper division electives in chemistry to be selected from Chemistry 510, 520B, 530, 537, 560A.

* Chemistry 204A-204B replaces Chemistry 200, 200L, 201, 201L, 251 in all degree programs.

OUTLINE FOR THE A.B. DEGREE AND CERTIFICATE

First year	*Units 1st Sem.*	*2nd Sem.*
Chemistry 200, 200L	5	—
Chemistry 201, 201L	—	5
† Mathematics 104, 140, 150	5	5
Physics 195, 195L	—	4
* General Education	6	3
* Physical Activities	1	1
	17	18

Second year	*Units 1st Sem.*	*2nd Sem.*
Chemistry 231, 231L	4	—
Chemistry 237—437	1	1
Chemistry 251	4	—
Chemistry 431, 431L	—	4
Mathematics 151, 152	4	4
Physics 196, 196L	4	—
Physics 197, 197L	—	4
* General Education	—	3
	17	16

Third year	*Units 1st Sem.*	*2nd Sem.*
Chemistry 407	—	1
Chemistry 410A-410B	3	3
Chemistry 550	—	2
# American Institutions	3	3
* General Education	9	6
	15	15

Fourth year	*Units 1st Sem.*	*2nd Sem.*
Chemistry 457A-457B	2	2
Chemistry 498	1	—
Chemistry 520A	3	—
Chemistry Electives	3	—
General Electives	4	11
	13	13

Chemistry Major

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

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

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

* Refer to catalog section on General Education requirements.
† Students eligible to take Mathematics 150 in their first semester should do so and substitute for Mathematics 104 and/or 140 two to five units of general electives.
# If this requirement is met by examination the appropriate number of units should be added to general education courses.

Preparation for the major. Chemistry 200*, 200L*, 201*, 201L*, 231, 231L, 237, 250; Physics 195, 195L, 196, 196L; Mathematics 104, 140 (unless exempted by examination), 150, 151; Botany 200; and Zoology 200. (50 units.)

Major. A minimum of 24 upper division units in chemistry to include Chemistry (310A-310B, 317, 577) or (407, 410A-410B, 457A-457B, 550), 431, 431L, 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 204A-204B replaces Chemistry 200, 200L, 201, 201L, and 250 or 251 in all degree programs.

Chemistry Major

For the Single Subject Teaching Credential in Physical Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

All candidates for a teaching credential must complete all requirements for a chemistry major for either the A.B. or the B.S. degree in Applied Arts and Sciences. These programs are subject to the approval of the Commission on Teacher Preparation and Licensing.

Chemistry Minor

The minor in chemistry consists of 24 units in chemistry to include Chemistry 200*, 200L*, 201*, 201L*; 230, 230L, or 231, 231L; and 250; and six units of upper division electives. Chemistry 310A-310B** or 410A-410B** are strongly recommended.

* Chemistry 204A-204B replaces Chemistry 200, 200L, 201, 201L, and 250 or 251.
** Additional prerequisites in mathematics and physics required for these courses.

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

Graduation with Distinction

A student desiring to graduate with Distinction in Chemistry must meet the university requirements as shown on page and in addition have completed four units of Chemistry 498 by the time of graduation and be recommended by the faculty member directing the Chemistry 498 project.

LOWER DIVISION COURSES

100. *(2A.)* **Introductory General Chemistry (2) I, II**
Prerequisite: Concurrent registration in Chemistry 100L.
Elementary principles of chemistry. Not open to students with credit in Chemistry 200, 200L. (Formerly numbered Chemistry 100A.)

100L. Introductory General Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 100. Chemistry 100 and 100L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

107. *(22.)* **Glass Blowing (1) I, II**
Three hours of laboratory.
Prerequisite: Chemistry 201 and 201L.
Elementary training in the manipulation of glass.

130. *(2B.)* **Elementary Organic Chemistry (2) I, II**
Prerequisites: Concurrent registration in Chemistry 130L; Chemistry 100, 100L or 200, 200L.
Introduction to the compounds of carbon including both aliphatic and aromatic substances. Not open to students with credit in Chemistry 201, 201L or 202. (Formerly numbered Chemistry 100B.)

130L. Elementary Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 130. Chemistry 130 and 130L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

160. *(3.)* **Introductory Biochemistry (3) I, II**
Prerequisite: Chemistry 130 and 130L.
Fundamental principles of the chemistry of living processes. This course intended primarily for majors in home economics, nursing, and related fields.

200. *(1A.)* **General Chemistry (3) I, II**
Prerequisites: Concurrent registration in Chemistry 200L. High school chemistry or a grade of "C" or better in Chemistry 100, 100L; and two years of college preparatory mathematics.
General principles of chemistry with emphasis on inorganic materials. Duplicate credit will not be allowed for the corresponding course in Chemistry 204A. Students with credit for both Chemistry 100, 100L and 200, 200L will receive a total of 5 units of credit toward graduation. (Formerly numbered Chemistry 200A.)

200L. General Chemistry Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 200. Chemistry 200 and 200L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

201. *(1B.)* **General Chemistry (3) I, II**
Prerequisites: Chemistry 200, 200L, or 204A. Concurrent registration in Chemistry 201L.
Continuation of Chemistry 200. General principles of chemistry with emphasis on inorganic materials and qualitative analysis. Duplicate credit will not be allowed for the corresponding course in Chemistry 202 or 204B. (Formerly numbered Chemistry 200B.)

201L. General Chemistry Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 201. Chemistry 201 and 201L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

202. *(1E.)* **General Chemistry for Engineers (3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Chemistry 200 and 200L.
A continuation of the study of the principles of chemistry with emphasis on the relationships to the field of engineering. Open only to engineering majors. Not open to students with credit in Chemistry 201 and 201L. (Formerly numbered Chemistry 201.)

204A-204B. *(10A-10B.)* **Chemical Principles and Techniques (Honors) (5-5)**
Three lectures and six hours of laboratory.
Prerequisites: High school chemistry, physics, and mathematics, superior qualification on both the Chemistry and the Mathematics Placement Examinations and high ranking on the ACT or SAT tests. Permission card from the department is required for registration in this course.
The application of modern electronic theory to the study of general chemistry with emphasis in the laboratory on analytical methods. Qualitative and quantitative analysis is included. Chemistry 204A-204B takes the place of Chemistry 200, 200L, 201, 201L, and 251 for these students as prerequisites for further courses in chemistry.

230. *(11.)* **Introductory Organic Chemistry (3) I, II**
Prerequisite: Concurrent registration in 230L. Chemistry 201 and 201L.
Aliphatic and aromatic compounds including reaction mechanisms. For students needing only one semester of organic chemistry. Not open to students with credit in Chemistry 231 and 231L.

230L. Introductory Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 230. Chemistry 230 and 230L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

231. *(12.)* **Organic Chemistry (3) I, II**
Prerequisite: Concurrent registration in 231L. Chemistry 201 and 201L.
Properties and synthesis of organic compounds including reaction mechanisms. First half of a year course. Not open to students with credit in Chemistry 230 and 230L.

231L. Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 231. Chemistry 231 and 231L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

237. *(13.)* **Organic Chemistry Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Open only to students enrolled concurrently in Chemistry 231 and 231L.
The theory and practice of laboratory operations.

250. *(4.)* **Techniques of Analytical Chemistry (5) I, II**
Three lectures and six hours of laboratory.
Prerequisite: Chemistry 201, 201L, or 202.
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.

251. *(5.)* **Analytical Chemistry (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 201 and 201L; and credit or concurrent registration in Mathematics 122 or 150.
Theory and practice of volumetric, gravimetric and electrical methods of analysis. Not open to students with credit in Chemistry 250. Duplicate credit will not be allowed for equivalent work in Chemistry 204A-204B.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(7A.)* **Chemical Principles in Environmental Protection (3) I, II**
Two lectures and two hours of discussion.
Prerequisites: Completion of natural sciences requirements under the Foundations of Learning component of General Education.
Review of fundamental chemical concepts and their application to problems in environmental degradation and resource depletion. Not open to chemistry majors. (Formerly numbered Chemistry 101A.)

302. *(7B.)* **Chemistry and Society (3) II**
Two lectures and two hours of discussion.
Prerequisites: Completion of natural sciences requirements under the Foundations of Learning component of General Education. Recommended: Chemistry 130.
Application and implications of chemical technology in the contemporary world. Advances in fuels, materials, medicinal and agricultural chemistry. Political, economic and ethical implications. Not open to chemistry majors. (Formerly numbered Chemistry 101B.)

307. *(135.)* **CHEM Study (3)**
One lecture and six hours of laboratory.
Prerequisite: Chemistry 201 and 201L.
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 teacher candidates.

310A-310B. *(109A-109B.)* **Fundamentals of Physical Chemistry (3-3)**
Prerequisites for 310A: Chemistry 250, Mathematics 122, and Physics 124B and 125B. 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.

360A-360B. *(114A-114B.)* **Clinical Biochemistry (4-4)**
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 230, 230L, or 231, 231L, 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.

361A-361B. *(115A-115B.)* **Fundamentals of Biochemistry (3-3) I, II**
Prerequisites: Chemistry 230, 230L, or 231, 231L, and 250 or 251.
The chemistry of intermediary metabolism and its regulation. Not open to students with credit in Chemistry 560A-560B.

407. Problem Solving in Chemistry (1) I, II
Three hours of laboratory.
Prerequisites: Chemistry 231, 231L and 251.
Acquisition and statistical analysis of data and experimental design. (Formerly numbered Chemistry 207.)

410A-410B. *(110A-110B.)* **Physical Chemistry (3-3) I, II**
Prerequisites: Chemistry 251, Mathematics 152, and credit or concurrent registration in Physics 197 and 197L. Not open to students with credit in Chemistry 310A or 310B.
Theoretical principles of chemistry with emphasis on mathematical relations.

431. *(112.)* **Organic Chemistry (3) I, II**
Prerequisites: Concurrent registration in 431L. Chemistry 231 and 23IL.
A continuation of Chemistry 231.

431L. Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Chemistry 431. Chemistry 431 and 431L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

437. *(113.)* **Organic Chemistry Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Open only to students enrolled concurrently in Chemistry 431 and 431L.
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 407 and 550. Chemistry 457A is prerequisite to 457B.
Instrumental methods and physical chemistry concepts applied to advanced projects in chemistry. Emphasis on maintenance of the laboratory notebook with some report writing.

467. *(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 (1-4)**
Prerequisite: Consent of instructor.
Selected topics in modern chemistry. May be repeated with new content. Maximum credit six units.

498. *(198.)* **Senior Project (1-3) I, II Cr/NC**
Prerequisites: Three one-year courses in chemistry and senior standing.
An individual investigation and report on a problem. Maximum credit six units.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisite: Consent of instructor. Open only to students who have shown ability to do A or B work in Chemistry.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

500A-500B. *(160A-160B.)* **Principles of Chemical Engineering (3-3)**
(Same course as Mechanical Engineering 584A-584B.)
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or Chemistry 310A or 410A.
Industrial stoichiometry; fluid flow and heat transfer as applied to unit operations such as evaporation, distillation, extraction, filtration, gas-phase mass transfer, drying, and others. Problems, reports, and field trips.

501. *(180.)* **Chemical Oceanography (3)**
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)**
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) 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 and 431L.
Electronic and physical properties of organic molecules; structure-reactivity correlations: Electronic structure of molecules (qualitative molecular orbital theory); stereochemistry; and linear free energy relationships.

537. *(154.)* **Organic Qualitative Analysis (4)**
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 431, 431L, and credit or concurrent registration in Chemistry 310A or 410A. Chemistry 457A-457B recommended.
Chemical, physical, and spectral methods discussed and employed to determine structure of organic compounds. Purification and separation techniques stressed.

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

560A-560B. *(116A-116B.)* **General Biochemistry (3-3)**
Prerequisites: Chemistry 310B or 410B, and 431 and 431L.
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

Refer to the Graduate Bulletin.

Chinese

In the College of Arts and Letters

Faculty

Assistant Professor: Woo

Offered by the Department of Classical and Oriental Languages and Literatures

Courses in Chinese.

Major or minor work in Chinese is not offered.

LOWER DIVISION COURSES

Native speakers of Mandarin Chinese will not receive credit for taking lower division courses except with advance approval from the department.

101. *(1.)* **Elementary (4) I**

Four lectures and one hour of laboratory.

Pronunciation, oral practice, readings on Chinese culture and civilization, minimum essentials of grammar.

202. *(2.)* **Elementary (4) II**

Four lectures and one hour of laboratory.

Prerequisite: Chinese 101.

Continuation of Chinese 101.

299. *(99.)* **Experimental Topics (1-4)**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

303. *(103.)* **Readings in Contemporary Chinese (4) I**

Prerequisite: Chinese 202.

Readings in contemporary authors: poetry, short stories, essays.

304. *(104.)* **Readings in Chinese (4) II**

Prerequisite: Chinese 303.

Readings ranging from classical to contemporary 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.

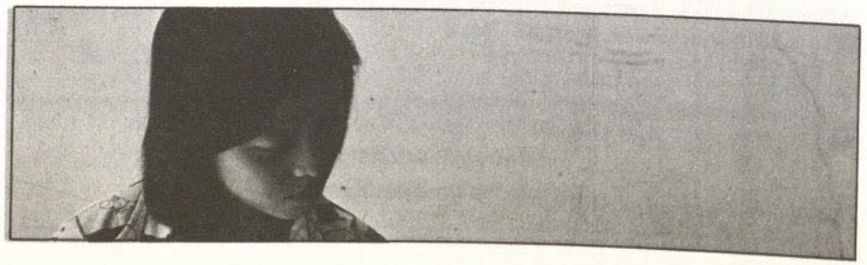
496. *(185.)* **Topics in Chinese Studies (1-4)**

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**

Prerequisite: Consent of instructor.

Individual study. Maximum credit six units.



Classical and Oriental Languages and Literatures

In the College of Arts and Letters

Faculty

Chair: Genovese

Professors: Genovese, Piffard, Schaber, Warren

Associate Professor: Eisner

Assistant Professors: Gefter, Ogawa, Woo

Lecturers: Naveh, Rodriguez, Wirshbo

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 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 Classics.)

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 Classics.)

(For other courses in translation see comparative literature, history, humanities, philosophy, and religious studies.)

Classics

In the College of Arts and Letters

Faculty

Emerita: Burnett

Professors: Genovese, Piffard, Schaber, Warren

Associate Professor: Eisner

Lecturer: Wirshbo

Offered by the Department of Classical and Oriental Languages and Literatures

Major in classics with the A.B. degree in liberal arts and sciences.

Teaching major in classics (concentration in Latin) for the single subject teaching credential in foreign languages.

Minor in classical humanities.

Minor in classics.

Classics is the discipline which embraces the study of all aspects of ancient Greek and Roman civilizations, especially literature. The foundation and basic tool for a fuller appreciation of classical culture is a familiarity with ancient Greek or Latin. Courses marked by the letters "G" or "L" are language courses in Greek or Latin and therefore satisfy foreign language requirements. Courses referred to simply as "classics" require no knowledge of Greek or Latin and are taught entirely in English.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Latin may be counted as the equivalent of Classics 101L, three years the equivalent of Classics 202L. 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.

Classics Major

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

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

A minor is not required with this major.

Concentration in Classical Humanities

Preparation for the major. Choice of Classics 101G and 202G, Classics 250G, Classics 101L and 202L, or Classics 250L. (8-10 units.) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements ***per se*** for the completion of the major.

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Major. A minimum of 30 upper division units to include Classics 320, 330, History 500A-500B, and Philosophy 301 (prerequisites are waived for students in this major); six units from classics, Anthropology 478, Art 568, Religious Studies 310, or Speech Communication 350; six units of Greek or Latin; and three units of Classics 499 as a directed senior project.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.

Concentration in One Language

Preparation for the major. Choice of Classics 101G and 202G, Classics 250G, Classics 101L and 202L, or Classics 250L. (8-10 units.)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Major. A minimum of 30 upper division units to include 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.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.

Concentration in Two Languages

Preparation for the major. Classics 101G and 202G, or Classics 250G; Classics 101L and 202L, or Classics 250L. (16-20 units.)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Major. A minimum of 30 upper division units to include 12 units from classics, History 500A, 500B, or Philosophy 301; nine units of Greek; and nine units of Latin.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.

Classical Humanities Minor

The minor in classical humanities consists of a minimum of 15 units, 12 of which must be upper division. Lower division units may be selected from the following courses in classics: Classics 120, 130, 140, 299. Three to nine upper division units must be selected from courses in each of the following three subject areas:

Literature: Classics 310, 320, 330, 350, 496, 499.

Civilization: Classics 340, 496, 499; History 500A, 500B.

Related Disciplines: Anthropology 478; Art 568; Philosophy 301; Religious Studies 310; Speech Communication 350.

Students should note that some of these upper division courses have lower division prerequisites, but these prerequisites do not constitute requirements ***per se*** for completion of the minor.

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

Classics Minor

The minor in classics consists of a minimum of 15-22 units, 12 of which must be upper division and nine of which must be in Latin or in Greek. Lower division units may be selected from courses in one of the following two subject areas:

Greek Language: Classics 101G, 202G, 250G.

Latin Language: Classics 101L, 202L, 250L.

Three to nine upper division units may be selected from courses in one of the following two subject areas.

Greek Language: Classics 303G, 304G, 440G, 496G, 499G, 550G.

Latin Language: Classics 303L, 304L, 440L, 496L, 499L, 550L.

Three to nine upper division units must be selected from courses in each of the following two areas.

Literature: Classics 310, 320, 330, 350, 496, 499.

Civilization: Classics 340, 496, 499; History 500A, 500B; Philosophy 301.

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

Classics Major (Concentration in Latin)

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Preparation for the major. Classics 101L and 202L. (10 units.)

Major. A minimum of 30 upper division units to include Classics 320 and History 500B; nine additional units selected from classics, History 500A, or Philosophy 301; and 15 units in Latin to include three units of Classics 499L as a course in teaching techniques.

LOWER DIVISION COURSES

101G. *(1.)* **Elementary Greek I (5) I**
Introduction to ancient Greek, emphasizing grammatical foundations of New Testament and Attic prose. Aimed toward rapid comprehension. (Formerly numbered Greek 101.)

101L. *(1.)* **Elementary Latin I (5) I**
Introduction to Latin, emphasizing grammatical foundations of classical prose. Aimed toward rapid comprehension. Not open to students who have completed three years of high school Latin. (Formerly numbered Latin 101.)

120. *(20.)* **Latin and Greek Word Derivation (3)**
A general and elementary course in philology, emphasizing frequently occurring Latin and Greek bases and their English derivatives. (Formerly numbered Classics 220.)

130. *(50.)* **Scientific Terminology (3) I**
Etymological and grammatical analysis of scientific terminology of Greek and Latin derivation. (Formerly numbered Classics 250.)

140. *(70.)* **The Heritage of Greece and Rome (3)**
Greek and Roman art, literature, and institutions as reflected in the Western tradition. (Formerly numbered Classics 270.)

202G. *(2.)* **Elementary Greek II (5) II**
Prerequisite: Classics 101G.
Continuation of Greek grammar with selections illustrating syntax and style. (Formerly numbered Greek 202.)

202L. *(2.)* **Elementary Latin II (5) II**
Prerequisite: Classics 101L.
Continuation of Latin grammar with selections illustrating syntax and style. Not open to students who have completed four years of high school Latin. (Formerly numbered Latin 202.)

250G. Accelerated Elementary Greek (8) II

Not open to students with credit in Classics 101G and 202G.

Intensive one-semester introduction to ancient Greek, emphasizing basic grammar, vocabulary, syntax. Preparation for Classics 303G. (Formerly numbered Greek 250.)

250L. Accelerated Elementary Latin (8) II

Not open to students with credit in Classics 101L and 202L; not open to students who have completed four years of high school Latin.

Intensive one-semester introduction to Latin, emphasizing basic grammar, vocabulary, syntax. Preparation for Classics 303L. (Formerly numbered Latin 250.)

299. *(99.)* **Experimental Topics (1-4)**

Refer to the catalog statement on Experimental Topics on page 116. 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.

C. Experimental Topics in Classics.
G. Experimental Topics in Greek.
L. Experimental Topics in Latin.

UPPER DIVISION COURSES

(Intended for Undergraduates)

303G. Readings in Greek Prose (3) I

Prerequisite: Classics 202G or 250G.

Readings selected from Greek history, philosophy, oratory, and New Testament. Authors may include Xenophon, Plato, Lysias, the Evangelists. Emphasis on rapid reading. (Formerly numbered Greek 303.)

303L. Readings in Latin Prose (3) I

Prerequisite: Classics 202L or 250L.

Readings selected from classical Latin history, philosophy, oratory, letters. Authors may include Sallust, Cicero, Pliny the Younger. Emphasis on rapid reading. (Formerly numbered Latin 303.)

304G. Readings in Greek Poetry (3) II

Prerequisite: Classics 303G.

Readings selected from Greek epic, elegy, tragedy. Authors may include Homer, Sophocles, Euripides. (Formerly numbered Greek 304.)

304L. Readings in Latin Poetry (3) II

Prerequisite: Classics 303L.

Readings selected from classical Latin epic, lyric, elegy, comedy. Authors may include Vergil, Catullus, Ovid, Plautus. (Formerly numbered Latin 304.)

310. *(110.)* **Greek and Roman Mythology (3)**

Mythological elements in Greek and Roman art, literature, and religion.

320. *(102A.)* **Classical Literature (3)**

Reading in translation of Greek and Latin masterpieces. Emphasis on epic and prose genres. Authors such as Homer, Herodotus, Plato, Vergil, Apuleius. Literary and historical criticism.

330. *(102B.)* **Classical Drama (3)**

Reading in translation of Greek and Roman tragedies and comedies. Playwrights such as Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Seneca. Literary, dramatic, historical criticism.

340. *(140.)* **Classical Civilization (3)**

Greek and Roman civilization from Bronze Age to Late Empire. Integration of history, philosophy, literature, the arts, and society.

350. Eros and Amor (3)

Reading in translation of Greek and Latin works concerned with love and sexuality. Emphasis on the great literary *affaires d'amour* as well as common, mythical, and philosophical attitudes. Authors such as Sappho, Euripides, Plato, Catullus, Ovid, Longus. Literary criticism and cultural comparisons.

440G. *(106.)* **New Testament Greek (3)**

Prerequisite: Classics 202G or 250G.

Study of Koine and Byzantine Greek characteristics with selected readings from New Testament and ecclesiastical sources. (Formerly numbered Greek 440.)

440L. *(107.)* **Late Latin (3)**

Prerequisite: Classics 202L or 250L.

Selections from authors ranging from Tertullian and St. Augustine to Erasmus and Milton. The changes in Latin throughout the centuries. (Formerly numbered Latin 440.)

496. *(185.)* **Topics in Classical Studies (1-4)**

Topics in classical languages, literatures, cultures, and linguistics. May be repeated with new content. Maximum credit eight units.

C. Topics in Classics.
G. Topics in Greek.
L. Topics in Latin.

499. *(199.)* **Special Study (1-3) I, II**

Prerequisites: Consent of instructor and two upper division courses in classics or in Greek or Latin when appropriate.

Individual study. Maximum credit six units.

C. Special Study in Classics.
G. Special Study in Greek.
L. Special Study in Latin.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

550G. *(155.)* **Advanced Reading in Greek (3 or 4)**

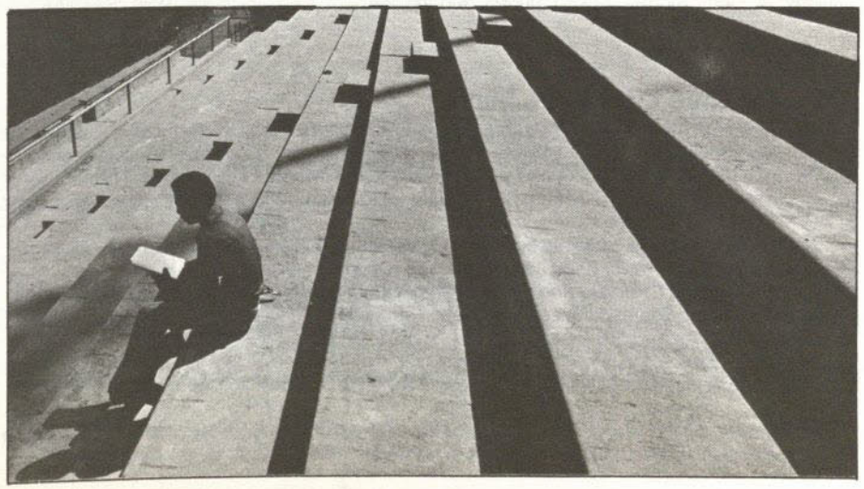
Prerequisite: Classics 304G.

Extended, intensive reading in a major author such as Aeschylus, Thucydides, Herodotus, Aristotle, Aristophanes. Emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units. (Formerly numbered Greek 550.)

550L. *(155.)* **Advanced Reading in Latin (3 or 4)**

Prerequisite: Classics 304L.

Extended, intensive reading in a major author such as Lucretius, Tacitus, Livy, Horace, Petronius, Juvenal. Emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units. (Formerly numbered Latin 550.)



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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.
Teaching major in comparative literature for single subject teaching credential in English.
Minor in comparative literature.

Comparative Literature Major

For the Single Subject Teaching Credential in English

For a description of the single subject teaching credential in English with a major in comparative literature, refer to this section of the catalog under English.

Comparative Literature Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." No more than 48 units in comparative literature and English courses can apply to the degree.

A minor is not required with this major.

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

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

Major. A minimum of 24 upper division units to include 18 units in comparative literature courses. With the approval of the adviser, six units in one of the following interest areas: (1) Foreign Language Literature. Recommended for students who expect to do graduate work in comparative literature. Courses may be taken in literature of any foreign language. (2) English Language Literature. Courses may be taken in American and British literature. (3) Comparative Studies. Courses may be taken in areas with a "studies" orientation such as Afro-American Studies, Mexican-American Studies, Urban Studies, Women's Studies, Jewish Studies, and the like.

Comparative Literature Minor

The minor in comparative literature consists of a minimum of 15 units in comparative literature, 12 units of which must be in upper division courses. The three lower division units must be either in Comparative Literature 210 or in a course preparatory to the student's interest area. The 12 units of upper division work must be selected, with adviser's approval, from within one of the following interest areas:

European: Comparative Literature 505, 510, 511, 512, 513, 514, 525, 526;
Asian and Third World: Comparative Literature 526, 530, 535, 540, 545;
Literary Theory, Criticism and Genres: Comparative Literature 560, 561, 562, 563, 580, 581;
Literature and Society: When appropriate, Comparative Literature 490, 495, 550, 561, 562, 563, 570, 571, 580.

In addition the following variable content courses may be used in any of the above categories when they are appropriate: Comparative Literature 490, 495, 550, 561, 562, 563, 570, 571, 577, 580, 581.

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

LOWER DIVISION COURSES

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

200. *(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, figure, genre, etc. May be repeated with new content. Maximum credit six units.

210. Introduction to Comparative Literature (3) Cr/NC
Introductory study of comparative literature, its current status, its historical development, range of comparative approaches. Generally includes guest presentations by various members of the comparative literature faculty. Recommended for majors in comparative literature.

270A-270B. *(52A-52B.)* **World Literature (3-3) I, II**
Comparative study of selected major works from various continents and cultures, with emphasis on the way literature deals with enduring human problems and values. Semester I: prior to 1500; Semester II: since 1500. 270A is not a prerequisite to 270B, and either may be taken separately.

271A-271B. *(70A-70B.)* **Asian Literature (3-3)**
A survey of the literature of Asia. Semester I: traditional literature; Semester II: modern literature.

272A-272B. *(80A-80B.)* **Third World Literature (3-3)**
Modern literature from Third World cultures. Semester I: Literature from Africa, Asia, and Latin America. Semester II: Literature by ethnic minorities in the U.S.

UPPER DIVISION COURSES

(Intended for Undergraduates)

490. *(190.)* **Literary Movements (3) Cr/NC**
A movement or theme in world literature—such as symbolism, realism, existentialism, alienation, or revolution. May be repeated with new content. Maximum credit six units.

495. Literature and Other Disciplines (3) Cr/NC
Comparative study of relationship between literature and another field, such as philosophy, psychology, political science, or sociology. May be repeated with new content. Maximum credit six units.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

505. *(105.)* **The Bible as Literature (3) I, II**
Same course as English 505.
Prose and poetry of the King James version.

510. *(120.)* **Medieval Literature (3)**
Representative selections from authors of the Middle Ages.

511. *(122.)* **Continental Renaissance (3)**
Representative selections from authors of the Renaissance period in continental Europe.

512. *(124.)* **Seventeenth and Eighteenth Century European Literature (3)**
Selected works by European writers prior to 1800.

513. *(125.)* **Nineteenth Century European Literature (3)**
Selected works by European writers between 1800 and 1900.

514. *(126.)* **Modern European Literature (3)**
Selected works by European writers of the 20th Century.

525. *(185.)* **Yiddish Literature (3) I, II**
Selected works from the Jewish communities of Central Europe.

526. *(186.)* **Modern Jewish Literature (3) I, II**
Selected works by Jewish authors from the last half of the nineteenth century to the present, with emphasis on the United States and Israel.

530. *(170.)* **Asian Literature (3)**
Selections from the literature of Asia: Chinese, Japanese, Indian, etc. Topic to be announced in class schedule. May be repeated with new content. Maximum credit six units.

535. *(175.)* **Near Eastern Literature (3) I, II**
Selections from the literature of the Near East: Persian, Arabic, Turkish, etc. Specific topic to be announced in class schedule. May be repeated with new content. Maximum credit six units.

540. *(180.)* **African Literature (3)**
Comparative study of African literature as well as Black literature of North and South America and the Caribbean; intercontinental influences and the theme of Black identity.

545. *(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 with new content.

560. *(150.)* **The Epic (3)**
Selected epic poems from world literature; emphasizes the Western epic tradition from Homer to the present. Maximum credit six units applicable on a master's degree.

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 with new content. Maximum credit six units applicable on a master's degree.

563. *(153.)* **Poetry (3)**
A comparative approach to themes and forms in poetry. Focus of course to be set by instructor. May be repeated with new content. Maximum credit six units applicable on a master's degree.

570. *(196.)* **Folk Literature (3)**
Studies in the ballad, bardic poetry, oral and popular literature and folklore. May be repeated with new content. Maximum credit six units.

571. *(191.)* **Literary Use of Legend (3)**
Literary treatment of such legendary figures as Don Juan, Faust, and Ulysses, in a wide range of literature and genres.

577. *(192.)* **Major Individual Authors (3)**
In-depth study of the works of a major author, such as Sophocles, Dante, Cervantes, Goethe, Dostoyevsky or Proust. May be repeated with new content. 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.

595. Literature and Other Arts (3)
Prerequisite: Six lower division units in English, comparative literature or the arts.
Comparative study of literature and such arts as painting, sculpture, architecture, music, dance and film. May be repeated with new content. 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 in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Criminal Justice Administration 200, nine units of social science and a three-unit course in statistics. (15 units.)

Major. A minimum of 36 upper division units to include Public Administration 301 and six additional units in public administration; Criminal Justice Administration 301, 497 or 498, and 540; and additional upper division courses selected with approval of the departmental adviser, including a three-unit course in statistics if not taken in the lower division.

Certificate in Criminal Justice Administration

This certificate is designed primarily for persons who hold administrative or managerial positions in the field of criminal justice or for those who seek to prepare for such responsibilities. A certificate in criminal justice administration may be sought by those who: (a) do not meet the prerequisite requirements established for the B.S. degree with a major in criminal justice administration; (b) are not interested in or able to complete nonprofessional offerings which are part of the regular degree program; (c) have already earned a bachelor's or master's degree and are not interested in a second degree.

Candidacy for the certificate program will be established by the Coordinator of the Criminal Justice Administration Program. Awarding of the certificate requires completion of an approved pattern of eight courses (24 units) with a minimum grade point average of 2.5 (C+). Course offerings under this program may be taken in the on-campus program, extension division, external degree program, or any combination of these.

For further information, consult the Coordinator, Criminal Justice Administration.

LOWER DIVISION COURSE

200. Introduction to Criminal Justice Administration (3)
Survey of the structure, functions and problems of controlling criminal activity while preserving individual freedoms in a democratic society.

UPPER DIVISION COURSES

(Intended for Undergraduates)

301. *(146.)* **Social Control, Social Policy and Administration of Justice (3)**
Interrelationship of social control, social policy and administration of criminal justice in contemporary American society.

310. *(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)**
Constitutional law principles as implemented in criminal courts with emphasis on critical analysis of factual situations and the argument of legal issues in criminal cases from both defense and prosecution perspectives.

321. *(111.)* **Juvenile Justice Administration (3)**
Prerequisite: Criminal Justice Administration 301.
Assessment of the structure and functions of agencies and institutions which comprise the juvenile justice system in America; evolution of policies and programs for prevention of delinquency and treatment of the juvenile offender.

330. *(116.)* **Contemporary Correctional Administration (3) II**
Prerequisite: Criminal Justice Administration 301.
Contemporary policies and practices of local, state and federal correctional agencies, the influence of reform movements, and the interrelationship of corrections with other criminal justice system components. (Formerly numbered Criminal Justice Administration 530.)

333. Judicial Administration (3)
Prerequisites: Credit or concurrent registration in Criminal Justice Administration 301 and Public Administration 301.
Review of significant developments at the state and federal levels, including court unification and financing, leadership, congestion, training, selection, tenure, discipline, removal and retirement of court-related personnel; and technological applications.

495. *(113.)* **Selected Topics in Criminal Justice Administration (3)**
Selected current topics in criminal justice administration. Maximum credit six units.

497. Investigation and Report (3) I, II
Prerequisite: Consent of instructor.
Analysis of special topics.

498. Internship in Criminal Justice Administration (2-6) I, II
Prerequisite: Consent of instructor.
Students are assigned to various government agencies and work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences.

499. Special Study (1-3) I, II
Prerequisites: Twelve units of upper division criminal justice administration and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

502. *(117.)* **Juvenile Deviance and the Administration Process (3)**
Prerequisite: Criminal Justice Administration 321.
Problems of implementing and evaluating policies and programs for prevention of juvenile delinquency and treatment of juvenile offenders; an assessment of the proposed standards and goals for juvenile justice administration.

510. Contemporary Issues in Law Enforcement Administration (3)
Prerequisite: Criminal Justice Administration 310.
Assessment of problems confronting administrators of law enforcement agencies and of recent efforts to enhance the capability of agencies to control criminal activity while guarding individual liberties.

520. Prosecutorial Function in Administration of Justice (3)
Prerequisite: Criminal Justice Administration 301.
Analysis of prosecutor's function at local, state and federal levels and in selected foreign nations, including appraisal of proposed national standards and goals for prosecutors.

531. *(188.)* **Probation and Parole (3) I**
Prerequisite: Criminal Justice Administration 301 or 330.
Basic concepts, history, legislation, and practices used in work with juveniles and adults who have been placed on probation or parole; criteria of selection, methods of supervision, and elements of case reporting.

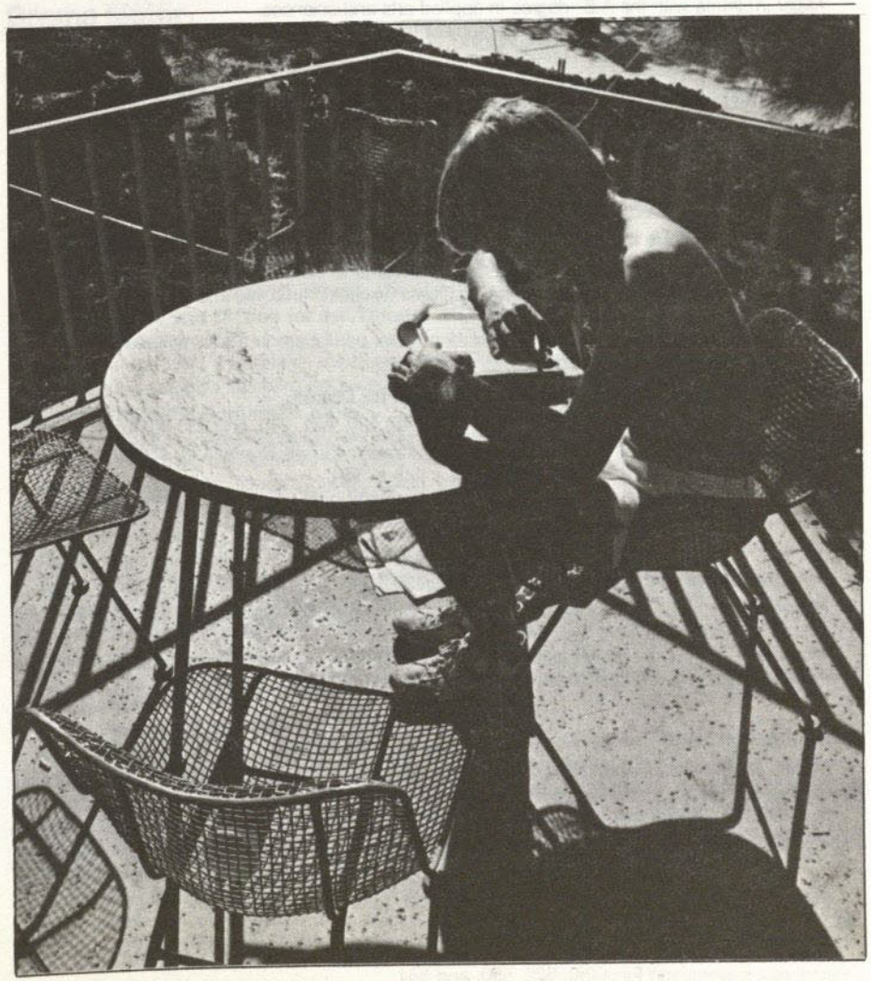
540. Applied Planning, Research and Program Evaluation in Criminal Justice Administration (3)
Prerequisite: Criminal Justice Administration 301.
Application of planning, research and program development and evaluation principles to the field of criminal justice.

543. Community Resources in Criminal Justice Administration (3)
Prerequisite: Criminal Justice Administration 301.
Exploration of present and probable roles of public and private agencies and volunteers in criminal justice administration.

550. Crime Prevention Administration and Social Control (3)
Prerequisite: Criminal Justice Administration 200 and 301.
Examination of policies and probable consequences of both public and private crime prevention efforts from a social control perspective.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Drama

In the College of Professional Studies

The Department of Drama is a Member of the National Association of Schools of Theatre.

Faculty

Emeritus: Povenmire, Sellman
Chair: Howard
Professors: Amble, Harvey, Howard, Owen, Powell, Stephenson
Associate Professors: Annas, Lessley, McKerrow
Assistant Professor: Bellinghiere
Lecturer: Gregory

Offered by the Department

Master of Arts degree in drama.
Master of Fine Arts degree in drama.
Major in drama with the A.B. degree in applied arts and sciences.
Teaching major in drama for the single subject teaching credential in English.
Minor in drama.

Drama Major

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

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

A minor is not required with this major.

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250. (21 units.)

Major. A minimum of 24 upper division units in drama to include Drama 420, 440, 457, 458 or 459, 460A-460B, and seven 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 Experimental Theatre activities.

Emphasis in Design for Drama

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250. (21 units.)

Major. A minimum of 32 upper division units in drama to include Drama 420, 440, 452, 457, 458 or 459, 460A-460B, 552, 540, 545A, and 545B or 448 or 554.

In addition to course requirements the student must participate in a minimum of five Major Theatre performances and three Experimental Theatre activities.

Emphasis in Acting

Preparation for the major. Drama 105, 110, 120, 130, 231, 232, 240, and 250. (24 units.)

Major. A minimum of 32 upper division units in drama to include Drama 420, 432, 440, 457, 458 or 459, 460A, 460B, 533, 534, 551, and 330 or 431 or 526.

In addition to course requirements the student must act in a minimum of five Major Theatre performances and three Experimental Theatre activities.

Emphasis in Directing

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250. (21 units)

Major. A minimum of 36 upper division units in drama to include Drama 420, 431, 432, 440, 457, 459, 460A-460B, 533, 545A, 552, and 515 or 521 or 526.

In addition to course requirements the student must participate in a total of five Major Theatre performances and three Experimental Theatre activities.

Emphasis in Design for Television

Preparation for the major. Drama 105, 240, 250, Telecommunications and Film 110, 120, 122, 123 and 280. (24 units.)

Major. A minimum of 25 upper division units to include Drama 440, 448, 452, 540, Telecommunications and Film 450, 520, 550, and 581.

Drama Major

For the Single Subject Teaching Credential in English

All candidates for a teaching credential must complete all requirements as outlined in the section of this catalog on the 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. Drama 105, 110, 120, 130, 231, 240, 250. (21 units.)

Major. A minimum of 26 upper division units to include Drama 310, 420, 440, 457, 460A-460B, 480, 545A, and three units in English selected from English 527, 541A and 541B.

Credential requirements. A minimum of three lower division units in English selected from English100, 101; three upper division units in linguistics selected from Linguistics 510, 520, 524; and three upper division units in English selected from English 533, 546. (9 units.)

Drama Minor

The minor in drama consists of a minimum of 27 units in drama to include Drama 105, 130, 231, 240, 250, 420, 432, 457, 458 or 459.

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

LOWER DIVISION COURSES

105. *(5.)* **Introduction to the Theatre (3) I, II**
A survey of theory and practice in the contemporary theatre, including its literary, critical, and technical aspects viewed against historical backgrounds.

110. *(10.)* **Voice and Diction for the Theatre (3) I, II**
Prerequisite: Drama 105.
Exercises and drills to improve the quality, flexibility and effectiveness of the speaking voice leading to good usage in standard American speech. Preparatory to further courses in drama.

120. *(20.)* **Dramatic Heritage (3) I**
Three lectures and attendance at selected performances.
Survey of dramatic literature from classical to the modern period, including classical, medieval, Renaissance, Restoration, neoclassical, romantic, realistic and modern plays.

130. *(30.)* **Elementary Acting (3) I, II**
Two lectures and two hours of activity.
Prerequisite: Drama 105.
Development of the individual's ability to express thought and emotion through the effective use of the voice and body. These fundamental skills may be applied to stage, radio, and television acting.

147. *(47.)* **Sound in the Theatre (3) I**
Two lectures and three hours of laboratory.
Techniques, theory, and procedures necessary to develop sound, music, and effects integrated into theatre production.

231. *(31.)* **Intermediate Acting (3) I, II**
Two lectures and two hours of activity.
Prerequisite: Drama 130.
Continuation of Drama 130, emphasizing the application of fundamental skills to the problems of emotion, timing, characterization, and ensemble acting.

232. *(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 building or running crew required.

255. *(55.)* **Children's Theatre (3) I**
Examination of existing philosophies and practices dealing with children's theatre presentations. Theory and technique of selecting and producing plays for children. Introduction to directing for children's theatre. Practical experience through participation in university-sponsored productions.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101.)* **Management of Drama Activities (1) 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.

320. Speaking the Classic Theatre (3) Cr/NC
Two lectures and three hours of laboratory.
Prerequisites: Drama 110, 231.
Techniques of vocal expression in the theatre, primarily in Shakespeare and classical drama. Emphasis on individualized instruction and vocal problem solving.

325. *(125.)* **Dramatic Works: Production Laboratory (3) I, II**
Nine hours of laboratory.
Staging of full-length plays in traditional and experimental productions.

329A-329B. *(129A-129B.)* **Children's Theatre Workshop (3-3) Cr/NC**
Prerequisites: Drama 255 and consent of instructor.
Production of plays for child audiences, with emphasis on elementary and junior high levels. Practical experience through participation in university-sponsored productions.

330. *(130.)* **Accents and Dialects for the Stage (3) II**
Prerequisites: Drama 110 and 130.
Various accents and dialects most frequently occurring in stage productions.

420. *(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. (Formerly numbered Drama 520.)

431. *(131.)* **Workshop in Improvisational Acting (3) I**
Prerequisite: Drama 231.
Theories and principles of improvisational acting. (Formerly numbered and entitled Drama 531, Advanced Acting Theory.)

432. *(132.)* **Advanced Acting (3)**
Prerequisite: Drama 231.
Problems in characterization in contemporary drama. (Formerly numbered Drama 532.)

440. *(140A.)* **Scenic Design (3) I**
Prerequisite: Drama 240.
Techniques and procedures in the application of principles of design, color and perspective in the designing and painting of scenery for various types of productions for stage, television and cinema. (Formerly numbered Drama 440A.)

442. *(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.

448. *(148.)* **Advanced Dramatic Production (3)**
Two lectures and three hours of laboratory.
Prerequisite: Drama 240.
Scenery drafting and construction, with attention to the multiple-set play. Planning of scenery construction and rigging for stage and television productions. (Formerly numbered Drama 548.)

452. *(152A.)* **Costume History and Design for the Theatre (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Drama 250.
Chronological study of clothing and theatrical dress from earliest times to the present, with practical applications in terms of contemporary costume design for the theatre. Egyptian through Cavalier periods. Elements and principles of costume design. (Formerly numbered Drama 552A.)

457. *(157.)* **Stage Direction (3) I, II**
Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.
Prerequisites: Drama 231, 420, and consent of instructor.
Planned for prospective directors of plays in schools, colleges, and community theatres. A comprehensive study of the various problems confronting a stage director. (Formerly numbered Drama 557.)

458. *(158.)* **Stage Direction: Scenes (2) I, II**
One lecture and three hours of laboratory; attendance of one-act plays and selected performances.
Prerequisites: Drama 457 and consent of instructor.
Experience and group evaluation in directing scenes in acting classes. (Formerly numbered Drama 558.)

459. *(159.)* **Stage Direction: One-act Plays (3) I, II**
One lecture and six hours of laboratory; attendance of one-act plays and selected performances.
Prerequisites: Drama 457 and consent of instructor. (May be substituted for Drama 458 as requirement in directing.)
Experience and group evaluation in directing one-act plays before departmental or public audiences. (Formerly numbered Drama 559.)

460A-460B. *(160A-160B.)* **History of the Theatre (3-3) I, II**
The theatre from primitive times to the present. Special attention will be given to the theatre as a mirror of the social and cultural background of the various countries and periods in which it is studied. Drama 460A may be taken without 460B. (Formerly numbered Drama 560A-560B.)

475. *(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.

480. *(180.)* **Methods and Materials of Instruction (2) I**
Professional preparation emphasizing organization and practices in the teaching of Dramatic Arts.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Accepted for Advanced Degrees)

511. *(111.)* Styles in Creative Dramatics (3) I, II
Prerequisite: Drama 310.
Advanced 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.

515. *(115.)* Directing for Children's Theatre (3) II
Prerequisite: Drama 255.
Staging and technical problems relative to the production of plays for children; casting procedures, blocking and characterization principles, rehearsal and scenic techniques. Practical experience through university-sponsored productions. (Formerly numbered Drama 315.)

521. *(121.)* Theatre Criticism (3) I
Prerequisite: Drama 420.
A consideration of the problems and practices of dramatic criticism as applied to theatrical production in the past and present.

523. *(123.)* Playwriting (3) II
Prerequisite: Consent of instructor.
The writing and critiquing of original dramatic works.

526. *(126.)* Theory of Production for the Musical Stage (3) I
Prerequisites: Drama 231 and consent of instructor.
Theory and principles of production of modern musicals.

533. Style in Acting and Directing (3)
Prerequisite: Drama 231.
Acting and directing problems related to the production of plays from the great periods in theatre history. Special attention to characterization, style, dramatic values, creative directing, and production approaches.

534. History of Acting Theory (3)
Prerequisite: Drama 231.
The major acting theories and theoreticians from Diderot, through Delsarte and Stanislavski, to Grotowski, and analysis of major actors who practiced these theories.

540. *(140B.)* Styles in Scenic Design (3) II
Prerequisite: Drama 440.
History of scenic design and the application of contemporary styles to various types of dramatic production for stage, television and cinema. (Formerly numbered Drama 440B.)

545A-545B. *(145A-145B.)* Stage Lighting (3-3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Drama 545A is prerequisite to 545B.
Light, color, lighting instruments, and control equipment, including the design and planning of lighting for plays.

551. *(151.)* Costume, Movement, and Manners (3) I
Prerequisite: Drama 250.
Interrelationship of period costumes on the movement and manners of the time and their application on the stage.

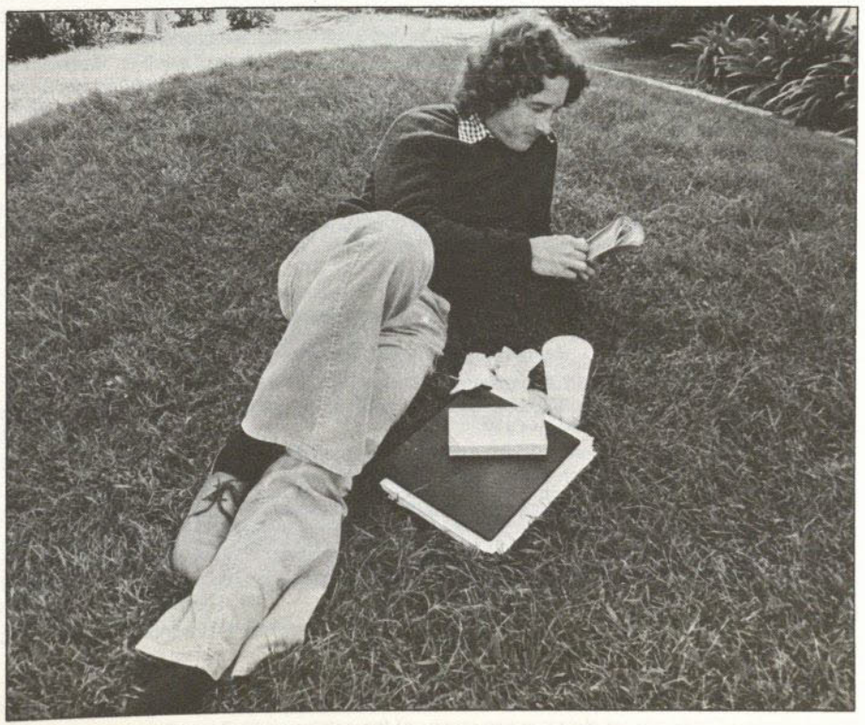
552. *(152B.)* Costume History and Design for the Theatre (3)
Two lectures and three hours of laboratory.
Prerequisites: Drama 250 and 452.
A continuation of Drama 452 to include chronological study of clothing and theatrical dress from the Restoration period to 1930, with practical applications in terms of contemporary costume design for the theatre.

554. *(154.)* Costume Construction Techniques (3) I
Two lecture-demonstrations and three hours of laboratory.
Prerequisite: Drama 250.
Period pattern drafting, draping, cutting, construction. Wig, millinery, armour, mask, accessory construction. Costume paint and dye techniques.

598. *(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.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Economics

In the College of Arts and Letters

Faculty

Emeritus: Chadwick, McClintic, Ryan, Turner
Chair: Popp
Professors: Anderson, Babilot, Barckley, Bridenstine, Clement, Flagg, Gifford, Jencks, Kartman, Leasure, Madhavan, Nam, Neuner, Poroy, Sebold, Venieris
Associate Professors: Hambleton, Hardesty, Popp, Stewart
Assistant Professors: Green, Holt, Parti, Rotella, Vogt
Lecturers: Acosta, Foster

Offered by the Department

Master of Arts degree in economics.
Major in economics with the A.B. degree in liberal arts and sciences.
Minor in economics.

Economics Major

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

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

A minor is not required with this major.

Preparation for the major. Economics 101 and 102 or 303 and 304; 201. (9 units.) All students are advised to take Mathematics 107 and to begin the sequence Mathematics 141, 142.

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

Major. A minimum of 24 upper division units, consisting of at least 18 units in economics and a maximum of six units in those approved courses in related fields (consult the Economics Department), to include Economics 320 or 324, 321 or 325, 347 or 541, plus 12 to 15 units of electives. (Economics 303 and 304 may not be used to fulfill minimal upper division requirements in the major.) Students are encouraged to complete the required courses during their junior year.

Although there are no formal emphases within this major and any upper division course is recommended to any student majoring in the discipline, the department strongly recommends that all majors consult an undergraduate adviser. The following program areas have been devised to aid students in selecting their upper division courses.

Theoretical Economics: Students interested in building a theoretical background in economics are advised to take courses in alternative economic theories, history of thought and quantitative economics. These courses include Economics 311, 313, 330, 332, 335, 338A-338B, 365, 380, 385, 422, 426, 447, 453, 464, 474, 502, 505, 520, 524, 559, 561, and 592.

Economics of Business and Government: Students interested in preparing for operational positions in business or government are advised to take courses from among Economics 370, 380, 401, 422, 426, 452, 453, 454, 458, 474, 475, 476, 477, 482, 484, 490, 502, and 592.

Pre-Law: Students interested in preparing for law school are strongly recommended to take courses from among Economics 370, 380, 401, 490 and 505. Also recommended are Economics 330, 332, 385, 453, 454, 474, 476 and 477.

General Economics: Students seeking a general background in the discipline are encouraged to take at least one course from each of the following: Economic history and systems: Economics 311, 313, 330, 332, 335, 336, 338A-338B; Human resources: Economics 380, 385, 482, 483, 484, 489; International: Economics 336, 360, 365, 464, 465, 468, 469, 483; Public Issues: Economics 370, 401, 422, 426, 452, 453, 454, 458, 474, 476, 477, 484, 489, 490, 502.

Students considering graduate school should consult an adviser.

Economics

For the Single Subject Teaching Credential in Social Science

Economics is an area of concentration for the Social Science Major, a program leading to a secondary education credential in Social Science. The requirements are those established for the Social Science Credential, as shown in this section of the catalog under Social Science.

Economics Minor

The minor in economics consists of a minimum of 15 units in economics, 12 units of which must be in upper division courses. Economics 303 and 304 are not acceptable for upper division credit in the minor. Students must select their 12 upper division units from the economics courses in one of the four areas described in the major. In addition, students may include Economics 320, 321, 324, 325, 347 or 541, in their chosen area. If the student selects General Economics, he/she must concentrate in one of its four areas.

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

LOWER DIVISION COURSES

100. *(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. (Formerly numbered Economics 103.)

101. *(1A.)* **Principles of Economics (3) I, II**
An introduction to principles of economic analysis, economic institutions, and issues of public policy. In this semester the emphasis is upon macroanalysis including national income analysis, money and banking, business cycles, and economic stabilization. Not open to students with credit in Economics 303. (Formerly numbered Economics 120.)

102. *(1B.)* **Principles of Economics (3) I, II**
An introduction to principles of economic analysis, economic institutions, and issues of public policy. In this semester the emphasis is upon the direction of production, the allocation of resources, and the distribution of income, through the price system (microanalysis); and international economics. Not open to students with credit in Economics 304. (Formerly numbered Economics 121.)

201. *(2.)* **Statistical Methods (3) I, II**
Prerequisite: Mathematics 103 at this University or qualification on the Mathematics Placement Examination.
Introduction to descriptive statistics, statistical inference, correlation, index numbers, and time series. Not open to students with credit or concurrent enrollment in another course in statistics. (Formerly numbered Economics 142.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

Note: Wherever Economics 101 (303) is listed as a prerequisite, Economics 320 (324) satisfies the requirement; wherever Economics 102 (304) is listed as a prerequisite, Economics 321 (325) satisfies the requirement.

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

303. *(103A.)* **Economic Principles, Institutions, and Policies (3)**
Prerequisite: Six units in history, political science, or sociology.
Income and employment theory and its applications. Not open to students with credit in Economics 101. May not be used to fulfill minimal upper division requirements in the economics major or minor or liberal studies major.

304. *(103B.)* **Economic Principles, Institutions, and Policies (3)**
Prerequisite: Six units in history, political science, or sociology.
Price theory and its applications. Not open to students with credit in Economics 102. May not be used to fulfill minimal upper division requirements in the economics major or minor or special major.

311. *(101.)* **History of Economic Thought (3)**
Prerequisites: Economics 101 (303) and 102 (304).
The development of economics. Contributions of schools of thought and individual writers are examined with regard to their influence on economic theory and policy.

313. Marxian Economic Theory (3)
Prerequisite: Six units in economics.
Analysis of the theories of Marx, Engels, Lenin, Mao Tse-tung, Baran, Sweezy and others as they pertain to the periods in which they were conceived and to modern times.

320. *(100B.)* **Intermediate Economic Theory (3) I, II**
Prerequisite: Economics 101 (303), or Economics 100 with approval of department.
Economic theory with special reference to national income analysis and the theory of investment. Credit will not be given for both 320 and 324.

321. *(100A.)* **Intermediate Economic Theory (3) I, II**
Prerequisite: Economics 102 (304), or Economics 100 with approval of department.
Economic theory with special reference to the theory of the firm and the industry; value and distribution. Credit will not be given for both 321 and 325.

324. *(104B.)* **Macroeconomic Analysis (3)**
Prerequisites: Economics 101 (303), or Economics 100 with approval of department, and Mathematics 141 or 150.
Mathematical interpretation of macroeconomic theory. Credit will not be given for both 320 and 324.

325. *(104A.)* **Microeconomic Analysis (3)**
Prerequisites: Economics 102 (304), or Economics 100 with approval of department, and Mathematics 141 or 150.
Mathematical interpretation of microeconomic theory. Credit will not be given for both 321 and 325.

330. *(102.)* **Comparative Economic Systems (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism, communism, 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 101 (303) or 102 (304) or 100.
The relationship between the dominant economic and political institutions of capitalist organization and the major social problems of modern capitalism.

335. *(110.)* **Economic History of Europe (3)**
Prerequisite: Economics 101 (303) or 100.
Economic development from the Middle Ages to the present. Particular attention is given to the impact of the Industrial Revolution on national economies, especially on England's commerce and industry.

336. Economic History of Emerging Nations (3)
Prerequisite: Economics 101 (303) or 100.
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)**
Prerequisite: Economics 101 (303) or 100.
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 201.
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 101 (303) and 102 (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 102 or 304.
The nature and causes of economic underdevelopment. Problems of and policies for the economic development of underdeveloped areas of the world.

370. *(170.)* **Government and Business (3)**
Prerequisite: Economics 100 or 102 (304).
Governmental activities affecting business; the state as an entrepreneur and manager; governmental assistance to business; governmental regulation of business in its historical, legal and economic aspects, including recent developments in the United States and abroad; proposed policies.

380. *(150.)* **Labor Problems (3)**
Prerequisite: Economics 100, 101 (303), or 102 (304).
Labor organizations and their policies, wages, strikes, unemployment, social insurance, child labor, labor legislation, plans for industrial peace, and other labor problems.

385. *(185.)* **Poverty in the United States (3)**
Prerequisite: Economics 102 (304) or 100.
Economic aspects of poverty and racial discrimination. Relation of poverty to the general economic structure and to macroeconomic conditions such as unemployment and inflation. Possible solutions.

401. *(131.)* **Public Finance (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Principles and practices of taxation and public expenditures. Economic effects of public spending, debts and taxation. Financing social security and other services. Fiscal policy and prosperity. Relation to inflation and deflation. Special emphasis on social problems involved.

422. *(142.)* **Business Cycles (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Fundamental factors in economic fluctuations. Examination of business cycle theories, and various policy proposals for economic stabilization. A consideration of current economic conditions and an examination of methods employed in preparing national economic forecasts.

426. *(136.)* **Policies for Macroeconomic Stabilization (3)**
Prerequisite: Economics 101 or 303.
Alternative policies for macroeconomic stabilization, including neo-Keynesian, Chicago, radical, and ecological views. Topics include GNP forecasting, dynamic models, monetary vs. fiscal tools, economic surplus, and zero GNP growth.

447. *(107.)* **Quantitative Economics (3)**
Prerequisites: Economics 101 (303), 102 (304), and Mathematics 141 or 150.
The quantitative approach to economic problems. The use of mathematics in economic analysis.

452. Economics of Energy Resources (3)
Prerequisite: Six units of economics.
Economic structure of energy supply in the United States: electric power, fossil fuels, nuclear energy. Economic potential of alternative energy sources. Public policy issues: oil imports and self-sufficiency; energy costs, conservation, and curtailment; energy growth and its environmental impact.

453. *(173.)* **Economics and Ecology (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Relation of ecological problems to basic economic institutions. Examination of the apparent conflict between economic needs and ecological requirements. Economics of air, fresh water, ocean and land pollution, overpopulation and natural resource utilization. Investigation of possible solutions.

454. *(120.)* **Economics of the Ocean (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Economic analysis of fisheries, seabed resources, shipping lanes, allocation of the coastal zone, and ocean pollution. Economic implications of alternative legal arrangements concerning the ocean.

458. *(138.)* **Urban and Regional Economics (3)**
Prerequisite: Economics 101 and 102, or 303 and 304.
Major influences on the economic conditions of urban and nonurban areas; specific urban problems including housing, land use, and growth. Discussion of San Diego problems.

464. *(114.)* **Economic Problems of Latin America (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
Economic development, institutions, and problems of Latin America.

465. *(115.)* **Economic Problems of South and East Asia (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
Economic development, institutions, and problems of China, India and Pakistan, Japan, and Southeast Asia.

468. *(118.)* **The Economies of the Soviet Union and Eastern Europe (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
The development, institutions, and problems of the Soviet and East European economies.

469. *(119.)* **Economic Problems of Africa and the Middle East (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
Economic development, institutions, and problems of Africa and the Middle East.

474. *(174.)* **Economic Concentration and Monopoly Power (3)**
Prerequisites: Economics 101 (303) and 102 (304).
The implications of economic concentration and monopoly. The evaluation of mergers, consolidations and other forms of monopoly power in terms of social and economic goals. Attempts to control monopoly power by antitrust laws, by policies regarding competitive practices and by other means.

475. *(175.)* **Industry Studies (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Evaluation of the structure, conduct and performance of selected industries in terms of social and economic goals.

476. *(171.)* **Transportation Economics (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Economic impact of the availability and cost of transportation service. Organization, rate-making practices, financing and regulation of transportation agencies: air, surface, and water. Current issues of national transportation policy.

477. *(172.)* **Public Utilities (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Economics and regulation of utility enterprises. Growth, pricing, demand and cost behavior, financing, regulatory principles and techniques. Public power and other current policy issues.

482. *(152.)* **Collective Bargaining (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Structures of labor relations; management and union problems; public policy and collective bargaining; simulation of collective bargaining experiences.

483. *(153.)* **Comparative Labor Problems (3)**
Prerequisites: Economics 101 (303) and 102 (304).
Comparative study of labor relations systems and labor movements in both advanced and developing nations. Individual study of a particular country of the student's choice.

484. *(154.)* **Economic Aspects of Human Resources (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
Analysis of health, education, and manpower within the context of government expenditure, economic growth, and the theory of human capital.

489. *(189.)* **Population and Economic Growth (3)**
Prerequisite: Economics 101 (303) or 102 (304) or 100.
Interrelationship between the components of population change (fertility, mortality, and migration) and economic growth in developed and underdeveloped areas.

490. *(135.)* **Money and Banking (3) I, II**
Prerequisites: Economics 101 (303) and 102 (304).
The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.

496. *(167.)* **Experimental Topics (1-3)**
Prerequisite: Consent of instructor.
Selected topics in economics. May be repeated with approval of the instructor. Maximum credit six units.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisite: Consent of instructor.
Individual study. May be repeated for a maximum of six units; maximum credit in 499 limited to six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

502. *(132.)* **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 individual and community preference ordering and decision making. Proposals for improving the allocation of resources.

505. *(105.)* **Welfare Economics (3)**
Prerequisites: Economics 102 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. *(109.)* **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. *(194.)* **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. *(141.)* **Econometrics (3)**
Prerequisites: Economics 201 and 447 or Mathematics 142.
Measurement in economics. The construction and testing of simple economic hypotheses. Use of economic models involving multiple-regression analysis.

555. Economic Analysis of Environmental Quality (3) II
Prerequisite: Economics 321 or 453.
Examination of materials balance, interface between economic and ecological systems, and comprehensive waste residuals management. Economic analysis of population growth and environmental degradation, preservation vs. development issues, global environmental problems and international law.

559. *(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.

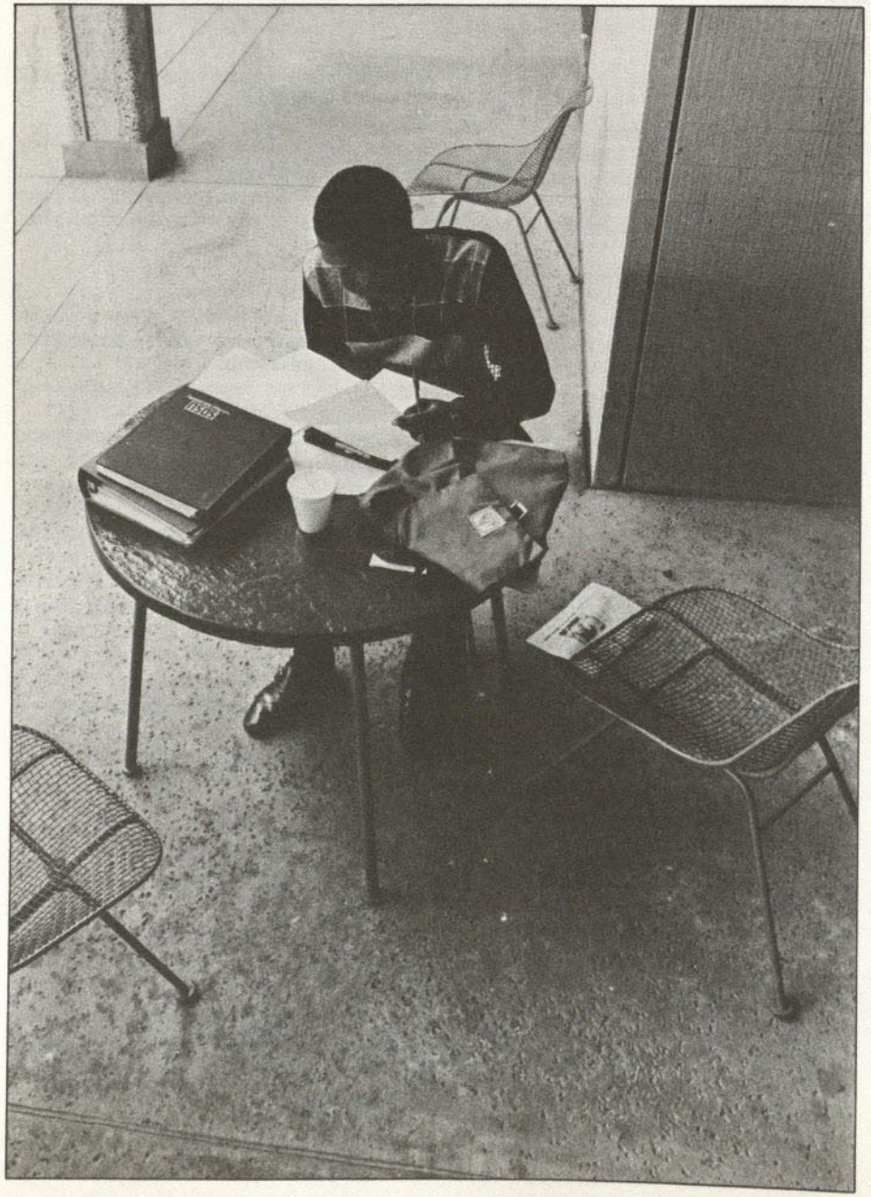
562. International Economic Expansion and Dependence (3)
Prerequisite: Economics 313 or 365 or 464.
Explores various theories of imperialism and dependence, the behavior of multinational corporations, and role of state from Marxian and other perspectives. Theories examined in terms of experience of specific countries (e.g., Latin America).

592. *(192.)* **International Monetary Theory and Policy (3)**
Prerequisite: Economics 320 (324) or 490.
Balance of payments, international capital movements and foreign exchange in relation to current theories and policies.

596. Experimental Topics (3)
Prerequisite: Consent of instructor.
Intensive study in specific areas of economics. Topics to be announced in the class schedule. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.



School of Education

Member of the American Association of Colleges for Teacher Education

Faculty

Dean: Arciniega

Associate Dean: Nardelli

Counselor Education Department
Emeritus: Manjos
Chair: Chamley
Professors: Bruce, Carnevale, Chamley, Cummins, Hawley, Malcolm, Miller
Associate Professors: Aliotti, Howard, Jones, Leppaluoto, McFarlane, Senour, Thompson
Assistant Professors: Cochran, Patton

Educational Administration Department
Emeritus: Lienert
Chair: Latta
Professors: Holt, Latta, Wetherill
Associate Professors: Merino, Warburton

Educational Technology and Librarianship Department
Chair: Harrison
Professor: Harrison
Associate Professor: Rossett
Assistant Professors: McAllister, Sharpe, Weir

Elementary Education Department
Emeritus: Bacon, Brydegaard, Campbell, Corbett, Fisher, Hammack, I., LaPray, LuPone, Madden, Petteys, Rodney, Stough, Walsh
Chair: Kaatz
Professors: Anderson, Baker, Berg, Blanc, Burnside, Charles, Gast, Gates, Gega, Goodson, Groff, Hill, W., Huls, Inskeep, Kendall, Moreno, Murphy, Nagel, Retson, Rixman, Ross, Rowland, Servey, Strom, Treadway, Wilding
Associate Professors: Becker, Botkin, Clark, Elliott, Ford, Kaatz, Mooers, Morris, Reel
Assistant Professors: Birch, Conlon, Hill, P., Klann

Secondary Education Department
Emeritus: Alcorn, Apple, Bradley, Friedrich, Hunter, Kinder, Prouty, Schrupp, Strand, White, Yarborough
Chair: McLevie
Professors: Ackerly, Anthony, Becklund, Bee, Briggs, Crum, Duckworth, Erickson, Fishburn, Fulkerson, Gray, Halfaker, McCabe, McCoy, McLevie, Meek, Morris, Pehrson, Person, Platz, Samuels, Shaw, Smith, H., Smith, R., Stautland, Steckbauer, Yesselman
Associate Professor: Curry
Assistant Professors: Altamura, Behm, Park

Special Education Department
Emeritus: Ballantine, Trimmer
Chair: Doorlag
Professors: Doorlag, Fearn, Forbing, McClard, Mitchell, Singer
Associate Professor: Brady
Assistant Professor: Savage

Multicultural Education
Chair: Pacheco
Professor: Pacheco
Assistant Professors: Ochoa, Rodriguez

Offered by the School of Education

Master of Arts degree in education with concentrations in twelve areas.
Master of Science degree in counseling.
B.V.E. degree.
Teaching credentials in all areas.
Minor in Educational Technology and Librarianship.

Teaching/Service Credentials

The School of Education offers programs which lead to basic teaching and specialist credentials. Students who desire to seek a credential should consult with departmental advisers in order to determine their status and needed requirements. Information on these new credentials is available in the offices of the several departments of the School of Education and in the Admissions Office, School of Education.

The School of Education has obtained approval and is seeking approval for programs leading to the following credentials:

Approved Credential Programs	School Service Authorized
1. Multiple subjects credential	Teach in any self-contained classroom, kindergarten through twelfth grade.
2. Single subject credential	Teach single subject area in grades kindergarten through twelve.
3. Community college instructor credential	Teach in grades thirteen and fourteen, any course in an occupational or subject matter area which appears on the credential document.
4. Standard designated subjects — adult	Teach subjects indicated on credential to adults in classes maintained by elementary or high school districts.
5. Restricted credential	Serve as speech and hearing specialist at all grade levels. (Department of Speech Pathology and Audiology)
6. Health services credential	Authorizing services as a school nurse.

Specialist Credentials

Administrative Services
Bilingual/Cross-Cultural
Clinical Rehabilitative Services (Department of Communicative Disorders)
Early Childhood
Library Services
Pupil Personnel Services
Reading Specialist
School Psychology
Special Education:
- Communication Handicapped (Department of Communicative Disorders)
- Physically Handicapped
- Learning Handicapped
- Severely Handicapped
- Gifted

Educational Technology and Librarianship Minor

The minor in educational technology and librarianship consists of a minimum of 15 units, 12 of which must be upper division selected from one of the following areas:

Librarianship: Educational Technology and Librarianship 541, 546, 547*, 548*, 549, and 550 when applicable.

Educational Technology: Educational Technology and Librarianship 540, 541, 542, 544, and 550 when applicable.

* Prerequisite does not apply to students seeking the minor only.

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

Admission to Teacher Education

Application for Admission

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

Standards for Admission*

Multiple Subjects Credential (Elementary Education)

1. **Formal application** to the education program must be filed sometime after completing 45 units of college work.
2. **Recommendations.** Applicants will be required to provide names and addresses of persons not related to them who could supply character reference information.
3. **Prior experience with children and youth groups.** Applicants will provide evidence of having had experience with children and youth groups. Such evidence will consist of a signed (by supervisor) statement, and evaluating 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 151 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.** Interview(s) with faculty members of the Department of Elementary Education should be scheduled during the weeks following the application period. (See application packet for specific dates.)
7. **Student teaching application.** Application for a student teaching assignment must be filed during the semester prior to beginning student teaching.
8. **Grade point average.** A 2.50 GPA on the last 60 units is required for admission to the program. Once admitted, a 2.50 GPA must be maintained.
9. **Planned program appointment.** After completion of 45 college units, each student should sign up for an appointment with a faculty adviser to work out a planned program which will help determine an appropriate semester to begin student teaching.
10. **Prerequisite courses.** The following courses are required for admission to the program. Admission priority will be given to students who have completed all of the prerequisites.
    Health Science and Safety 101, "Principles of Healthful Living," or
    320, "Health Education for Elementary Teachers" ..... 3 units
    Mathematics 210A, "Structure and Concepts of Elementary Mathematics" ..... 3 units
    Music 102, "Basic Musicianship for Non-Music Majors" ..... 3 units
    Physical Education 141, "Physical Education of Children" ..... 2 units
11. **Major.** The **Liberal Studies Major** may be selected for the teaching credential.

    Academic majors other than Liberal Studies, Option 2, require the passing of the National Teacher Examination, Common Knowledge Section. Students are urged to take the examination prior to admission to the Multiple Subjects Credential program. Information may be obtained through the Test Office or through advisers in Elementary Education.

New Students Who Seek to Complete a Credential

Teachers with a provisional credential or partial fulfillment of requirements credential who are working toward a clear credential may have a program designed to fit their background. Evaluation of college credit completed to date, and arrangements for programming should be made through the School of Education (Room 100).

* Admissions procedures and requirements are currently under review. Please consult the Advising Brochure for additional information.

Advanced Standing in Teacher Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional education work in residence at this university in order to obtain a recommendation for a credential, regardless of the extent of education work completed elsewhere.

Evaluation of Credits

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

Standards for Admission

Single Subject Credential (Secondary Education)

Admission to the Department of Secondary Education is accomplished in three stages:

1. **Admission to Stage I** (Secondary Education 400: The Secondary School).
   This is an introductory course which serves as orientation to secondary education. Typically, priority will be given to graduate and senior students. Formal application must be made early in the semester preceding anticipated enrollment in the course. For Spring Semester 1979, applications will be accepted between October 9 and 27, 1978, up to 4:30 p.m. in Room ED-100G. For Fall Semester 1979, applications will be accepted between February 12 and March 2 up to 4:30 p.m. in Room ED-100G.

   All applicants must:
   a. Complete formal application to Secondary Education 400, the semester previous to enrollment.
   b. Provide transcripts of all college work verifying an acceptable grade point average of 2.75 overall and 3.0 in the major. Unofficial student copies of transcripts are acceptable. Students who do not meet this requirement may petition for admission to the Department Admissions Committee in ED-100 (286-6116). Petition procedures will be available through that office.
   c. Have completed nine upper division units in an acceptable major.

   NOTE: Accelerated Program — applicants with a minimum of one semester of full-time teaching in the U.S. or one year of T.A. experience at the secondary level, and with demonstrated excellent performance in their credential discipline (3.5 minimum grade point average) may apply by appropriate indication on the application for admission to Secondary Education 400 to enroll in a one-unit competency based module (SECED 596, Workshop on Teaching Rights and Responsibilities) concurrently with Stage II. This special module will take the place of SECED 400.
2. **Admission to Stage II** (Secondary Education 401, 402, 405, and preferably 403—except majors in Art, Music and P.E.—and Ed. Tech. 404).
   Courses in Stage II comprise the first block of professional education courses and include an initial student teaching experience. Student must provide own transportation. Formal application for admission to these courses will be made at preregistration meetings held during the middle of the semester before the student plans to start the professional courses. Normally these meetings are held in the SECED 400 classes, but in any case, the following must be on file in ED-100G office at least one month before the end of the semester preceding enrollment in Stage II. Check deadline dates in ED-100G.
   a. Completed formal application to Secondary Education program Stage II.
   b. Recommendations from the Ryan adviser in the major department and the SECED 400 instructor.
   c. Satisfactory completion of San Diego State University health status survey form. This form may be obtained in ED-100G and may be completed through SDSU Health Services.
   d. Evidence of satisfactory completion of the English Proficiency Test. (If a satisfactory score is not achieved, the student must complete a remedial program BEFORE admission to Stage II. Check with the ED-100G Secondary Office to determine the appropriate remediation.)

   Priority for admission and placement in the section of choice for SECED 401, 402, 405 is based upon the date of clearance of ALL of the above requirements.

3. **Admission to Stage III** (Secondary Education 406-407).
   These courses include a full-time daytime student teaching experience. Application must be made at least one month before the end of the semester prior to anticipated enrollment. Normally, this is done while the student is enrolled in SECED 401, 402, 405.

   Admission is based upon:
   a. Satisfactory completion of SECED 401, 402, 405, plus Ed. Tech. 404, and preferably SECED 403 (except for Music, Art and P.E. majors).
   b. Application for enrollment in SECED 406 through submission of completed student teaching forms to the Student Teaching Office in ED-100F. Enrollment in SECED 407, Seminar, must be concurrent with enrollment in SECED 406, Student Teaching.
   c. A student must successfully complete course work to clear U.S. Constitution requirement or successfully pass U.S. Constitution examination.
   d. A student must successfully complete Health Science & Safety 321 (2 units).

NOTE: DELAYED START OF STUDENT TEACHING will require filing of a request for Leave of Absence with the Secondary Office (Room ED-100G, 286-6118.)

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 Student Affairs Office of the School of Education, Room ED-100, 286-6116.

Advanced Standing in Teacher Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional education work in residence at this university in order to obtain a recommendation for a credential, regardless of the extent of education work completed elsewhere.

Evaluation of Credits

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

Multiple Subjects Teaching Credential

Multiple Subjects (Elementary) — Clear Credential

Persons interested in teaching in the elementary school will typically pursue the multiple subjects credential which authorizes the holder to teach in any self-contained classroom, classrooms in which one teacher is responsible for all the subjects commonly taught in the elementary schools. Attainment of this credential requires:

1. A bachelor's degree (or higher) with any major other than education.
2. Completion of a fifth year of study (30 units of upper division or graduate units).
3. Completion of an approved program of professional education including 15 units of course work and 16 units of student teaching (see Department of Elementary Education for further information about the approved programs).
4. Passage of subject matter examination(s) or waiver thereof through Liberal Studies major.
5. Knowledge of methods of teaching reading.
6. U.S. Constitution.
7. Health education.

Multiple Subjects (Elementary) — Preliminary Credential

An applicant may be granted a preliminary teaching credential if the applicant has met all the requirements listed above except for completion of the fifth year of study. Thus, a person whose program allows him to meet these requirements would be eligible for a preliminary credential at the same time he finishes his four-year college program. During the next five years, however, such persons must complete the 30 units (the fifth year of study) in order to become eligible for the "clear" credential.

Multiple Subjects (Elementary) — Bilingual Emphasis

Persons interested in the multiple subjects credential with a bilingual emphasis must meet the same requirements for admission as those for the regular multiple subjects credential. In addition, applicants must pass a test of fluency in oral and written Spanish and English. The Department of Elementary Education will advise students on the procedures for taking the test.

Students are advised to consult the Department of Elementary Education for information relative to bilingual emphasis courses which are available in the Liberal Studies major. In the professional program course requirements are the same, except that such courses are taught with a bilingual emphasis, including teaching strategies and work in the philosophy of education and psychology of learning. A semester of student teaching in a bilingual setting is required.

Description of Interdepartmental Major for Elementary Teaching

Liberal Studies Major

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

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

Option 1. This program is available to all students but is not acceptable for the Multiple Subjects credential. Information regarding this option is presented in the Interdisciplinary Programs section of this catalog.

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

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

A minor is not required with this major.

The Liberal Studies Major Option 2 meets all the requirements for the multiple subjects/diversified major as specified in the Ryan Bill, and is recommended for prospective elementary teachers.

Students must consult the Liberal Studies Guide (available at Aztec Shops) for a current description of the program and courses approved for the major.

Students selecting this major are required to take courses in the four multiple subject groups of knowledge identified as follows (not more than 30 units are acceptable from any one department or group):

Group A: English and Speech
Group B: Mathematics and Science
Group C: Social Sciences
Group D: Humanities and Fine Arts

Preparation for the major (which can with careful planning include general education) and the major together require 90 units of course work in the four areas. Students must select emphases and meet the requirements for specific knowledge and competencies as set down in the Liberal Studies Guide.

Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education. The following course work is required for acceptance into the education program and may be included in the Liberal Studies Major unless otherwise noted:

Mathematics 210A-210B
Health Science and Safety 101 or 320
Music 102
Physical Education 141 (may be taken in lieu of one of the physical education units required for graduation)
Natural Science 210A (strongly recommended)

Other students who wish to take this major must consult the Dean of the University College to secure program approval.

Single Subject Teaching Credential

Single Subject (Secondary) — Preliminary

Persons interested in teaching in the secondary school will pursue the single subject credential which authorizes the holder to teach K-12 in only the following subjects:

Acceptable Single Subject Areas

Single Subject Credential	Major	See Page
Art	Art	138
Business	Accounting	169
	Finance	169
	Information Systems	169
	Management	170
	Marketing	170
English	Comparative Literature	194
	Drama	201
	English	255
	Journalism	324
	Linguistics	332
	Speech Communication	440
Foreign Languages	Classics	191
	French	272
	German	290
	Russian	420
	Spanish	436
History	History	300
Home Economics	Home Economics	265
Industrial Arts	Industrial Arts	310
Life Sciences	Biology	157
	Botany	164
	Microbiology	350
	Zoology	460
Mathematics	Mathematics	336
Music	Music	355
Physical Education	Physical Education	380
Physical Sciences	Chemistry	183
	Physical Science	364
	Physics	388
Social Sciences	Anthropology	128
	Economics	206
	Geography	276
	Health Science	294
	Mexican American Studies	344
	Political Science	394
	Psychology	403
	Religious Studies	416
	Social Science	424
	Sociology	430

Attainment of this credential requires:

1. A bachelor's degree (or higher) with one of the approved single subject majors listed above.
2. Completion of an approved program of professional education. The required courses are Secondary Education 400, 401, 402, 403 (except for majors in Music, Art, and Physical Education. The reading requirement may also be satisfied by completion of the Reading section of the N.T.E. test.), 405, 406, 407, and Educational Technology and Librarianship 404.

3. Passage of subject matter examination(s) (N.T.E. Test) or waiver thereof through completion of approved credential major in one of the areas listed above, with written recommendation from the departmental Ryan adviser.
4. Knowledge of U.S. Constitution, as demonstrated by successful completion of approved course or examination (see the section of this catalog on "Graduation Requirements").
5. Successful completion of Health Science and Safety 321.

Persons whose programs allow them to meet these requirements would be eligible for a preliminary credential at the same time they finish a four-year college program.

NOTE: Undergraduate students in their final semester prior to obtaining a baccalaureate degree may sign up for concurrent postbaccalaureate credit as explained in the section of this catalog on "General Regulations."

Single Subject (Secondary) — Preliminary

Bilingual / Cross Cultural Emphasis

Persons interested in the single subject credential with a bilingual emphasis must meet the same requirements for admission as those in the regular single subject credential program. **In addition,** applicants must pass a fluency test in oral and written Spanish.

Information concerning test procedures is available from the special program adviser. Professional course requirements are the same for this emphasis as in the regular program, plus additional bilingual competencies. A seminar in single subject bilingual teaching strategies is recommended. As part of the regular professional sequence, a minimum of one semester of student teaching in Secondary Education 405 and 406 within a bilingual setting is required.

Single Subject (Secondary) — Clear

An applicant may be granted a CLEAR teaching credential if all of the requirements listed above have been met and the student has completed a fifth year of study (30 units of upper division or graduate level courses after completion of the baccalaureate degree).

NOTE: Undergraduate students in their final semester prior to obtaining a baccalaureate degree may sign up for concurrent postbaccalaureate credit as explained in the section of this catalog on "General Regulations."

Early Childhood Education Specialist Credential

This credential authorizes the holder to serve as an Early Childhood Education Specialist in one or more of the following capacities:

1. Teacher—lead teacher, demonstration teacher.
2. Coordinator of Early Childhood Education programs.
3. Instructor and/or coordinator of paraprofessionals.
4. Supervisor and/or director of Early Childhood Education programs.
5. Program developer.
6. Program evaluator.
7. Researcher.

Attainment of this credential requires the following:

1. A bachelor's degree (or higher).
2. Completion of requirements for the multiple subjects or other valid and appropriate California teaching credential.
3. Completion of an approved 30-unit graduate program for the Specialist Credential. Required courses are Elementary Education 502, 571, 710, 711, 712, 713.
4. Verification of two years of successful teaching experience at the preschool or primary grade levels.

Health Services Credential

San Diego State University offers curricula leading to the Health Services Credential. This authorizes the holder to serve as a School Nurse. For information concerning the credential, the student is referred to the Department of Secondary Education Office 100F.

The Health Services Credential is subject to the approval of the Commission for Teacher Preparation and Licensing.

Standards for Admission

1. Baccalaureate degree.
2. Active registration as an R.N.

Program

The following program elements are required of all health services credential candidates: (30 units.)

			Units
SP ED	500	Exceptional Individuals	3
SECED	667	Guidance Problems in Education	3
SPA	105	Introduction to Audiology	2
SPA	340	Audiometry: Principles	3
SPA	341	Techniques of Audiometry	1-3
HS&S	510	Workshop in Health Science and Safety	3
HS&S	520	Administration of the School Health Program	3
NURS	480	School Nursing	3
ED	720B	Internship (School Nursing) (Prerequisites for 720B include HS&S 510, 520; SECED 667; SP ED 500; SPA 105).	1-6
Electives		Maximum credit nine units; subject to prior approval and dependent upon previous experience.	

Library Services Credential

San Diego State University offers curricula leading to the Library Services Credential. This credential authorizes the holder to serve as a school library/media specialist in grades kindergarten through 12. For information concerning the credential, the student is referred to the Department of Educational Technology and Librarianship.

Standards for Admission

1. Formal application to the Department of Educational Technology and Librarianship.
2. Admission to a basic teaching credential program.
   -or-
   Possession of a basic teaching credential.
3. Interview(s) with a faculty member in the Department of Educational Technology and Librarianship.
4. An undergraduate grade point average of 2.5 or a graduate grade point average of 3.0.

Program

The following program elements are required of all library credential candidates: (28 units.)

		Units
ETL 445	School Library Media Programs	3
ETL 540	Educational Technology	3
ETL 541	Production of Instructional Materials	3
ETL 546	Basic Reference Materials	3
ETL 547	Selection of Instructional Materials	3
ETL 548	Cataloging and Classification	3
ETL 675	Seminar in the Administration of Instructional Media Centers	3
ETL 678	Literature for Children	3
	-or-	
ETL 679	Literature for Adolescents	3
	-and-	
ETL 483	Directed Teaching-Library Practice	4
	-or-	

ETL 775 Directed Internship for the Instructional Media Specialist	4

All library credential candidates must, with the approval of an adviser, select three units of elective program elements from among the following: (3 units)

ETL 542 Advanced Production Techniques	3
ETL 549 Ethnic Materials for Children and Young People	3
ETL 550 Workshop in Educational Technology and Librarianship	1-3
ETL 642 Principles of Multi-Media Message Design	3
ETL 674 Seminar in Educational Technology	3
ETL 677 Reference Materials in Subject Areas	3
ETL 678 Literature for Children	3
ETL 679 Literature for Adolescents	3
Total Units	31

School Psychology Credential

San Diego State University offers a program leading to the School Psychology Credential. The credential authorizes the holder to function as a school psychologist in grades K through 12. For information concerning this credential, the student is referred to the Coordinator of the School Psychology Program in the Department of Counselor Education.

Requirements

1. Admission to the University **and** to the Department of Counselor Education.
2. The School Psychology Credential program is built around developing certain competencies rather than the accumulation of a given number of course hours. However, these competencies can be developed by completing the approved program for the Pupil Personnel Services Credential, or equivalent, and taking the courses in the School Psychology Program which includes Counselor Education 621, 641A-641B, 720, 752, 760, Education 511, and Special Education 500, 501, 510, 420, or equivalent. Students who have had comparable course work outside the Department of Counselor Education and who desire to apply for the School Psychology Credential through the department are required to provide evidence, in each case to the satisfaction of the relevant faculty member, that the designated competencies have been met.
3. Included as part of the above competencies is a field work requirement which involves cross-cultural field experiences with pupils of divergent age levels. The specific nature of the field experiences will vary according to the background of each student.

Special Education Specialist Credential

San Diego State University offers curricula for the Special Education Specialist Credential in the five areas: Communication Handicapped, Learning Handicapped, Severely Handicapped, Physically Handicapped, and Gifted. For information concerning the Communication Handicapped, the student is referred to the Department of Speech Pathology and Audiology. For information concerning the other specialties, the student is referred to the Department of Special Education.

The five areas authorize the holder to teach the types of exceptional children listed:

1. Communication Handicapped.
2. Learning Handicapped.
3. Severely Handicapped.
4. Physically Handicapped.
5. Gifted.

Standards for Admission

Special Education Specialist

1. Formal application to the Department of Special Education.
2. Admission to the program for the single subjects credential (secondary) or multiple subjects credential (elementary).

-or-

A basic teaching credential.

3. Interview(s) with a faculty member in the Department of Special Education or Speech Pathology and Audiology.

Program

Persons interested in the Special Education Specialist Credential shall:

1. Concurrently or prior to completion of the specialist credential, complete the single subjects credential (preliminary or clear) or the multiple subjects credential (preliminary or clear), or hold a basic teaching credential.
2. Complete one year of study in Special Education, including:
   a. The generic course work: Special Education 500, 501, 502.
   *b. Advanced work in area of specialization:
      (1) Special Education 510, 511, 512, 513 series.
      (2) Special Education 420 series, 421, 422 and 423, or 480 series.
      (3) Electives—6 to 12 units—on advice of adviser.

* Applies only to specialization in Learning Handicapped, Severely Handicapped, Physically Handicapped, and Gifted. Those interested in the Communication Handicapped specialization are referred to the Department of Speech Pathology and Audiology.

The Community College Instructor Credential

Specific Requirements

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

Baccalaureate Degree Candidates

Education 380, 381, 382 and 565 are offered to students who have had two to three years of occupational experience in courses taught in a community college. Students may also enroll if they presently hold a partial California credential in an occupational area Early consultation with the Higher Education Programs Coordinator is recommended.

Master's Degree Candidates

No formal courses in education are required under the current interpretation of the Education Code. The program is elective and selective. It is strongly suggested, however, that graduate students enroll in the professional courses in teacher education in order to enhance employment possibilities as most community colleges require some professional preparation and/or experience. Students desiring further information are urged to consult the Higher Education Programs Coordinator, Room 129, Education Building. Admission to Education 700 is based upon successful completion of Education 666 (not required for psychology majors) and Education 680 and selection by the Community College Admission Committee.

Most departments on the San Diego State University campus have developed programs permitting graduate students to obtain the master's degree and enroll in the education courses concurrently in as little as one year of full-time study. The courses in education are typically offered in the summer session and after three o'clock in regular semesters.

The following courses are suggested to enhance employment in the community college:

Education 630	Instructional Methods and Materials Community College (2)
Education 666	Educational Psychology: Community College (2)
Education 680	The Community College (3)
Education 688	Workshop in Community College Education (2-6)
Education 700	Directed Teaching (4)

NOTE: Directed teaching can be accomplished only in a community college day assignment and not in summer session.

Bachelor of Vocational Education Degree

Instructors of Occupational Education are encouraged to complete the B.V.Ed. and to enroll in the program leading to the Master of Arts in Education with a concentration in curriculum and instruction, specializing in occupational education. For further information, students are advised to consult with the Higher Education Coordinator, School of Education.

The Bachelor of Vocational Education degree is designed primarily for instructors who are teaching in a vocational education program either in the secondary school or in the community college and qualify for an official evaluation (under provisions of the Swan Bill) through the State Board of Vocational Examiners in Sacramento. To qualify for the evaluation, the requirements of the State Education Code, Section 23956, must be met. This regulation stipulates a minimum period of vocational teaching experience amounting to 1,620 clock hours in a full-time position or 1,000 clock hours in an approved trade technical extension class.

The individual desiring to secure the B.V.E. degree should follow the basic pattern set down in the following steps:

1. The individual must have his Associate of Arts degree, or ..... 60 units
   (This should include, if possible, the 40 units of general education required for the bachelor's degree from SDSU.) (70 units maximum)
2. The individual must apply for evaluation of work experience (Swan Bill). Applicants should apply to the Board of Examiners for Vocational Teachers, Bureau of Industrial Education, State Education Bldg., 721 Capitol Avenue, Sacramento, California. These units count toward the major and are classified as upper division units. (See Higher Education Programs Coordinator for assistance and application forms.) ..... 40 units maximum
3. The individual must take the professional occupational teacher education courses required for the **Community College Credential** (Title 5). To receive credit toward the B.V.E. degree, these courses must be taken from an institution that will grant credit for the courses toward a bachelor's degree—Education 380, 381, 382 or 565. ..... 6—12 units
4. The individual must receive credit for the required number of upper division courses to complete the Bachelor of Vocational Education degree graduation requirements. This includes those given in item 2 above. ..... 40 units
5. The individual must see an adviser in the area of his major to arrange his program for completion of course work. A series of elective courses that will support the professional responsibilities of the candidate will be recommended. Furthermore, 24 units must be in residency at SDSU.

..... 124 units total

Education

LOWER DIVISION COURSE

299. *(99.)* **Experimental Topics (1-4)**
Refer to catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES IN EDUCATION

(Intended for Undergraduates)

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

375. *(128A.)* **Principles of Adult Education (2) I, II**
History, philosophy, objectives and administration of adult education.

376. *(128B.)* **Methods and Materials in Adult Education (2) I, II**
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.

380. *(156.)* **Community College Occupational Education (3) I, II, S**
Prerequisite: Two years of occupational experience in a community college subject matter area.
Principles, practices, scope and functions of education.

381. *(157.)* **Community College Occupational Curriculum (3) II, S**
Prerequisite: Education 380.
Materials and methods of instruction, curriculum development and evaluation.

382. *(159.)* **Directed Teaching (2 or 4) Cr/NC**
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.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES IN EDUCATION

(Also Acceptable for Advanced Degrees)

511. Reading Diagnosis (3)
Two lectures and three hours of laboratory.
Prerequisites: Valid teaching credential and consent of instructor.
Diagnosis of reading difficulties and exploration of remedial techniques.

550. Philosophy of Cultural Pluralism in Education (3)
Study of culture from a multidisciplinary and holistic perspective provides a thorough understanding of the interrelationship between education and cultural patterns and the roots of cultural pluralism; emphasis on establishing a theoretical framework for appreciating cultural and linguistic diversity in children.

553. Multicultural Oral Language Assessment Training (3)
Prerequisite: Education 550.
Orientation to study of selected culture's linguistic characteristics; comparison with Standard American English for distinguishing problems of linguistic interference on oral language performance of pupils as a basis for prescribing individualized instruction; emphasis on home/community context of child language.

565. *(158.)* **Occupational Student (3) S**
Prerequisite: Education 380 or 381.
The learning process and individual differences, behavioral characteristics of youth, race and ethnic relations in the schools.

568. *(128D.)* **Human Relations and Counseling in Adult Education (2)**
Prerequisite: Possession of a valid teaching credential.
Principles, procedures and issues appropriate to human relations and counseling in adult education.

593. *(128E.)* **Workshop in Adult Education (1-3) II**
Prerequisite: Possession of a valid teaching credential.
Designed to meet the needs of individuals or groups of adult educators who wish to study special problems in adult education.

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Counselor Education

UPPER DIVISION COURSE

(Intended for Undergraduates)

400. Counseling and the Helping Professions (3) I, II
Serves as an introduction to the field of counseling and introduces the student to those professions considered to be helping professions.

UPPER DIVISION COURSE IN COUNSELOR EDUCATION

(Also Acceptable for Advanced Degrees)

506-S. *(191-S.)* **Guidance Conference (1-3) 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.

Educational Technology and Librarianship

UPPER DIVISION COURSES

(Intended for Undergraduates)

400. Technology and Lifelong Learning (3) I, II
Communication models and uses of technology as they impact on the many teaching-learning situations. Examination of role of educator as human communicator, technologist, and social change agent.

404. *(100E.)* **Instructional Media, Equipment and Production (1) I, II Cr/NC**
Basic audiovisual equipment operation, production of inexpensive instructional materials, and application of learning theory to the utilization of instructional materials. (Formerly numbered Secondary Education 404.)

445. *(145.)* **School Library Media Programs (3) I, II**
Backgrounds of media centers in education. Objectives, standards and activities involved in planning, organizing, administering and integrating the school library media program with the instructional program of the school.

483. *(183.)* **Directed Teaching: Educational Technology and Librarianship (2-4) I, II Cr/NC**
Prerequisites: Admission to teacher education and concurrent completion of a teaching minor in educational technology and librarianship.
Systematic observation and participation in library and audiovisual service under supervision in a school library and/or teaching materials center. A weekly seminar or conference is required.

UPPER DIVISION COURSES IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

(Also Acceptable for Advanced Degrees)

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**
Six hours of activity.
Planning and preparing instructional materials for classroom use. Independent study centers, transparencies, film, charts, lettering aids, learning games.

542. Advanced Production Techniques (3)
Six hours of activity.
Prerequisite: Educational Technology and Librarianship 541.
Application of communication principles, skills, and techniques pertaining to the design and production of light and heat sensitive instructional materials to problems of educational communication and instructional development.

544. *(144.)* **Instructional Materials Design (3) I**
Systematic approach to instructional design. Review of research and theory in materials design and programmed instruction. Development and validation of programmed materials in various formats.

546. *(146.)* **Basic Reference Materials (3) I, II**
General reference books, bibliographies and source materials with emphasis on their use in the school library media center.

547. *(147.)* **Selection of Instructional Materials (3) I, II**
Prerequisite: Educational Technology and Librarianship 445.
Selection criteria and development of written policy statements. Annotations, reviewing media, standard catalogs and bibliographies.

548. *(148.)* **Cataloging and Classification (3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Educational Technology and Librarianship 445.
A practical approach to organizing instructional materials in school library media centers. Descriptive cataloging, classification, and choice of subject headings. Basic knowledge of typing helpful.

549. Ethnic Materials for Children and Young People (3)
Six hours of activity.
Survey and evaluation of instructional material for children and young people of varied ethnic and cultural groups. Opportunity for selective and critical in-depth reading, listening, viewing, analysis and evaluation.

550. *(150.)* **Workshop in Educational Technology and Librarianship (1-3)**
Selected problems in educational technology and librarianship. Maximum credit six units.

553-S. *(143-S.)* **Workshop in Educational Television (6) S**
(Same course as Telecommunications and Film 320-S.)
Open to teachers and students interested in instruction by television.
The procedures and theories of television production as it pertains to closed circuit and instructional use of television. The selection and utilization of program content and the method of presenting material through the television medium will be discussed and demonstrated.

Elementary Education

LOWER DIVISION COURSE

200. Careers in Elementary Education (3) I, II
Two lectures and four hours of activity.
Prerequisite: Satisfactory completion of 12 hours of university course work.
Exploring elementary education as a profession, to include review of preparation requirements, patterns of classroom and school organization, and the role of the elementary educator in various instructional environments. Observation and participation in schools and school related settings.

UPPER DIVISION COURSES IN ELEMENTARY EDUCATION

(Intended for Undergraduates)

301. Basic Student Teaching Seminar (1-2) I, II Cr/NC
Prerequisites: Admission to elementary education and concurrent registration in Elementary Education 401.
Discussion of immediate problems in student teaching with emphasis on children's growth and development.

303. Advanced Student Teaching Seminar (1-2) I, II Cr/NC
Prerequisites: Satisfactory completion of Elementary Education 301, 401; and concurrent registration in Elementary Education 403.
Discussion of immediate problems in student teaching with emphasis on the influence of philosophical, social and cultural factors on learning.

307. Seminar in Student Teaching (3) I, II
Prerequisite: Concurrent registration in Elementary Education 407.
Diagnosing and remediating elementary school children's difficulties in speech, spelling and handwriting, the individualization of instruction, professional self-evaluation, assessing learners' achievement, and counseling with learners and parents.

308. SHARE: Practice in Community Service in Education (1-2) I, II
Three hours of supervised activity for one unit; one discussion and six hours of supervised activity for two units.
Prerequisite: Elementary Education 200.
Working on a tutorial basis with children in the community who have educational needs.

311. Child-Study Skills (2) I, II
Four hours of activity.
Prerequisites: Psychology 101 and provisional or complete admission to elementary education.
Skills in observing and interpreting the behavior of elementary school children as influenced by physical, emotional, social, and intellectual growth.

312. Community-Study Skills (2) I, II
Four hours of activity.
Prerequisite: Provisional or complete admission to elementary education.
Skills in observing and interpreting professional values and the diversity of social, cultural, economic and educational values within elementary school communities.

313. Classroom Management Skills (1) I, II
Two hours of activity.
Prerequisite: Provisional or complete admission to elementary education.
Skills in interpreting the legal aspects of education, identifying various kinds of school and classroom organization, and using instructional media and verbal stimuli to facilitate learning.

314. Field Experience in Classroom Management (1) I, II
Prerequisites: Provisional or complete admission to elementary education and concurrent enrollment in Elementary Education 313.
Field experience in assuming responsibility for managing an elementary classroom.

315. Skills in Applying Instructional Principles (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in using the principles of instruction related to readiness, motivation, efficiency of learning and transfer of learning to organize an effective learning environment for children.

316. Skills in Teaching Critical Thinking (2) I
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in developing instructional strategies to guide children in concept development, inquiry, exploration of creativity, and learning in the affective domain.

317. Skills in Curriculum Organization (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in planning, following and evaluating long-range instruction in the various school subjects.

361. Psychological Foundations of Education (1-3) I, II, S
Two hours of activity per unit.
Prerequisites: Psychology 101 and admission to elementary education.
Implementing the learning process through interactive skills, using instructional principles to facilitate learning and changes in behavior and techniques used in assessing instruction and pupil growth.

362. *(112.)* The Learning Process in the Elementary School (3) I, II
Prerequisite: Elementary Education 372.
Psychological principles for effective classroom teaching; techniques of measurement and evaluation for the diagnosis and improvement of learning.

372. *(111.)* The Learner in the Elementary School (3) I, II
Prerequisites: Psychology 101 and admission to elementary education.
Intellectual, emotional, social, and physical development during childhood and early adolescence, including basic principles of child guidance and counseling. Directed observation required. Not open to students with credit in Family Studies and Consumer Sciences 270 and Psychology 330.

373. *(139.)* Kindergarten-Primary Practicum (3) I, II
The theory of early childhood education and the materials and teaching techniques used in the kindergarten.

374. *(115.)* Guidance in Elementary Education (3) Irregular
A study of the basic principles of guidance and their function in the educational process as applied in the elementary school.

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 Cr/NC
Prerequisite: Concurrent registration in Elementary Education 315 and 421.
Emphasis on day-to-day teaching with daily planning in the various school subjects, particularly reading.

406. Intermediate Student Teaching (3) I, II Cr/NC
Prerequisite: Credit or concurrent registration in Elementary Education 405.
Emphasis on planning and teaching in accord with the needs of children.

407. Transitional Student Teaching (8) I, II Cr/NC
Prerequisites: Elementary Education 406 and concurrent registration in Elementary Education 307.
Emphasis on making the transition from student teacher to the professional prepared to assume complete responsibility for an elementary classroom.

411. Teaching Reading in the Elementary School (1-3) I, II, S
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
The nature of reading as a human behavior, the various approaches and materials used in teaching reading and coping with diversity among children as they learn to read.

412. Teaching Language Arts in the Elementary School (1-2) I, II, S
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Selecting, designing and evaluating appropriate learning experiences in handwriting, spelling, oral and written composition, grammar and usage, and listening to assure children's growth in language skills.

413. Teaching Mathematics in the Elementary School (1-2) I, II, S
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Procedures for instruction, including using and developing materials in elementary mathematics and program development to meet children's needs in understanding the structure of mathematics.

414. Teaching Social Studies in the Elementary School (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary social studies education.

415. Teaching Science in the Elementary School (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary science education.

416. Teaching Art in the Elementary School (1-2) I, II, S
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles, and materials of instruction, including instructional media and participation in elementary art education.

417. Teaching Music in the Elementary School (1-2) I, II, S
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary music education.

418. Teaching Science and Social Studies in the Elementary School (1-3) I, II, S
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing and using instructional programs to facilitate growth in critical thinking and using informational resources to learn and apply concepts and generalizations from the various sciences and social sciences.

421. Skills in Teaching Reading (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Skills in teaching beginning reading, word analysis, comprehension, literary interpretation and independent investigation.

431. Skills in Teaching Remedial Reading (1) I, II
Two hours of activity.
Prerequisites: Admission to elementary education and Elementary Education 421.
Skills in diagnosing and remediating children's reading difficulties.

UPPER DIVISION COURSES IN ELEMENTARY EDUCATION

(Also Acceptable for Advanced Degrees)

502. Field Experience in Early Childhood Education (1-6) I, II, S
Prerequisite: Elementary student teaching or approved full-time teaching experience.
Supervised field experience in pre-school or primary grades. Assignments made on an individual basis to fit the candidate's background, experience and career goals. Maximum credit six units.

512. *(133.)* Children's Literature in Elementary Education (3) I, II
A survey of children's literature; the selection and use of material in the elementary classroom.

514. *(138B.)* 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.

523. Classroom Diagnosis and Remediation of Underachievers in Mathematics (3) I, II
Six hours of activity.
Prerequisite: Teaching credential or teaching experience.
The assessment and remediation of underachievers in mathematics. Techniques in determining difficulties in mathematics and prescribing remedial work; for use by elementary and secondary classroom teachers and mathematics education specialists.

562. *(151.)* Measurement and Evaluation in Elementary Education (3) Irregular
The use of intelligence and achievement tests in the diagnosis and improvement of learning; construction of objective examinations; problems of evaluation in education; the elements of statistical techniques.

571. *(114-S.)* Seminar in Child Development (3) I, S
Prerequisite: One course in child development.
Patterns in human development, especially in children ages eight and younger. Interpreting child development to differentiated staff, paraprofessionals, parents and community members. Planning for continuous progress. Reporting progress to parents.

596. *(135.)* Workshop in Elementary Education (1-6) I, II, S
To meet the needs of individuals or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching will be provided for members in attendance. Interested persons should contact the Coordinator of Elementary Education. May be repeated with new content for more than six units. Maximum credit six units applicable on a master's degree.

Secondary Education

UPPER DIVISION COURSES

(Intended for Undergraduates)

400. *(100A.)* The Secondary School (3) I, II
Prerequisite: Application filed in Room ED-100, Admissions and Advising Office, early in semester preceding anticipated enrollment in Secondary Education 400. Application must be approved.
To screen, advise, and complete admission requirements. Includes field work assignment, demonstration of oral and writing competencies, and initial teacher professional competencies.

401. *(100B.)* Humanistic and Social Aspects of Teaching (4) I, II
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 402 and 405.
Teacher competencies as they relate to values, awareness, self-concept, rights and responsibilities.

402. *(100C.)* Behavioral and Psychological Aspects of Teaching (4) I, II
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 401 and 405.
Teacher competencies as they relate to learning theories, adolescent growth, self-assessment, measurement and evaluation.

403. *(100D.)* Teaching of Reading in the Secondary School (3) I, II
Teacher competencies as they relate to the teaching of reading in content areas, including techniques and materials, reading programs, classroom diagnosis, developmental and corrective reading methods.

405. *(100F.)* Student Teaching (3) I, II Cr/NC
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 401 and 402. Secondary Education 403 is highly recommended to be taken at this time (not required for majors in art, music and physical education). Student must provide own transportation to student teaching site.
On-site, part-time experience to implement teacher competencies developed in Secondary Education 401 and 402.

406. *(100G.)* Student Teaching II (9) I, II Cr/NC
Prerequisites: Secondary Education 400, 401, 402, 403 (except majors in art, music and physical education), 405, and Educational Technology and Librarianship 404. To be taken concurrently with Secondary Education 407. Student must provide own transportation to student teaching site.
On-site, full-day experience to implement teacher competencies as developed from the total professional sequence.

407. *(100H.)* Student Teaching Seminar (3) I, II Cr/NC
Prerequisites: Secondary Education 400, 401, 402, 403, 405. To be taken concurrently with Secondary Education 406.
To plan and organize instruction in relation to all competencies acquired and to be implemented in an on-site, full-time student teaching assignment.

412. *(113.)* Growth and Development of the Adolescent (3) Irregular
Adolescent physiological, psychological, social and emotional development, including principles of mental hygiene and guidance. Field work with adolescent groups in the community is required.

414. *(121.)* Methods and Materials of Instruction:
Major (2) except Secondary Education 414C (3) Irregular
Lecture courses, except that Secondary Education 414K meets for one lecture and three hours of laboratory.
Professional courses in specific teaching fields usually taken concurrently with directed teaching. Each course emphasizes the application of best practices with reference to each subject area named.
Subject fields for Secondary Education 414 are as follows:

Offered in the Fall Semester
A. Methods in English
B. Methods in Home Economics
C. Methods in Foreign Languages
D. Methods in Mathematics

E. Methods in Speech Communication
F. Methods in Social Science

Offered in the Spring Semester
A. Methods in English
B. Methods in Home Economics
C. Methods in Foreign Languages
D. Methods in Mathematics
F. Methods in Social Science

422A-422B. *(180C-180D.)* **Directed Teaching: Secondary (3-3) Irregular Cr/NC**
Systematic observation, participation and teaching under supervision in a junior or senior high school. A weekly seminar or conference is required.

UPPER DIVISION COURSES IN SECONDARY EDUCATION

(Also Acceptable for Advanced Degrees)

563. *(152.)* **Measurement and Evaluation in Secondary Education (3) Irregular**
Problems of evaluation in secondary education; construction of examinations; elements of statistics; selection and interpretation of standardized measures.

564. *(153.)* **Quantitative Methods in Educational Research (3) I, II**
Basic tests of statistical significance with special reference to the interpretation of educational data.

596. *(126.)* **Workshop in Secondary Education (1-3 or 6) I, II**
Designed to meet the needs of individuals or groups of teachers who wish to develop or continue the study of some problem with the consultation of the university staff and the San Diego County Curriculum staff. May be repeated with new content. Maximum credit six units.

Special Education

UPPER DIVISION COURSES

(Intended for Undergraduates)

420. Field Experiences in Special Education (1) I, II Cr/NC
Prerequisite: Concurrent registration in Special Education 510.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

421. Field Experiences in Special Education (1) I, II Cr/NC
Prerequisite: Concurrent registration in Special Education 511.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

422. Field Experiences in Special Education (1) I, II Cr/NC
Prerequisite: Concurrent registration in Special Education 512.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

423. Field Experiences in Special Education (1) I, II Cr/NC
Prerequisite: Concurrent registration in Special Education 513.
Directed field experience with exceptional individuals in public or private agencies.
Each field experience may be taken in each of the four areas:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

471. Practicum in Special Education (2) I, II Cr/NC
One lecture and two hours of field work.
Prerequisites: Admission to Special Education; credit or concurrent registration in Special Education 500.
Supervised observation and participation in classroom related school activities for exceptional children. Course work includes discussion, analysis and reports of observation.

475. *(179.)* **Curriculum and Instruction for Teaching the Deaf (3) II**
Prerequisite: Concurrent registration in Special Education 480E.
General elementary curriculum principles, methods and materials of instruction in teaching elementary subjects, including reading, to deaf children. Twenty-six hours observation in programs for the deaf.

480. Directed Internship: Special Education (1-4) I, II Cr/NC
Application to take course should be made during the preceding semester.
Extensive daily teaching in public schools of exceptional individuals in one of five areas:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted
E. Communication Handicapped

UPPER DIVISION COURSES IN SPECIAL EDUCATION

(Also Acceptable for Advanced Degrees)

500. Exceptional Individuals (3) I, II, S
Two lectures and two hours of activity.
Behavioral commonalities among exceptional pupils, knowledge of principles, procedures, techniques and tests in identifying the learning and behavioral patterns of exceptional pupils, characteristics of exceptional pupils in terms of program and developmental needs. (Formerly numbered Special Education 567.)

501. Instructional Programs for Exceptional Individuals (2) I, II, S
Prerequisite: Credit or concurrent registration in Special Education 500.
Assessment of instructional needs, planning an effective individualized school program and developing procedures for evaluating pupil progress. Identify current programs and trends for planning effective individualized and group programs for exceptional individuals.

502. Interaction and Interpersonal Processes (2) I, II, S
Prerequisite: Credit or concurrent registration in Special Education 500.
Theories and processes of communication technology as they pertain to the functioning, individually and collectively, of parent, professionals, and community agencies in promoting personal, social, and vocational growth of individuals with exceptional needs.

510. Assessment and Evaluation of Exceptional Individuals (3) I, II
Prerequisites: Special Education 501 and 502.
Tests and procedures for assessing, evaluating and monitoring progress of exceptional individuals to meet their physical, intellectual, social, and emotional needs. Problems in the psychoeducational diagnosis and appraisal. Utilization of assessment procedures for the educational and rehabilitation program. (Formerly numbered Special Education 561.)
May be taken in each of the four areas of specialization.
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

511. Curriculum and Instruction for Exceptional Individuals (3) I, II

Prerequisites: Special Education 501 and 502.

Utilization of data for determining general and specific objectives to meet the needs unique to exceptional individuals. Developing and selecting materials and procedures for the achievement of these objectives. Establishing procedures for monitoring and evaluating pupil progress. (Formerly numbered Special Education 563, 568 and 573.)

May be taken in each of the four areas of specialization.

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

512. Personal Adjustment of the Exceptional Individual (3) I, II

Prerequisites: Special Education 501 and 502.

Overlay of intellectual, emotional and physical problems which influence the success or failure patterns of individuals with exceptional needs. Strategies used to facilitate the adjustment of the exceptional individual to his environment including home, school and work. (Formerly numbered Special Education 572.)

May be taken in each of the four areas of specialization:

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

513. Dynamics of Behavior Change and the Exceptional Individual (3) I, II

Prerequisites: Special Education 501 and 502.

Management and treatment of individuals with exceptional needs. Current theories and programs in behavioral change studies analyzed with reference to their applications for the educational environment.

May be taken in each of the four areas of specialization:

A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted

550. Workshop in Special Education (2-4) I, II

Curriculum and methods of teaching in an area of exceptionality; observation of demonstration class; development of materials of instruction. May be repeated once in a second area of exceptionality. Maximum credit six units applicable on any degree.

GRADUATE COURSES

For graduate courses in Education, Counselor Education, Educational Administration, Educational Technology and Librarianship, Elementary Education, Secondary Education, and Special Education, refer to the Graduate Bulletin.

School of Engineering

The undergraduate degrees in aerospace, civil, electrical, and mechanical engineering, are accredited by the Engineers' Council for Professional Development.

Faculty

Dean: Martin

Aerospace Engineering Department

Emeritus: Shutts
Chair: Conly
Professors: Conly, Dharmarajan, McGhie, Narang

Civil Engineering Department

Emeritus: Capp
Chair: Chang
Professors: Chang, Chou, Johnson, Krishnamoorthy, Martin, Noorany, Quiett, Stone, Stratton
Assistant Professor: Banks

Electrical Engineering Department

Emeritus: Walling
Chair: Lin
Professors: Learned, Lin, Lodge, Skaar
Associate Professors: Brown, Harris, Mann, Panos
Assistant Professors: Drake, Marino, Stuart

Mechanical Engineering Department

Emeritus: Bauer, Bilterman, Stone
Chair: Craig
Professors: Bedore, Craig, Fitz, Hussain, Morgan, Murphy, Ohnysty, Rao
Associate Professor: Mansfield

Offered by the School of Engineering

Master of Science degree in aerospace, civil, electrical and mechanical engineering.
Major in aerospace engineering with the B.S. degree.
Major in civil engineering with the B.S. degree.
Major in electrical engineering with the B.S. degree.
Major in mechanical engineering with the B.S. degree.
Major in engineering (a general engineering program) with the B.S. degree.
Minor in engineering.

Undergraduate Program

The objective of the engineering program at San Diego State University is to provide the intellectual and physical environment to encourage students to develop their capacities 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 sociohumanistic 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 initially focuses his attention on a pattern of course work emphasizing engineering fundamentals. The student then is able to utilize this knowledge of fundamentals in developing special knowledge in his area of specific interest.

The School of Engineering subscribes to the intent of the statements approved by the Engineering Liaison Committee of the State of California. Any student transferring from California community colleges will be given junior level standing if he has successfully completed lower division course work in mathematics, chemistry, physics and engineering appropriate to his engineering major, presuming, upon transfer, that he has completed at least 50 percent of the graduation unit requirements in his major.

Graduation Requirements

1. A minimum of 132 semester units.
2. At least 24 units earned in residence, half of which must be completed among the last 20 units counted toward the degree.
3. A scholastic grade point average of 2.0 (grade of C on a five-point scale) or better in (a) all units attempted, (b) all units in the major, and (c) all units attempted at this university.
4. At least 36 upper division units. (However, a typical program usually consists of at least 53 upper division units.)
5. Any student who does not wish to pursue the Bachelor of Science degree in aerospace, civil, electrical, or mechanical engineering must plan a course of study which must be approved by the Dean of the School of Engineering.
6. Satisfactory completion of competency tests in mathematics, speech, and writing, or completion of appropriate courses designated in lieu thereof.
7. All regulations established by the university.
8. American institutions, to include competence in American history, institutions and ideals; U.S. Constitution; and California state and local government.
9. Forty units in general education courses in addition to the major, distributed as prescribed in the section of this catalog on Graduation Requirements.
10. Application for graduation.

Majors

Aerospace Engineering Major

With the B.S. Degree

Each student in Aerospace Engineering includes in his program a basic sequence of courses in fundamental engineering sciences and aerospace engineering. In his junior and senior years, he has the opportunity to select a pattern of courses designed to develop proficiency in an area of specialization. This pattern of courses may be selected from those available in aerospace vehicle design, performance, propulsion, structural analysis and aerodynamics, and is classified as "electives within major." ***The student's choice of elective courses must be approved by his adviser and his department chairman. The student must also file an approved master plan during the first semester of his junior year.***

The requirements for the major in aerospace engineering are described as follows:

Freshman Year

Fall Semester	*Units*		*Spring Semester*	*Units*
Chem. 200, 200L, General	5	*	Chem. 202, Chem. for Engrs.	3
Math. 150, Single Variable Calc.	5		Math. 151, Calc. and Linear Alg.	4
Engr. 120, Engr. Prob. Anal.	2		Engr. 140, Engr. Meas. Anal.	2
General Education	3		ME 190 or ME 191	2
P.E. Activity	1		General Education	3
	16		P.E. Activity	1
				15

Sophomore Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Math. 152, Multivariable Calc.	4	Phys. 196, 196L, Principles	4
EM 201, Mech. of Particles	4	EE 210, Electric Circuits	3
EM 260, Engr. Materials	3	EM 221, Mech. of Rigid Bodies	3
American Institutions	3	General Education	3
General Education	3	American Institutions	3
	17		16

Junior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Engr. 310, Methods of Anal.	3	Engr. 510, Methods of Anal.	3
AE 301, Low Speed Aerodyn.	3	AE 302, High Speed Aerodyn.	3
EM 301, Intro. to Solid Mech.	3	AE 303, Exp. Aerodynamics	2
EM 340, Fluid Mechanics	3	AE 310A, Aero. Struc. Anal. I	3
EM 341, Fluid Mech. Lab.	1	AE 320, Aero. Flight Mech.	3
Phys. 197, 197L, Principles	4	General Education	3
	17		17

Senior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
AE 310B, Aero. Struc. Anal. II	3	AE 440, Aircraft Stability and Control	3
AE 460A, Aero. Engr. Appl.	2	AE 460B, Aero. Engr. Appl	2
AE 530, Aircraft Propulsion	3	# Electives within major	5
# Basic Engr. Elective	3	General Education	3
# Electives within major	3	*** Upper Division Electives	3
General Education	3	# Elective Laboratory	1
	17		17

* Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.
\# Approved as part of the student's master plan.
*** Approved humanities or social sciences elective (may be used for General Education).

Civil Engineering Major

With the B.S. Degree

All students in Civil Engineering pursue a common program of study in basic engineering and civil engineering fundamentals. In addition the student is provided with the opportunity to select a pattern of study to satisfy his areas of interest. This pattern of study is indicated in the sequence below as "professional electives" and may be selected from available courses in 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.***

The requirements for the major in civil engineering are described as follows:

Freshman Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Chem. 200, 200L, General	5	* Chem. 202, Chem. for Engrs.	3
Math. 150, Single Variable Calc.	5	Math. 151, Calc. and Linear Alg.	4
ME 190 or ME 191	2	Engr. 120, Engr. Prob. Anal.	2
General Education	3	Engr. 140, Engr. Meas. Anal.	2
P.E. Activity	1	General Education	3
		P.E. Activity	1
	16		15

Sophomore Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Math. 152, Multivariable Calc.	4	Phys. 196, 196L, Principles	4
EM 201, Mech. of Particles	4	EE 210, Electric Circuits	3
EM 260, Engr. Materials	3	EM 221, Mech. of Rigid Bodies	3
American Institutions	3	American Institutions	3
General Education	3	General Education	3
	17		16

Junior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Phys. 197, 197L, Principles	4	CE 218, Surveying	3
Engr. 310, Methods of Anal	3	CE 321, Struc. Anal. I	4
EM 301, Intro. to Solid Mech.	3	CE 455, Environmental Studies	2
EM 302, Solid Mechanics Lab.	1	§ EE 303, Electronics, Instrum. and Elect. Energy Conv.	3
§ ME 352, Thermodynamics and Heat Transfer	3	EM 340, Fluid Mechanics	3
General Education	3	EM 341, Fluid Mech. Lab.	1
		Geol.Sci. 153, Gen. Geol. for Engrs.	1
	17		17

Senior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
CE 444, Water Res. Engr.	2	CE 421, Reinforced Concrete Design	3
CE 462, Soil Mechanics	3	# Professional Electives	8
CE 481, Transportation Engr.	3	General Education	3
# Professional Electives	6	*** Upper Division Electives	3
General Education	3		
	17		17

* Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.
\# Approved as part of the student's master plan.
§ Or restricted elective.
*** Approved humanities or social sciences elective (may be used for General Education).

Electrical Engineering Major

With the B.S. Degree

All students in Electrical Engineering include in their programs a sequence of courses designed to develop an understanding of the basic principles, laws and methodology of electrical engineering. The student, with the assistance of his adviser, will select electives for the last two years of study with which he will be able to develop proficiency in his area of specialization. This pattern of study is indicated below as "professional electives" and may be selected from available courses in communications, control systems, microwaves, digital systems, power systems, and solid state electronics. ***The student's choice of elective courses must be approved by his adviser and his department chairman. The student must also file an approved master plan during the first semester of his junior year.***

The requirements for the major in electrical engineering are described as follows:

Freshman Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Chem. 200, 200L, General	5	* Chem. 202, Chem. for Engrs.	3
Math. 150, Single Variable Calc.	5	Math. 151, Calc. and Linear Alg.	4
Engr. 120, Engr. Prob. Anal.	2	Engr. 140, Engr. Meas. Anal.	2
General Education	3	ME 190 or ME 191	2
P.E. Activity	1	General Education	3
		P.E. Activity	1
	16		15

Sophomore Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Math. 152, Multivariable Calc.	4	Phys. 196, 196L, Principles	4
EM 201, Mech. of Particles	4	EE 210, Electric Circuits	3
EM 260, Engr. Materials	3	EM 221, Mech. of Rigid Bodies	3
American Institutions	3	General Education	3
General Education	3	American Institutions	3
	17		16

Junior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Engr. 310, Methods of Anal	3	** EE 340, Elect. and Mag. Fields or	3
EE 310, Network Analysis	3	** EE 370, Logic Des. & Sw. Circ	3
EE 330, Fund. Engr. Electronics	3	EE 410, Adv. Network Analysis	3
EE 330L, Engr. Electronics Lab	1	EE 430, Anal. & Des. of Elec. Circ	3
EE 380, Elect. Energy Conv	3	EE 430L, Electronic Cir. Lab.	1
EE 380L, Elect. Energy Conv. Lab.	1	§ Basic Engineering Elective	3
Phys. 197, 197L, Principles	4	General Education	3
	18		16

Senior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
** EE 340, Elect. & Mag. Fields or		¶ Professional Electives	9-10
**EE 370, Logic Des. & Sw. Circ.	3	§ Basic Engineering Elective	3
¶ Professional Electives	6-7	*** Upper Division Electives	3
§ Basic Engineering Elective	3	General Education	3
General Education	3		
	15-16		18-19

* Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.
§ Basic engineering electives include: EM 340, ME 350 or ME 352, EM 301 and E 510.
¶ Nine units selected from the following design courses: EE 420, 450, 470, 520, 521, 530, 534, 540, 554, 555, 570, 571, 573, 575, 580 and 581; one unit of advanced laboratory in the option is required.
** EE 340 and EE 370 are required courses.
*** Approved humanities or social sciences elective (may be used for General Education).

Mechanical Engineering Major

With the B.S. Degree

All students in Mechanical Engineering pursue a common program of basic sciences, engineering, and mechanical engineering fundamentals. In addition the student is provided with the opportunity to select a pattern of study to satisfy his areas of interest. This pattern of study is indicated in the sequence below as "professional electives" and may be selected from available courses in controls, energy conversion, gas dynamics, heat transfer, machine design, materials, thermodynamics, vibrations, and other areas. ***The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan during the first semester of his junior year.***

The requirements for the major in mechanical engineering are described as follows:

Freshman Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Chem. 200, 200L, General	5	* Chem. 202, Chem. for Engrs.	3
Math. 150, Single Variable Calc.	5	Math. 151, Calc. and Linear Alg.	4
Engr. 120, Engr. Prob. Anal.	2	Engr. 140, Engr. Meas. Anal.	2
General Education	3	ME 191	2
P.E. Activity	1	General Education	3
	16	P.E. Activity	1
			15

Sophomore Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Math. 152, Multivariable Calc.	4	Phys. 196, 196L, Principles	4
EM 201, Mech. of Particles	4	EE 210, Electric Circuits	3
EM 260, Engr. Materials	3	EM 221, Mech. of Rigid Bodies	3
American Institutions	3	General Education	3
General Education	3	American Institutions	3
	17		16

Junior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
Phys. 197, 197L Principles	4	EM 340, Fluid Mechanics	3
Engr. 310, Methods of Anal	3	ME 314, Machine Design	3
EM 301, Intro. to Solid Mech	3	ME 340, Materials and Processes	4
ME 310, Engr. Design Intro.	3	ME 450, Engr. Thermodynamics	4
ME 350, Thermodynamics	3	ME 512, Simulation of Engr. Sys	3
ME 350L, Thermal Sci. Lab	1		
	17		17

Senior Year

Fall Semester	*Units*	*Spring Semester*	*Units*
EE 303, Electronics, Instrum. and Elect. Energy Conv.	3	*** Upper Division Electives	3
ME 470, Heat Transfer	3	ME 490B, Engr. Applications	2
ME 490A, Engr. Applications	2	¶ Professional Electives	6
ME 510, Adv. Machine Design	3	General Education	6
¶ Professional Electives	3		
General Education	3		
	17		17

* Chemistry 201, 201L, General, may be taken as equivalent to Chemistry 202.
¶ Approved as part of student's master plan by the department chairman.
*** Approved humanities or social sciences elective (may be used for General Education).

General Engineering

With the B.S. Degree

The major in engineering is a program offering the student flexibility not available in the designated degree programs of aerospace, civil, electrical, and mechanical engineering. The specific program, meeting the intent of the designated degree program requirements, must be planned by the student in concert with a faculty committee. The committee and program must be approved by the Dean of the School of Engineering.

Minor in Engineering

The minor in engineering, intended for students in other academic areas of the university, consists of 15 units in engineering, 12 units of which must be in upper division courses. The courses must be approved by the Dean of the School of Engineering.

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

Engineering

General

LOWER DIVISION COURSES

100. *(5.)* **Introduction to the Engineering Profession (2) I, II Cr/NC**
Prerequisite: Not available for credit to engineering majors with 15 or more units in engineering courses.
An overall view of engineering education and professional practice. An introduction to basic skills useful in acquiring engineering problem-solving capabilities.

150. *(10.)* **Control of the Human Environment (3) I, II**
Man's interaction with the land, water and air environment; environmental pollution; role of engineering in controlling man's environment. (Formerly numbered Engineering 110.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES IN ENGINEERING

(Intended for Undergraduates)

360. Energy: Issues and Ideas (3)
Prerequisites: Completion of Basic Subjects and Foundations of Learning sections of General Education.
A complete picture of today's energy issues. Development of awareness of energy demands. Consideration of socioeconomic issues resulting from the interaction between technology and society. Not open to engineering majors.

452. *(192C.)* **Water Environment (2) I, II**
Man's interaction with the water environment; water quality criteria, water pollution and water reuse. Not open to students in civil engineering. (Formerly numbered Engineering 404.)

496. *(196A.)* **Advanced Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in engineering. Maximum credit six units for any combination of Engineering 496, 499 and 596.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Individual study. Maximum credit six units for any combination of Engineering 496, 499 and 596.

UPPER DIVISION COURSE IN ENGINEERING

(Also Acceptable for Advanced Degrees)

596. *(196B.)* **Advanced Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in engineering. Maximum credit six units for any combination of Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

Industrial and Management Engineering

LOWER DIVISION COURSES IN ENGINEERING

120. *(40.)* **Engineering Problem Analysis (2) I, II**
One lecture and three hours of laboratory.
Prerequisite: Concurrent registration in Mathematics 150.
Analysis of engineering problems and solutions using the digital computer. Fundamentals of programming and programming language commands. (Formerly numbered Engineering 170.)

140. *(30.)* **Engineering Measurement Analysis (2) I, II**
Prerequisite: Mathematics 140.
Methods of data presentation. Analysis and treatment of engineering data. Design of engineering experiments. Correlation and regression analysis. Practical applications are stressed. (Formerly numbered Engineering 160.)

UPPER DIVISION COURSES IN ENGINEERING

(Intended for Undergraduates)

310. *(187A.)* **Methods of Analysis (3) I, II**
Prerequisite: Mathematics 152.
Selected topics from ordinary differential equations, the Laplace transform, Fourier series, and linear algebra, with engineering applications. (Formerly numbered Engineering 301.)

420. *(170.)* **Intermediate Engineering Problem Analysis (3) I, II**
Prerequisite: Engineering 120.
Advanced use of Fortran and other computer programming languages for engineering problem analysis. (Formerly numbered Engineering 400.)

430. *(180.)* **Principles of Engineering Economy (3) I, II**
Application of the mathematics of finance to engineering and managerial decision making. (Formerly numbered Engineering 401.)

UPPER DIVISION COURSES IN ENGINEERING

(Also Acceptable for Advanced Degrees)

510. *(187B.)* **Methods of Analysis (3) I, II**
Prerequisite: Engineering 310.
Selected topics from vector calculus, partial differential equations, and complex analysis, with engineering applications. (Formerly numbered Engineering 501.)

511. *(188.)* **Digital Solutions of Engineering Problems (3) I, II**
Prerequisites: Engineering 120 or Mathematics 107, and Engineering 310.
Digital solution of classes of engineering problems. Application of numerical methods with consideration of limitations imposed by computer and programming language characteristics. (Formerly numbered Engineering 502.)

Aerospace Engineering

UPPER DIVISION COURSES

(Intended for Undergraduates)

301. *(150A.)* **Low Speed Aerodynamics (3) I**
Prerequisites: Credit or concurrent registration in Engineering Mechanics 340 and 341.
Subsonic flow, airfoil and wing theory, experimental characteristics of wing sections, high lift devices. (Formerly numbered Engineering 380.)

302. *(150B.)* **High Speed Aerodynamics (3) II**
Prerequisites: Aerospace Engineering 301 or Mechanical Engineering 560.
Supersonic flow, two- and three-dimensional compressible flow, wings in compressible flow, two- and three-dimensional method of characteristics, transonic flow. (Formerly numbered Engineering 381.)

303. *(154.)* **Experimental Aerodynamics (2) II**
One lecture and three hours of laboratory.
Prerequisites: Credit or concurrent registration in Aerospace Engineering 301.
Operating characteristics of subsonic and supersonic wind tunnels. Aerodynamic characteristics of wings and bodies. Flow visualization techniques. Force, moment and pressure distribution measurement. Use of hot-wire anemometer and schlieren equipment. (Formerly numbered Engineering 382.)

310A-310B. *(151A-151B.)* **Aerospace Structural Analysis (3-3) I, II**
Prerequisites: Engineering Mechanics 301 and credit or concurrent registration in Engineering 510 or Mathematics 340B. Aerospace Engineering 310A is prerequisite to 310B.
Methods of structural analysis including both the static and dynamic aspects of problems encountered in the flight of aerospace vehicles. (Formerly numbered Engineering 386A-386B.)

320. *(153A.)* **Aerospace Flight Mechanics (3) II**
Prerequisites: Engineering Mechanics 220 or 221, and Engineering 310 or Mathematics 340A.
Aerodynamics and dynamics of ballistic missiles; guidance systems; orbits and space trajectories; effects of aerodynamics, mass, rotation and shape of the earth on ballistic and space trajectories. Computer programming and problem solutions will be emphasized. (Formerly numbered Engineering 390.)

440. *(159.)* **Aircraft Stability and Control (3)**
Prerequisites: Aerospace Engineering 303, and credit or concurrent registration in Engineering 510.
Static stability and control, general equations of unsteady motion, stability, derivatives, stability of uncontrolled motion, response of aircraft to actuation of controls. (Formerly numbered Engineering 493.)

460A-460B. *(190G-190H.)* **Aerospace Engineering Applications (2-2) I, II**
Six hours of laboratory.
Prerequisites for 460A: Aerospace Engineering 302, 303 and 310A.
Prerequisites for 460B: Aerospace Engineering 460A.
Student projects in aerospace design. (Formerly numbered Engineering 491A-491B.)

496. *(196A.)* **Advanced Aerospace Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in engineering. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Individual study. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596.

UPPER DIVISION COURSES IN AEROSPACE ENGINEERING

(Also Acceptable for Advanced Degrees)

510. *(155.)* **Matrix Methods in Aerospace Structures (3)**
Prerequisite: Aerospace Engineering 310B.
Static and dynamic analysis of aerospace structures utilizing matrix methods. (Formerly numbered Engineering 587.)

520. *(153B.)* **Intermediate Aerospace Flight Mechanics (3) I**
Prerequisite: Aerospace Engineering 320.
A continuation of Aerospace Engineering 320 to include orbit determination techniques, general and special perturbations, artificial satellites, rocket dynamics and transfer orbits, earth-moon trajectories, and interplanetary trajectories. (Formerly numbered Engineering 590.)

530. *(152.)* **Aircraft Propulsion Systems (3)**
Prerequisite: Aerospace Engineering 301 or Mechanical Engineering 450.
Theory and performance characteristics of aircraft propulsion systems including reciprocating engines, turbojets, ramjets, etc. (Formerly numbered Engineering 584.)

596. *(196B.)* **Advanced Aerospace Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in engineering. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

Civil Engineering

LOWER DIVISION COURSE

218. *(128A.)* **Surveying for Civil Engineers (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Engineering 140.
Principles of plane surveying. Measurement of horizontal distance, difference in elevation, and angles. Traverse surveys and computations. Horizontal and vertical curves. Principles of stadia. Topographic surveys. Earthwork. (Formerly numbered Engineering 318.)

UPPER DIVISION COURSES IN CIVIL ENGINEERING

(Intended for Undergraduates)

321. *(120A.)* **Structural Analysis I (4) I, II**
Prerequisite: Engineering Mechanics 301.
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. (Formerly numbered Engineering 310.)

421. *(121.)* **Reinforced Concrete Design (3) II**
Prerequisite: Civil Engineering 321.
Properties and characteristics of reinforced concrete; design of structural components. Introduction to plastic theory and limit design. (Formerly numbered Engineering 410.)

444. *(123A.)* **Water Resources Engineering I (2) I**
Prerequisite: Credit or concurrent registration in Engineering Mechanics 340.
Open channel and pressure conduit flow, pumps and turbines, hydroelectric power, and water law. (Formerly numbered Engineering 414.)

445. *(123B.)* **Water Resources Engineering II (2) II**
One lecture and three hours of laboratory.
Prerequisite: Civil Engineering 444.
Hydrographs and frequency analysis as applied to flood flow determination; multiple regression in hydrologic applications; design of hydraulic systems. (Formerly numbered Engineering 415.)

455. Civil Engineering Environmental Studies (2) II
Prerequisites: Physics 198, 198L and Chemistry 201, 201L, or 202; and credit or concurrent registration in Engineering Mechanics 340.
The application of civil engineering methodology to the solution of environmental problems.

462. *(122.)* **Soil Mechanics (3) I**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 153, Engineering Mechanics 301, and credit or concurrent registration in Engineering Mechanics 340.
Mechanics of soils; physical and mechanical properties; soil classification, compaction, swelling, consolidation, and shear strength. Laboratory tests and related design problems. (Formerly numbered Engineering 416.)

481. *(126.)* **Transportation Engineering (3) I**
Prerequisite: Upper division standing in engineering or in any other area dealing with urban problems.
Function and design of different modes of transportation for moving people and goods; and corresponding terminal facilities. (Formerly numbered Engineering 420.)

482. *(127.)* **Highway Engineering (3) II**
Two lectures and three hours of laboratory.
Prerequisites: Civil Engineering 218 and credit or concurrent registration in Civil Engineering 444.
Highway planning, economics, and administration; geometric design; traffic engineering; subgrade structure; bituminous and portland-cement concrete pavements. (Formerly numbered Engineering 421.)

492. Construction Project Planning (3) I
Prerequisite: Credit or concurrent registration in Engineering 430.
Analysis of complex engineering and industrial systems using critical path methods; planning and control parameters; network analysis including optimization of deterministic and stochastic models; resource allocation; scheduling; student projects.

496. *(196A.)* **Advanced Civil Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in civil engineering. Maximum credit six units for any combination of Civil Engineering 496, 499 and 596.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Individual study. Maximum credit six units for any combination of Civil Engineering 496, 499 and 596.

UPPER DIVISION COURSES IN CIVIL ENGINEERING

(Also Acceptable for Advanced Degrees)

518. *(128B.)* **Advanced Surveying and Photogrammetry (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Civil Engineering 218 with minimum grade of C.
Theory and application of precise control surveys; specialized survey operations. Principles of metrical photogrammetry as applied to engineering. Map compilation from aerial photographs.

521. *(120B.)* **Structural Analysis II (3) I**
Prerequisite: Civil Engineering 321 with minimum grade of C.
Analysis of statically indeterminate structures by virtual work. Advanced treatment of slope deflection, moment distribution. Arch analysis, secondary stresses in trusses. Advanced treatment of influence lines. (Formerly numbered Engineering 510.)

523. Timber Design (3) I
Prerequisite: Civil Engineering 321.
Structure and characteristics of wood; strength properties; loads and stresses; fasteners; working stress design of structural connections and members.

525. *(190A.)* **Design of Steel Structures (3) II**
One lecture and six hours of laboratory.
Prerequisite: Civil Engineering 321.
Behavior of structural steel components under load. Design of steel beams, girders, columns, rigid frames and industrial building. Design of various types of connections of steel structures. (Formerly numbered and entitled Civil Engineering 425, Civil Engineering Structural Design.)

555. Water and Wastewater Engineering (2) I
Prerequisite: Civil Engineering 455 with minimum grade of C.
Examination of water and wastewater. Physical, chemical and biological methods of treatment. Advanced waste treatment processes. Water reclamation.

562. *(124.)* **Applied Soil Mechanics and Foundation Engineering (3) II**
Prerequisite: Civil Engineering 462.
Soil mechanics theories applied to the design of shallow and deep foundations; lateral pressure of soils, design of retaining walls. (Formerly numbered Civil Engineering 464.)

579. *(129.)* **Highway Materials (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Civil Engineering 462 or 482.
Selection, design, and control of mixes of various materials used in highway construction practice. Emphasis on strength and properties of plain concrete and asphalts. (Formerly numbered Engineering 521.)

596. *(196B.)* **Advanced Civil Engineering Topics (1-3) I, II**

Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.

Modern developments in civil engineering. Maximum credit six units for any combination of Civil Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

Electrical Engineering

LOWER DIVISION COURSE

210. *(60.)* **Electric Circuits (3) I, II**

Prerequisites: Credit or concurrent registration in Physics 196, 196L; and Mathematics 151.

Circuit analysis by reduction methods, source transformations, loop and nodal analyses; alternating current circuits, impedance, power and phasor diagrams. (Formerly numbered Engineering 260.)

UPPER DIVISION COURSES IN ELECTRICAL ENGINEERING

(Intended for Undergraduates)

303. *(103.)* **Electronics, Instrumentation, and Electrical Energy Conversion (3) I, II**

Prerequisite: Electrical Engineering 210.

Theory and application of electron tubes, diodes, and transistors in typical electronic circuits. Instrumentation and electronic measuring devices. Fundamentals of electromechanical energy conversion including motors and transformers. Not open to students in electrical engineering option.

303L. *(103L.)* **Electrical Engineering Laboratory (1) I, II**

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Electrical Engineering 303.

A laboratory course to include selected experiments in electrical circuits, electronics, and electrical machinery.

310. *(111.)* **Network Analysis (3) I, II**

Prerequisites: Electrical Engineering 210 and Mathematics 152.

Loop and nodal analysis using general network equations; network theorems; frequency and time response using poles and seros. Two-port parameters. (Formerly numbered Engineering 351.)

330. *(101.)* **Fundamentals of Engineering Electronics (3) I, II**

Prerequisite: Electrical Engineering 210.

Application of diodes, transistors, electron tubes, and thyristors, in typical electronic circuits. Analysis and design of rectifiers and filters, and elementary amplifiers. Emphasis on their utilization in engineering equipment and systems. (Formerly numbered Engineering 352.)

330L. *(101L.)* **Engineering Electronics Laboratory (1) I, II**

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Electrical Engineering 330.

Experimental study of laboratory instruments, diodes, rectifier circuits, filters, silicon controlled rectifiers, tubes, transistors, and amplifiers. (Formerly numbered Engineering 352L.)

340. *(102.)* **Electric and Magnetic Fields (3) I, II**

Prerequisites: Engineering Mechanics 220 or 221, and Electrical Engineering 210.

Electrostatic and magnetostatic field theory using vector notation; Coulomb's Law, Gauss' Law and potential theory. Solutions to Poisson's and Laplace's equations; capacitance and inductance. Time-varying electric and magnetic fields; Maxwell's equations. (Formerly numbered Engineering 354.)

370. *(176.)* **Logic Design and Switching Circuits (3) I, II**

Prerequisite: Electrical Engineering 330.

Combinational switching networks. Introduction to sequential circuits.

380. *(100.)* **Electrical Energy Conversion (3) I, II**

Prerequisite: Electrical Engineering 210.

Magnetic circuits, transformers and polyphase AC networks. Fundamentals of electromechanical energy conversion; induction motors, synchronous machines and DC machines. (Formerly numbered Engineering 350.)

380L. *(100L.)* **Electrical Energy Conversion Laboratory (1) I, II**

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Electrical Engineering 380.

Experimental study of DC, single and polyphase AC circuits, transformers, and machines. (Formerly numbered Engineering 350L.)

403. *(165.)* **Biomedical Instrumentation (3) I**

Prerequisite: Electrical Engineering 303 or 330.

Instrumentation systems to monitor, control and record physiological functions. (Formerly numbered Engineering 465.)

410. *(112.)* **Advanced Network Analysis (3) I, II**

Prerequisites: Electrical Engineering 310 and Engineering 310 or Mathematics 340A.

Transient analysis of circuits containing resistance, inductance, and capacitance with various input wave forms by means of the Laplace-transform method. (Formerly numbered Engineering 361.)

412. *(172.)* **Interactive Computing (2) I, II**

One lecture and three hours of laboratory.

Prerequisite: Electrical Engineering 430.

Use of electronic calculators and timesharing terminals for circuit analysis computation and plotting. (Formerly numbered Engineering 462.)

413L. *(113L.)* **Analog Computation of Electrical Engineering Problems (1)**

Three hours of laboratory.

Prerequisites: Engineering 310, Electrical Engineering 330, and credit or concurrent registration in Electrical Engineering 410.

Use of the analog computer in the solution of typical electrical engineering problems. (Formerly numbered Engineering 468L.)

420. *(167.)* **Control Systems Components (3) II**

Prerequisites: Electrical Engineering 310, 330 and 380.

Position transducers, phase-sensitive demodulators, static magnetic and rotating amplifiers, and servomotors. Derivation of component transfer functions. (Formerly numbered Engineering 467.)

420L. *(167L.)* **Control Systems Components Laboratory (1) II**

Prerequisite: Credit or concurrent registration in Electrical Engineering 420.

Experimental determination of transfer functions for control system components. (Formerly numbered Engineering 467L.)

430. *(114.)* **Analysis and Design of Electronic Circuits (3) I, II**

Prerequisites: Electrical Engineering 310, 330 and Engineering 310 or Mathematics 340A.

A unified treatment of vacuum-tube and transistor voltage and power amplifiers utilizing graphical methods and equivalent circuits; feedback theory and tuned amplifiers. (Formerly numbered Engineering 362.)

430L. *(114L.)* **Electronic Circuits Laboratory (1) I, II**

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Electrical Engineering 430.

Vacuum-tube and transistor dynamic characteristics; single stage and multistage amplifier circuits including feedback and tuned amplifiers. (Formerly numbered Engineering 362L.)

450. *(137.)* **Communication Networks (3) I**

Prerequisites: Electrical Engineering 310, 340 and Engineering 310 or Mathematics 340A.

Theory and application of transmission lines, including analysis by matrix notation; use of Smith chart and other transmission line charts; impedance-matching with transmission line stubs and lumped constants; theory and design of constant-k, m-derived, and other types of filter networks. (Formerly numbered Engineering 456.)

470. *(174.)* **Pulse and Digital Circuits (3) I, II**

Prerequisite: Electrical Engineering 430.

Diodes, transistors, and integrated circuits in switching systems. Device switching characteristics. Characterization of commercially available complex-function microcircuits.

472L. *(179L.)* **Switching Circuits Laboratory (1) II**

Prerequisites: Electrical Engineering 370 and 470.

Switching diodes, bipolar transistors, FETs, and integrated circuits. Combinational and sequential switching systems.

496. *(196A.)* **Advanced Electrical Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in electrical engineering. Maximum credit six units for any combination of Electrical Engineering 496, 499 and 596.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Individual study. Maximum credit six units for any combination of Electrical Engineering 496, 499 and 596.

UPPER DIVISION COURSES IN ELECTRICAL ENGINEERING

(Also Acceptable for Advanced Degrees)

520. *(168.)* **Feedback Control Systems (3) I**
Prerequisites: Electrical Engineering 420.
Analysis of regulatory systems including servomechanisms by the Laplace transform method. System performance and stability; Nyquist, Bode, and root-locus diagrams; elementary synthesis techniques. Practical components and examples of typical designs. (Formerly numbered Engineering 568.)

521. *(169.)* **Advanced Feedback Control Systems (3) II**
Prerequisite: Electrical Engineering 520.
A continuation of Electrical Engineering 520 to include feedback compensation, advanced compensation techniques, signal flow theory, state-variable techniques, introduction to nonlinear and sampled-data control systems. (Formerly numbered Engineering 569.)

530. *(162.)* **Transistor Circuit Analysis (3) I, II**
Prerequisite: Electrical Engineering 430.
Analysis and design of transistor 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. (Formerly numbered Engineering 562.)

534. *(164.)* **Solid-State Devices (3) I**
Prerequisite: Electrical Engineering 430.
Conduction theory of solids. Characteristics of tunnel, backward, breakdown, multilayer and varactor diodes; silicon controlled rectifiers and switches, unijunction transistors, hot electron devices. Lasers and laser applications. (Formerly numbered Engineering 564.)

540. *(139.)* **Microwave Communications (3) II**
Prerequisites: Electrical Engineering 430 and 450.
Applications of Maxwell's equations to wave propagation; skin effect, circuit impedance elements; vector potential, and other time-varying electrical phenomena; waveguides and resonators, strip line circuits, electromagnetic radiation. (Formerly numbered Engineering 556.)

540L. *(139L.)* **Microwave Measurements Laboratory (1) II**
Three hours of laboratory.
Prerequisites: Credit or concurrent registration in Electrical Engineering 430L and 540.
Experimental study of microwave generation including klystrons, Gunn and IMPATT oscillators. TWT and microwave transistor amplifiers. Microwave modulation and detection. Microwave transmission and antennas. (Formerly numbered Engineering 556L.)

553. *(133.)* **Stochastic Signals (3) II**
Prerequisite: Engineering 310 or Mathematics 340A.
Random signals, correlation functions, power spectral densities, the Gaussian process, narrow band processes. Applications to communication systems.

554. *(134.)* **Communication Principles and Circuits (3) I, II**
Prerequisite: Electrical Engineering 430.
Signal transmission in linear networks; modulators and detectors; wide-band and narrow-band amplifiers; oscillators; AM, FM, and phase modulation; transient response of amplifiers.

554L. *(134L.)* **Communication Circuits Laboratory (1) I**
Three hours of laboratory.
Prerequisite: Electrical Engineering 430L.
Regulated power supply systems; oscillator, modulator, detector, and switching circuits; superheterodyne receivers and television circuitry.

555. *(135.)* **Modulation Theory (3) I**
Prerequisite: Electrical Engineering 410.
Theory and performance characteristics of modulation and demodulation; spectral characteristics and noise performance of carrier systems: amplitude, frequency and phase, pulse coded, and compound modulation.

570. *(175.)* **Advanced Pulse and Digital Circuits (3) II**
Prerequisite: Electrical Engineering 470.
Digital system design using linear elements. Microcircuit amplifiers, sweep circuits, JFETs and MOS devices, A/D and D/A converters.

571. *(177.)* **Advanced Logic Design and Switching Circuits (3) I, II**
Prerequisite: Electrical Engineering 370.
Detailed synthesis of synchronous and asynchronous sequential circuits. Impact of microcircuit technology on practical logic design.

573. *(178.)* **Computer Organization (3) I, II**
Prerequisites: Engineering 120 or Mathematics 107, and Electrical Engineering 370.
Data and information structure, machine and assembly language programming, arithmetic and control units microprogramming, memory devices, input-output devices, channels and operating systems concepts.

575. Microprocessors (3) I, II
Prerequisites: Electrical Engineering 470 and 573.
Microprocessor organization and operation. Comparative analysis of commercially available microprocessors. Circuit design and programming of microprocessor-based computing and controller systems. (Formerly offered under Engineering 196B, Advanced Topics; Engineering 503, Advanced Topics; and Electrical Engineering 596, Advanced Topics.)

580. *(193.)* **Modern Power Systems I (3) I**
Prerequisites: Engineering 310, Electrical Engineering 310 and 380.
Modern power system elements; calculation of load flow, fault currents, and system stability. (Formerly numbered Engineering 550.)

581. *(194.)* **Modern Power Systems II (3) II**
Prerequisite: Electrical Engineering 580.
Transient response of modern power system elements; positive, negative and zero sequence impedance; subharmonic effects. (Formerly numbered Engineering 551.)

596. *(196B.)* **Advanced Electrical Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in electrical engineering. Maximum credit six units for any combination of 496, 499 and 596. (Formerly numbered Engineering 503.)

Engineering Mechanics

LOWER DIVISION COURSES

201. Mechanics of Particles (4) I, II
Prerequisite: Credit or concurrent registration in Mathematics 151.
Statics, Kinematics and Kinetics of Particles; virtual work, central force motion, work and energy, impulse and momentum, systems of particles; vector algebra and calculus, engineering applications.

220. *(50B.)* **Engineering Mechanics (3) I, II**
Prerequisites: Credit in a course in vector statics and credit or concurrent registration in Mathematics 152.
Kinetics of a particle; central force motion; systems of particles; work and energy; impulse and momentum; moments and products of inertia; Euler's equations of motion; vibration and time response; engineering applications. Not open to students with credit in EM 201. (Formerly numbered Engineering 250.)

221. Mechanics of Rigid Bodies (3) I, II
Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Mathematics 152.
Statics and dynamics of rigid bodies; equilibrium, reactions, distributed forces, centroids, center of gravity, beams, trusses, friction, virtual work, kinematics, plane motion, energy, momentum, vibrations, engineering applications.

260. *(25.)* **Engineering Materials (3) I, II**
Prerequisite: Chemistry 200, 200L.
Atomic and molecular structure of materials utilized in engineering. Analysis of the relationships between structure of materials and their mechanical, thermal, electrical, corrosion and radiation properties, together with examples of specific application to engineering problems. (Formerly numbered Engineering 210.)

UPPER DIVISION COURSES IN ENGINEERING MECHANICS

(Intended for Undergraduates)

301. *(116.)* **Introduction to Solid Mechanics (3) I, II**
Prerequisites: Engineering Mechanics 220 or 221, and 260; and credit or concurrent registration in Engineering 310.
Mechanics of solid deformable bodies involving analytical methods for determining strength, stiffness, and stability of load-carrying members. (Formerly numbered Engineering 306.)

302. *(116L.)* **Solid Mechanics Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering Mechanics 301.
Laboratory studies in solid mechanics. Experimental stress analysis. Experimental confirmation of theory. (Formerly numbered Engineering 306L.)

340. *(115.)* **Fluid Mechanics (3) I, II**
Prerequisites: Engineering Mechanics 220 or 221, and credit or concurrent registration in Engineering 310.
Fluid statics. Laminar and turbulent flow of liquids and gases in pipes, nozzles, and channels. Dimensional analysis and modeling. Drag forces on moving or immersed objects. (Formerly numbered Engineering 302.)

341. *(115L.)* **Fluid Mechanics Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Engineering Mechanics 340.
Flow measuring devices. Experimental applications of continuity, Bernoulli and momentum equations. Model studies. Pipe and channel flows. Flow visualization techniques. Operating characteristics of wind tunnel and water table. (Formerly numbered Engineering 302L.)

496. *(196A.)* **Advanced Engineering Mechanics Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in engineering mechanics. Maximum credit six units for any combination of Engineering Mechanics 496, 499 and 596.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Individual study. Maximum credit six units for any combination of Engineering Mechanics 496, 499 and 596.

UPPER DIVISION COURSES IN ENGINEERING MECHANICS

(Also Acceptable for Advanced Degrees)

520. *(156.)* **Intermediate Dynamics (3)**
Prerequisites: Engineering Mechanics 220 or 221, Electrical Engineering 210, and Engineering 310.
Kinematics and kinetics of systems of particles and rigid bodies. Dynamic analysis procedures for studying mechanical, electrical, and electromechanical systems. Variational methods. (Formerly numbered Engineering 588.)

540. *(157.)* **Intermediate Fluid Mechanics (3)**
Prerequisites: Credit or concurrent registration in Engineering Mechanics 340, and Engineering 510 or Mathematics 340B.
Kinematics of fluid motion. Conservation of mass, momentum, and energy. Ideal and viscous flows and applications. Boundary layer approximations. (Formerly numbered Engineering 583.)

541. *(181.)* **Hydrodynamics (3)**
Prerequisites: Engineering Mechanics 220 or 221, and Engineering 310 or Mathematics 340A or 530 or 533.
Kinematics, equations of continuity, energy, and momentum of perfect fluids. Introduction to conformal transformations. Three-dimensional and two-dimensional irrotational motion, with applications to physical problems. Vector notation will be used. (Formerly numbered Engineering 585.)

596. *(196B.)* **Advanced Engineering Mechanics Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in engineering mechanics. Maximum credit six units for any combination of Engineering Mechanics 496, 499 and 596. (Formerly numbered Engineering 503.)

Mechanical Engineering

LOWER DIVISION COURSES

190. *(1.)* **Engineering Drawing (2) I, II**
Six hours of laboratory.
Development of skills and techniques of drawing for engineers. Elementary orthographic and pictorial drawing theory. Introduction to basic theorems of descriptive geometry. Theories of size description. (Formerly numbered Engineering 150.)

191. *(20.)* **Engineering Graphics (2) I, II**
Six hours of laboratory.
Prerequisite: One year of high school drafting.
Graphic communication for engineers. Presentation and interpretation of engineering plans, using both standard projection systems and freehand sketching. Introduction to nomography; graphic presentation and analysis of data. (Formerly numbered Engineering 151.)

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING

(Intended for Undergraduates)

310. Engineering Design: Introduction (3)
Two lectures and three hours of laboratory.
Prerequisite: Junior standing.
Professional approach to engineering problems. Problem definition, information gathering, feasibility studies, analysis, final design, and communication.

312. *(145.)* **Engineering Design: Mechanisms (3) I, II**
Prerequisites: Engineering 120 and Engineering Mechanics 220 or 221.
Design of mechanisms wherein displacement, velocity, acceleration are paramount considerations. (Formerly numbered Engineering 331.)

314. *(146A.)* **Elements of Machine Design (3) I, II**
Prerequisite: Engineering Mechanics 301.
Application of mechanics, physical properties of materials, and strength of materials to the design of machine elements. (Formerly numbered Engineering 332.)

340. *(107.)* **Metallic Materials and Processes (4) I, II**
Three lectures and three hours of laboratory.
Prerequisites: Engineering Mechanics 260 and Physics 197, 197L.
Physical metallurgy and properties of metals. Influence of processing on the properties of metals. Design criteria for selection of materials. (Formerly numbered Engineering 330.)

350. *(108.)* **Thermodynamics (3) I, II**
Prerequisite: Mathematics 152.
Development of the basic laws of thermodynamics from the macroscopic and microscopic viewpoints and their application to engineering systems. (Formerly numbered Engineering 304.)

350L. *(108L.)* **Thermal Science Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or 352.
Laboratory studies of the basic concepts of thermal science. (Formerly numbered Engineering 304L.)

352. *(110.)* **Thermodynamics and Heat Transfer (3) I, II**
Prerequisite: Mathematics 152.
First and second laws of thermodynamics; materials, heat conduction, convection and radiation. Not acceptable for mechanical engineering majors. (Formerly numbered Engineering 305.)

410. *(161.)* **Creativity in Design (3)**
Methods to stimulate creativity in design. Investigation of hidden blocks to creative thought. Emphasis on placing students in a design situation requiring an inventive or creative solution. (Formerly numbered Engineering 441.)

450. *(148.)* **Engineering Thermodynamics (4) I, II**
Three lectures and three hours of laboratory.
Prerequisite: Engineering Mechanics 340.
Further development of the laws of classical thermodynamics. Applications to energy conversion devices. (Formerly numbered Engineering 436.)

470. *(140.)* **Principles of Heat Transfer (3) I, II**
Prerequisites: Engineering 310, and Mechanical Engineering 350 or 352.
Heat transfer by conduction, convection, radiation, and combinations thereof; introduction to aerodynamic heating and heat transfer by phase change. (Formerly numbered Engineering 437.)

480. *(141.)* **Internal Combustion Engines (3) II**
Prerequisite: Mechanical Engineering 450.
Analysis of idealized and real internal combustion engine cycles; combustion problems; performance of reciprocating and rotary types of internal combustion engines. Principles of reaction motors. (Formerly numbered Engineering 438.)

490A-490B. *(190C-190D.)* **Mechanical Engineering Applications (2-2) I, II**
Six hours of laboratory.
Prerequisites for 490A: Engineering Mechanics 301, Mechanical Engineering 340 and 350.
Prerequisites for 490B: Mechanical Engineering 312, 314, 450 and 490A.
Applications of engineering principles to design of machinery and energy conversion systems. Individual student projects. (Formerly numbered Engineering 445A-445B.)

496. *(196A.)* **Advanced Mechanical Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Modern developments in mechanical engineering. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Individual study. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING

(Also Acceptable for Advanced Degrees)

510. *(146B.)* **Advanced Machine Design (3)**
Prerequisite: Mechanical Engineering 314.
Advanced topics in strength of materials including energy methods, stress concentrations, curved beams, and thick-walled cylinders. Applications to design of machine elements. (Formerly numbered Engineering 532.)

512. *(183.)* **Simulation of Engineering Systems (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Engineering 120 and 310.
Analysis and design of engineering systems using modern analog and digital computers. Simulation of dynamic systems. Application to problems in mechanics, heat transfer, thermodynamics, and control systems. (Formerly numbered Engineering 541.)

514. Experimental Stress Analysis (3)
Prerequisite: Mechanical Engineering 314.
Advanced study of resistance of materials, failure theories and experimental stress analysis. Methods will include photoelasticity, brittle lacquers, strain gauges, grid methods, and analogs for determining static and dynamic stress distributions. Laboratory demonstrations. (Formerly numbered Mechanical Engineering 611.)

520. *(147A.)* **Introduction to Mechanical Vibrations (3)**
Prerequisite: Engineering Mechanics 301.
Analysis of mechanical vibration; single- and multi-degree of freedom systems; free and forced vibrations; vibration isolation; vibration absorbers. Theory of vibration measuring instruments. (Formerly numbered Engineering 533.)

521. *(147B.)* **Vibration, Shock and Noise Measurements (3)**
Prerequisite: Mechanical Engineering 512.
Experimental problems utilizing vibration excitation equipment, recording systems, transducers, sound analysis systems and analog computers. (Formerly numbered Engineering 534.)

530. *(189.)* **Automatic Control Systems (3)**
Prerequisites: Engineering 310, Electrical Engineering 303 and Engineering Mechanics 220 or 221.
Not open to students filing an electrical engineering master plan.
Analysis of the input-output characteristics of linear, mechanical, electrical, hydraulic, and pneumatic control systems. (Formerly numbered Engineering 535.)

540. *(109.)* **Nonmetallic Materials (3)**
Two lectures and three hours of laboratory.
Prerequisite: Mechanical Engineering 340.
Fundamentals of plastics, reinforced plastics, and ceramics. Analysis of effect of physical properties upon selection of a material for use in design. (Formerly numbered Engineering 530.)

560. *(143.)* **Gas Dynamics (3)**
Prerequisites: Engineering Mechanics 340 and Mechanical Engineering 350.
Thermodynamics of high velocity compressible fluid flow. Shock regions; adiabatic and diabatic flow. Applications to the propulsive duct and discharge nozzles. (Formerly numbered Engineering 538.)

580. *(142.)* **Elements of Energy Conversion (3)**
Prerequisite: Mechanical Engineering 350.
Principles of physics and chemistry applied to the analysis of a broad spectrum of energy conversion devices from an engineering point of view. (Formerly numbered Engineering 537.)

582. *(144.)* **Thermal Environmental Engineering (3)**
Prerequisite: Mechanical Engineering 470.
Psychrometrics. Mass transfer. Two-phase flow. Heat transfer. Thermoelectric refrigeration. Change of phase. (Formerly numbered Engineering 539.)

584A-584B. *(160A-160B.)* **Principles of Chemical Engineering (3-3)**
(Same course as Chemistry 500A-500B.)
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or Chemistry 310A or 410A.
Industrial stoichiometry; fluid flow and heat transfer as applied to unit operations such as evaporation, distillation, extraction, filtration, gas-phase mass transfer, drying, and others. Problems, reports, and field trips. (Formerly numbered Engineering 540A-540B.)

596. *(196B.)* **Advanced Mechanical Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Modern developments in mechanical engineering. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

GRADUATE COURSES

For graduate courses in Engineering, Aerospace Engineering, Civil Engineering, Electrical Engineering, Engineering Mechanics, and Mechanical Engineering, refer to the Graduate Bulletin.

English

In the College of Arts and Letters

Faculty

Emeritus: Adams, J., Burnett, Chater, Gulick, Haskell, Kennedy, Marchand, Phillips, Shouse, Theobald

Director: Moramarco

Professors: Adams, E., Baker, Benson, Brashers, Bumpus, Davis, Dickinson, Gellens, Henig, Ingham, Keller, Monteverde, Moramarco, Perkins, Sanderlin, Sandstrom, Santangelo, Savvas, Stiehl, Tozer, Vanderbilt, Widmer

Associate Professors: Borkat, Brown, Farber, Hinkle, Kehler, H., Kohler, McLeod, Nelson, Nichols, Patterson, Redding, M., Redding, R., Rogers, Rother, J., Rush, Sheres, Taylor, Thrane, Tunberg, Wall

Assistant Professors: Aninger, Boe, Butler, Forche, Foster, Gervais, Karnath, Kehler, D., McCaffery, O'Reilly, Shojai, Sullivan, Wheeler

Lecturer: Brossard

Offered by Literature

Master of Arts degree in English.

Major in English with the A.B. degree in liberal arts and sciences.

Teaching major in English for the single subject teaching credential.

Minor in English.

Courses in comparative literature. (Refer to this section of the catalog under Comparative Literature.)

English Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." No more than 48 units in English and comparative literature courses can apply to the degree. To satisfy the requirement in foreign language, students may not use courses in conversation.

A minor is not required with this major.

Preparation for the major. English 101, and 15 units selected from English 200, 210, 220, 250, 260A, 260B, 261, 280, 281 or 299; Comparative Literature 270A, 270B, 271A, 271B, 272A, 272B. (18 units.)

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

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. Students who have not taken 260A as part of the preparation for the major must take 560A. Students who have not taken 260B must take 560B. The same course may be used to satisfy requirements under both (b) and (c), except that 560A or 560B may not be used to satisfy requirement (c) without special permission from the Director. No more than six units of courses in comparative literature may be included as part of the major in English.

Areas of Study:

British Literature before 1800: English 530, 531, 534, 536, 537, 538A, 538B, 540A, 541A, 541B, and Comparative Literature 510.

British Literature after 1800: English 540B, 542A, 542B, 543, 544A-544B, 545, and 546.

American Literature: English 521, 522, 523, 524, 525, 526, 527 and 528.

Modern Literature: English 525, 526, 527, 544A-544B, 545, and 546.

Literary Types, Theory, and Criticism: English 507, 508, 570, 571A-571B, 572, and Comparative Literature 512, 513, 514, 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, 549, and American Studies 580 may be used to satisfy the requirements for the major if approved by the departmental adviser.

Selection of Courses

Prospective majors of sophomore standing may, with the consent of the course instructor and subject to general university regulations (see "Credit for Upper Division Courses" in the section of this catalog on General Regulations), substitute six units of upper division electives for six units of lower division work. These courses must be in the same field as those which they replace, and must be approved by the departmental adviser.

Students of junior or senior standing may substitute for any deficiencies in lower division requirements in English (except English 101) an equivalent number of units of upper division courses selected with the approval of the departmental adviser.

English Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the Secondary Waiver Credential in English are as follows:

I. A major in English, comparative literature, or linguistics for the A.B. degree

II. Satisfactory completion of 39-41 units selected from courses in the following categories: (Many of these courses may also be used to satisfy requirements for the major.)

A. Courses in Literature (total 15 units)

1. *Lower division survey:* 6 units
   (American, British, or World)
   a. Particularly appropriate: English 250, 260A, Comparative Literature 270A
   b. Appropriate: English 260B, Comparative Literature 270B
2. *Shakespeare or The Bible as Literature:* 3 units
   a. Particularly appropriate: English 533 (Shakespeare)
   b. Appropriate: Comparative Literature or English 505 (The Bible as Literature)
3. *Modern Literature:* 3 units
   a. Particularly appropriate: English 525*, 526*, 544, Comparative Literature 514
      *Only courses in English 525 and 526 which deal with a Twentieth Century subject are acceptable.
   b. Appropriate: English 527, 546, Comparative Literature 526, 530, 540
   c. The following courses are also applicable when the topic deals with the Twentieth Century: English 496, 521, 522, 523, 524, 528, 549, Comparative Literature 490, 550, 577
4. *A Course in Genre, Myth, or Literature and Other Disciplines:* 3 units
   a. Particularly appropriate: English 570, 571A, 579, Comparative Literature 495, 561, 570
   b. Appropriate: English 572, Comparative Literature 560, 562, 563, 571
   c. The following courses are also applicable when the topic deals with a genre or literature and other disciplines: English 496, 524, 549, Comparative Literature 490, 550

B. Courses in Writing (total 12 units)

a. Particularly appropriate: English 280, 500, 580, 581
b. Appropriate: English 100, 101 (Composition), 200, 281, 582

C. Courses in Linguistics (total 9 units)

a. Particularly appropriate: Linguistics 510 (History of English), 520 (Modern English), 524 (American Dialectology)
b. Appropriate: Linguistics 100 (Language Study), 550 (Theory and Practice of English as a Second Language), 551 (Sociolinguistics), 552 (Psycholinguistics), Comparative Literature 581 (Literary Uses of Languages)

D. Speech (total 3 units)

a. Particularly appropriate: Speech Communication 103 (Oral Communication), 105 (Intro. to Speech Com.), 111A (Fund. of Interp.)
b. Appropriate: Speech Communication 391 (Group Com.)

Course Sequences

All year courses in English may be taken in either semester, and either semester may be taken singly for credit.

Student Initiated Courses

Students may petition for a course which falls within the competency of the English Department but which is not among the regular course offerings for the present or following semester. Petition forms may be obtained from the department secretary.

Undergraduate Seminars

Each semester, if adequate staffing permits, the department may offer several of its courses as special, limited-enrollment seminars. These seminars are designed to give English majors (or anyone who has the consent of the instructor) the opportunity as juniors and seniors to engage in advanced work in small discussion groups.

English Minor

The minor in English consists of a minimum of 15 units, 12 units of which must be in upper division courses. Students are to select one of the groups below and to take all 15 units within that group.

American Literature: three units in English 250; 12 units from among English 521, 522, 523, 524, 525, 526, 527, 528.

British Literature before 1800: English 260A and 533; six units selected from English 530, 531, 534, 537, 538A-538B, 540A, 541A-541B; three units of electives in upper division British Literature including 549 when appropriate.

British Literature after 1800: English 260B and 533; six units selected from English 540B, 542A-542B, 543, 544A-544B, 545, 546; three units of electives in upper division British Literature including 549 when appropriate.

Literary Types, Theory and Criticism: three units in English 210 or 220; three units in English 507, 508, 570, 571A-571B, 572; nine units selected from English 525, 526, 527, 540A-540B, 541A-541B, 542A-542B, 544A-544B, 545, 546, and Comparative Literature 512, 513, 514, 560, 562, 563.

Creative Writing: English 280 or 281; three units from English 570, 571A-571B, 572; six units from English 580, 581, 582; three units from English 579, 589.

Comparative Literature: See catalog heading "Comparative Literature."

The English minor is not available to students majoring in comparative literature. Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

General

100. *(5.)* **Composition and Reading (3) I, II**
Introduction to college-level expository writing. Principles of effective composition; rhetorical techniques for achieving clarity, interest, and effective organization and development of ideas, based on the study of outstanding expository writing in contemporary affairs, the sciences, and the arts. Not open to students with credit in English 101.

101. *(6.)* **Composition and Literature (3) I, II**
Introduction to college-level expository writing, similar to English 100, but based on the study of representative works of imaginative literature. Not open to students with credit in English 100.

200. *(75.)* **Intermediate Composition (3) I, II**
Prerequisite: English 100 or 101 or advanced placement.
Further practice in expository writing, with emphasis on mastery of style and organization, and problems of research.

210. *(54.)* **Literary Theory and Criticism (3) I, II**
Introduction to the various theories of literature and approaches to literary creation and criticism.

220. *(89.)* **Introduction to Literature (3) I, II**
An inquiry into the basic nature of literature: what prompts humankind to the creation of imaginative literature, what purposes does literature serve in the cultural life of humanity, what are its social, philosophical, spiritual, and esthetic values. Some consideration may be given to major critical theories, but the focus will be on practical criticism for the nonspecialist. Specific works studied will be representative of several genres, cultures, and periods of literature.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

American Literature

250. Topics in American Literature (3) I, II
An introductory course, using a broad topic in American literature to interrelate works intensively. Techniques of literary expression and the values of literature will be identified through such connective topics as American Self-Reliance, Man/Woman and Nature, American Innocence and Experience. Maximum credit six units.

British Literature

260A-260B. *(51A-51B.)* **English Literature (3-3) I, II**
English literature from the Anglo-Saxon period to the present, with emphasis on the major works in the literary tradition. Semester I: Ends with the neoclassical period. Semester II: Begins with the Romantic writers.

261. Topics in English Literature (3) I, II
An introductory course, using a broad topic in English literature to interrelate works intensively. Techniques of literary expression and the values of literature will be identified through such connective topics as Comedy and Tragedy from Chaucer to Pinter, Hero and Quest in English Literature, Nature and Supernature. Maximum credit six units.

Comparative Literature

(See this section of catalog under Comparative Literature)

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

(Intended for Undergraduates)

General

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

301. The Psychological Novel (3)
Psychological novel from its inception to present, including major works from a variety of cultures. Readings designed to aid students in discovering insights which great novelists have unearthed in their explorations of the human psyche.

496. *(190.)* **Selected Topics in English (1-4) 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

All 500-level courses—Prerequisite: Six lower division units in English.

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.)
Prose and poetry of the King James version.

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

521. Major and Minor Periods in American Literature (3) I, II
American literary history treated chronologically, such as a survey of early American literature, the literature of the American Renaissance, literature of the period of Realism and Naturalism, American literature of the first half of this century, or smaller, more specific historical units. May be repeated with new content. Maximum credit six units.

522. Individual American Author (3) I, II
In-depth study of a major American writer. May be repeated with new content. Maximum credit six units.

523. Individual Movement in American Literature (3) I, II
Literary facets of a movement important to American literary history; such as a study of Puritanism, Imagism, Transcendentalism, Southern Gothic, Realism, or Parafiction. May be repeated with new content. Maximum credit six units.

524. Individual Issues in American Literature (3) I, II
Study of a particular issue in American writing; such as American women writers, the erotic in American literature, transatlantic literary relations, the American writer in exile, a particular region and its writers. May be repeated with new content. Maximum credit six units.

525. Studies in American Fiction (3) I, II
Courses in the history of American fiction from the beginning, in particular periods of fiction writing, in special groups of writers, and in contemporary American fiction. May be repeated with new content. Maximum credit six units.

526. Studies in American Poetry (3) I, II
Courses in the history of American poetry from the beginning, in particular periods of poetry writing, in special groups of poets, and in contemporary American poetry. May be repeated with new content. Maximum credit six units.

527. Studies in American Drama (3) I, II
Courses in the history of American drama from the beginning, in particular periods of drama writing, and in contemporary American drama. May be repeated with new content. Maximum credit six units.

528. History of American Literature (3) I, II
American literary history from the Colonial period to the present. Recommended for English majors.

British Literature

530. *(103.)* **Chaucer (3) I, II**
Chaucer's works, with emphasis on *The Canterbury Tales* and *Troilus and Criseyde.*

531. *(111.)* **Renaissance Literature (3) I, II**
English poetry and prose from 1485 to 1603.

533. *(101.)* **Shakespeare (3) I, II**
An introduction to the writings of Shakespeare.

534. *(102.)* **Study of Shakespeare (3) II**
Prerequisite: English 533.
Advanced study of Shakespeare's achievement as a poet and playwright.

536. *(112.)* **Seventeenth Century Literature (3) II**
English poetry and prose from 1603 to 1660.

537. *(104.)* **Milton (3) II**
Milton's writings, with emphasis on *Paradise Lost.*

538A-538B. *(113A-113B.)* **Restoration and Eighteenth Century Literature (3-3) I, II**
English literature in the neoclassical era. Semester I: Dryden, Swift, Pope, and their contemporaries. Semester II: Writers of the middle and late eighteenth century.

540A-540B. *(121A-121B.)* **English Fiction (3-3) I, II**
The development of English fiction from its beginnings to the end of the nineteenth century. Semester I: The eighteenth century. Semester II: The nineteenth century.

541A-541B. *(122A-122B.)* **English Drama (3-3) I, II**
English dramatic literature from its beginnings to the nineteenth century. Semester I: The period from the beginning to 1642. Semester II: The period following reopening of the theatres in 1660.

542A-542B. *(114A-114B.)* **Nineteenth Century British Poetry (3-3) I, II**
Semester I: The Romantic movement. Semester II: The Victorian period.

543. *(115.)* **Nineteenth Century British Prose (3) I, II**
Nonfictional prose of the Romantic and Victorian periods.

544A-544B. Modern British Fiction (3-3) I, II
Semester I: English fiction from 1890 to World War II. Semester II: English fiction from 1939 to the present. (Formerly numbered English 544.)

545. *(116.)* **Modern British Poetry (3) I, II**
British poetry since 1900.

546. *(118.)* **Modern British Drama (3) I, II**
British drama since 1890.

549. *(129.)* **Topics in English Literature (3) I, II**
The Works of Spenser, The Metaphysical School of Poetry, The English Satirists, Major Movements in Contemporary English Fiction, and the like. May be repeated with new content. Maximum credit six units.

560A-560B. A History of English Literature (3-3) I, II
Survey of major English writers, with emphasis on reading of complete works. Semester I: From the beginning to the neo-classical period. Semester II: Begins with the Romantic writers. Especially appropriate for those students who have not satisfied the lower division survey requirements, for those who will teach English literature, and for those proceeding on to graduate study.

Comparative Literature

(See this section of catalog under Comparative Literature)

Creative Writing

570. *(140.)* **Techniques of Poetry (3) I, II**
A study of the critical and theoretical literature of poetry, from the creative writer's viewpoint, together with reading and discussion of appropriate examples.

571A-571B. *(142A-142B.)* **Techniques of Fiction (3-3) I, II**
A study of the critical and theoretical literature of fiction, from the creative writer's viewpoint, together with reading and discussion of appropriate examples. Semester I: Short Fiction. Semester II: The Novel.

572. *(144.)* **Techniques of Drama (3) I**
A study of the critical and theoretical literature of drama, from the creative writer's viewpoint, together with reading and discussion of appropriate examples.

579. *(149.)* **Topics in Techniques of Writing (3) I, II**
A study of the critical and theoretical literature of literary technique or topic such as satire, science fiction, myth and fantasy, children's literature, the long poem, the literary anatomy, etc. May be repeated with new content. Maximum credit six units.

580. *(170.)* **The Writing of Poetry (3) I, II**
Prerequisite: English 280.
A writing workshop in poetry. May be repeated with new content. Maximum credit six units.

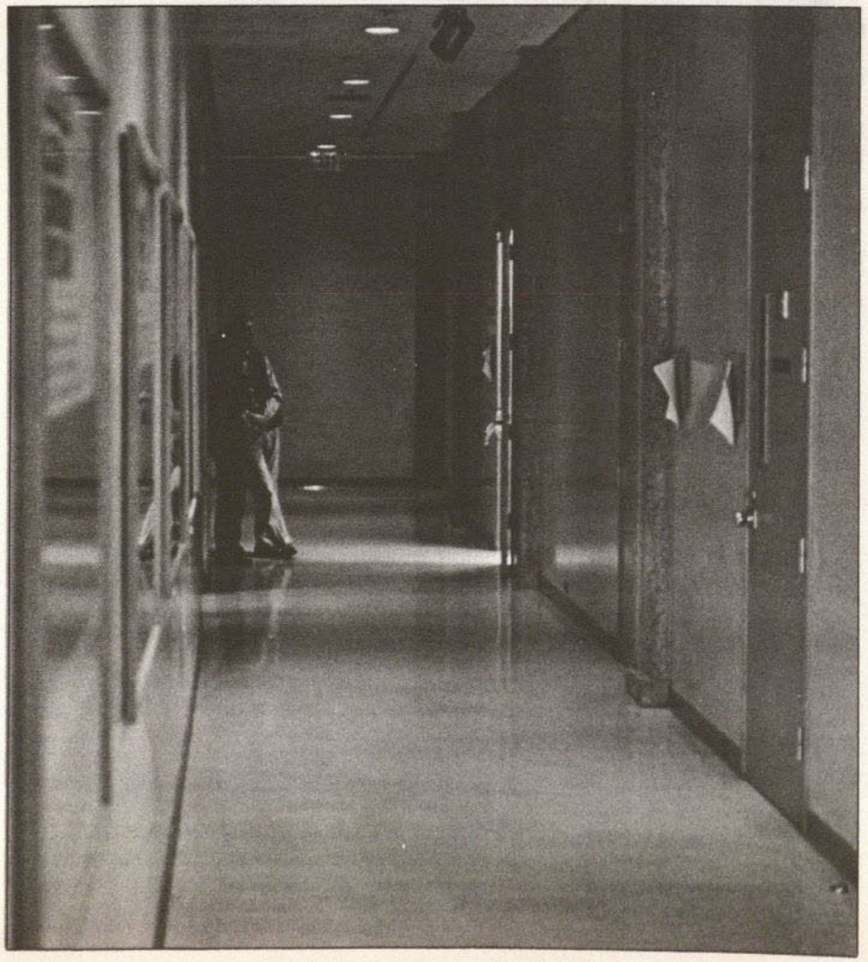
581. *(171.)* **The Writing of Fiction (3) I, II**
Prerequisite: English 280.
A writing workshop in fiction. May be repeated with new content. Maximum credit six units.

582. *(172.)* **The Writing of Nonfiction (3) I**
Prerequisite: English 280.
A writing workshop in nonfictional prose. May be repeated with new content. Maximum credit six units.

589. *(179.)* **Senior Workshop in Creative Writing (3) I, II**
An advanced workshop intended only for students who have an extensive background in creative writing. Different sections of the course may treat advanced poetry writing, advanced fiction writing, or other special topics.

GRADUATE COURSES

Refer to the Graduate Bulletin.



European Studies

In the College of Arts and Letters

Faculty

European Studies is administered through the European Studies committee, composed of faculty members from the departments of Anthropology, Art, Classical and Oriental Languages and Literatures, French and Italian Languages and Literatures, Geography, Germanic and Slavic Languages and Literatures, History, Literature, Philosophy, Political Science, and Spanish and Portuguese Languages and Literatures; and the Library. Professor Leon Rosenstein 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 in the section of this catalog on "Graduation Requirements."

Preparation for the major. Art 258 or 259; Economics 101 and 102, or Geography 101 and 102, or Political Science 101 and 103; History 105A-105B. (15 units.)

Foreign Language Requirement. Twelve units in Latin or one of the major European languages (French, German, Italian, Russian, Spanish).

Major. A minimum of 30 upper division units to be chosen with approval of the adviser and distributed as follows: six units in humanities to include European Studies 401A-401B or 402A-402B; six units in a major European foreign language; nine units in economics, geography, history or political science; six units in art, classics, comparative literature, music or philosophy; three units of electives. Majors in European studies must have their program for each semester approved by the adviser.

LOWER DIVISION COURSES

100. European Civilization (3) S
The civilization of Europe through a conducted travel tour. (Formerly numbered Humanities 48-S.)

110. French Civilization (3) I
French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in French 421 or European Studies 310. (Formerly numbered Humanities 42.)

111. French Civilization (3) II
French culture from the Enlightenment to the present. Continuation of European Studies 110. Not open to students with credit in French 422 or European Studies 311. (Formerly numbered Humanities 43.)

120. German Civilization (3) I
The major currents and characteristics of German culture of the Middle Ages and the Renaissance as expressed in literature, art and philosophy. Not open to students with credit in European Studies 320. (Formerly numbered Humanities 44.)

121. German Civilization (3) II
The major currents and characteristics of German culture as expressed in literature, art and philosophy since the Renaissance. Not open to students with credit in European Studies 321. (Formerly numbered Humanities 45.)

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

(Intended for Undergraduates)

310. French Civilization (3) I
French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in French 421 or European Studies 110. (Formerly numbered Humanities 142.)

311. French Civilization (3) II
French culture from the Enlightenment to the present. Continuation of European Studies 310. Not open to students with credit in French 422 or European Studies 111. (Formerly numbered Humanities 143.)

320. German Civilization (3) I
Investigation of the forces shaping German civilization in the Middle Ages and the Renaissance. Emphasis on history of ideas with reference to their manifestations in the arts and social institutions. Not open to students with credit in European Studies 120. (Formerly numbered Humanities 144.)

321. German Civilization (3) II
Investigation of the forces shaping German civilization since the Renaissance. Emphasis on history of ideas with reference to their manifestations in the arts and social institutions. Not open to students with credit in European Studies 121. (Formerly numbered Humanities 145.)

330. Russian Civilization (3) I
The major currents and characteristics of Russian culture, as expressed through the centuries in literature, art, philosophy and music from the beginnings to early 19th century. Not open to students with credit in European Studies 130. (Formerly numbered Humanities 152.)

331. Russian Civilization (3) II
Modern Russia's cultural development from early 19th century (The Golden Age) to the present. Not open to students with credit in European Studies 131. (Formerly numbered Humanities 153.)

340. Italian Civilization (3) I
The major aspects of Italian civilization with emphasis on literature, art, philosophy, music and history from the earliest times to the Renaissance. Not open to students with credit in European Studies 140. (Formerly numbered Humanities 154.)

341. Italian Civilization (3) II
Continuation of European Studies 340 from the Renaissance to the present. Not open to students with credit in European Studies 141. (Formerly numbered Humanities 155.)

350. Spanish Civilization (3)
The principal aspects of Spanish civilization with emphasis on literature, philosophy and the arts. Not open to students with credit in Spanish 440. (Formerly numbered Humanities 140.)

400. European Civilization (3)
The civilization of Europe through a conducted travel tour. (Formerly numbered Humanities 148-S.)

401A-401B. The Cultural Heritage of Europe I, II (3-3) I, II
European civilization from the Middle Ages to the end of the 16th century with emphasis on major cultural movements. Semester I: Romanesque and Gothic; Semester II: Renaissance, Reformation, Mannerism. (Formerly numbered Humanities 150A-150B.)

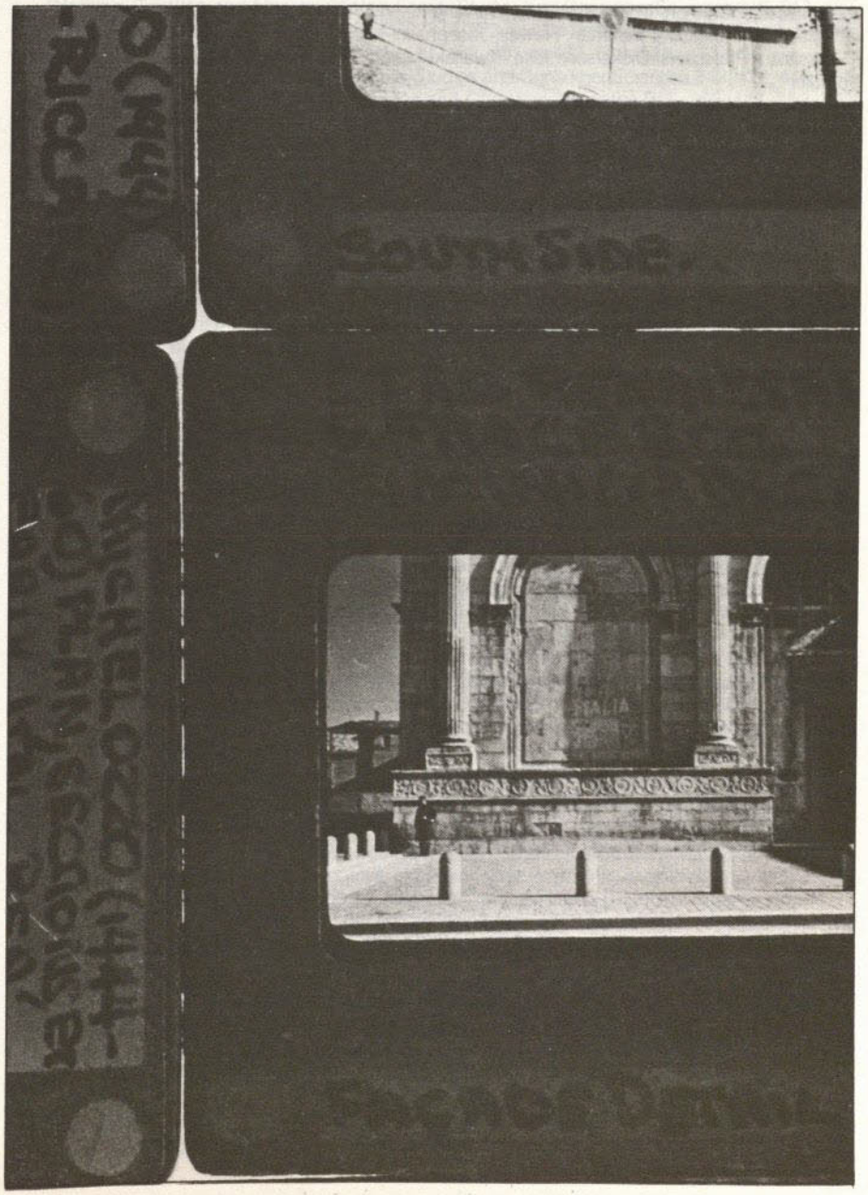
402A-402B. The Cultural Heritage of Europe III, IV (3-3) I, II
European civilization from the 17th to the 20th century with emphasis on major cultural movements. Semester I: Baroque, Rococo, Neo-Classicism; Semester II: Romanticism, Realism, Naturalism, Symbolism, Expressionism, Existentialism, Structuralism. (Formerly numbered Humanities 151A-151B.)

498. Senior Seminar (3)
Advanced study of an aspect of European studies. May be repeated with new content. Maximum credit six units.

UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

580. Seminar: Topics (3)
Special topics appropriate to the interdisciplinary study of Europe. Reading, observation and evaluation of scholarly literature of topic under consideration. May be repeated with new content. Maximum credit six units.



Family Studies and Consumer Sciences

In the College of Professional Studies

A member of the American Home Economics Association

Faculty

Emeritus: Boggs, Comin, Somerville, Stout, Thomas, Warmer
Director: Fulcomer
Professors: Cannon, Dorris, Fulcomer, Gunning
Associate Professors: Flottman, Hewes, Josephson, Milne, Price
Assistant Professors: Dickerson, Jose, Kwallek, Martin, K.J., Martin, M., Mikitka, Ross, Schupp, Spindler
Lecturers: Hawkins, Kripke, Phillips, Warner

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.
Teaching major in home economics for the single subject teaching credential.
Minor in home economics.

Home Economics Major

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

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

A minor is not required with this major.

Two plans are provided for the major in home economics: Plan A for students interested in the area of Foods and Nutrition; and Plan B for students interested in the area of Home Economics.

Plan A: Emphasis in Foods and Nutrition

This program is planned for students interested in qualifying professionally for diverse careers in the fields of dietetics, food service managements, and food industries. Under faculty direction, students can select course sequences which best suit their career goals. Students can fulfill academic requirements for admission to dietetic internships or traineeships and/or graduate schools which further qualify them for membership in the American Dietetic Association and registration as a dietitian.

Professional careers in dietetics include administrative, therapeutic, teaching, research, and public service positions in hospitals, schools, clinics, and other institutions. Graduates may also qualify for careers as food service managers in private and public organizations and institutions or as technical specialists within food companies, private or governmental agencies and laboratories, military service, and the mass media.

Preparation for the major. Family Studies and Consumer Sciences 204, 205A, 205B, 151 or 240, 270; Biology 100, 100L; Business Administration 210A; Chemistry 100, 100L (or 200, 200L and 201, 201L), 130, 130L (or 230, 230L), 160 (except with 200 series); Economics 101, 201 (or Mathematics 119); Microbiology 210 (or 310); Physics 107, 107L; Psychology 101; Sociology 101. (50-57 units.)

Major. A minimum of 40 upper division units with 24 or more units selected with consent of adviser from Family Studies and Consumer Sciences 401, 402A, 402B, 403, 404, 405, 406, 422, 480, 482, 507, 508, 510; Biology 362, 462L; Business Administration 315, 350, 351 or 352, 360; Chemistry 361A, 361B; Health Science and Safety 470.

Plan B: Emphasis in Home Economics

This emphasis is for students interested in a comprehensive program in home economics. A lower division core provides experiences with child development and family relations, nutrition, family economics, home management, housing, clothing, textiles, and merchandising. At the upper division level, students may choose to continue with this comprehensive program or select one of the two core professional sequences — Clothing, Textiles and Merchandising; Consumer Services and Housing. Students choosing the comprehensive program follow the major for the single subject teaching credential in home economics.

Preparation for the major. Family Studies and Consumer Sciences 115 or competency examination, 119, 135, 151, 204, 240, 245, 270; Art 101; Biology 100, 100L; Chemistry 100, 100L, 130, 130L; Economics 100 or 102 or 304; Psychology 101; Sociology 101. (Business Administration 231 required for students interested in housing; Business Administration 210A required for students interested in fashion merchandising.) (43-48 units.)

Major. A minimum of 36 upper division units selected from one of the core professional sequences.

Core Professional Sequences.

Clothing, Textiles and Merchandising: Family Studies and Consumer Sciences 315, 317, 422, 519, 520, 522; Business Administration 350, 370, 372, 373; twelve units selected from Family Studies and Consumer Sciences 316, 323, 360, 361, 440, 462, 481 or 483, 518, 521.

Consumer Services and Housing: Family Studies and Consumer Sciences 343, 422, 440, 451, 546. Twenty units selected from Family Studies and Consumer Sciences 345, 355, 446, 452, 482, 536, 545, 553; Art 552; Business Administration 370, 437; Geography 354; Public Administration 320; Sociology 424. (The prerequisites for Art 552 and Geography 354 have been waived. The prerequisite of Family Studies and Consumer Sciences 205B for Family Studies and Consumer Sciences 451 has been waived.)

Child Development Major

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

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

A minor is not required with this major.

Preparation for the major. Anthropology 102, Biology 100, Family Studies and Consumer Sciences 107, 270 and 271; Health Science and Safety 101; Family Studies and Consumer Sciences 135 or Social Welfare 130; Family Studies and Consumer Sciences 151 or 240; Psychology 101, 260; Sociology 101; Sociology 201 or Psychology 270. (36 units.)

Major. A minimum of 37 upper division units to include Biology 350; Family Studies and Consumer Sciences 335, 375, 375L (one unit), and 422; Psychology 350; Sociology 440 or Psychology 340; and 18 units selected with the approval of the adviser, at least 12 and not more than 15 units of which must be in an area in which the student wishes to concentrate. A master plan for each student must be filed with evaluations.

Home Economics Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

The major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Family Studies and Consumer Sciences 119, 135, 151, 204, 205A-205B, 240, 245, 270; Art 101; Chemistry 100, 100L, 130, 130L; Economics 100 or 102; Psychology 101; Sociology 101. (52 units.)

Major. A minimum of 36 upper division units in Family Studies and Consumer Sciences to include 315 or 518 (prerequisite waived with approval of adviser), plus three units in clothing and textiles; 335 or 536, 343, 375, 375L (prerequisite 271 waived), 422, 440, 451, 483, 545 or 546, 584.

Home Economics Minor

The minor in home economics consists of a minimum of 18 to 21 units in family studies and consumer sciences, 12 units of which must be in upper division courses. The 18 to 21 units must be selected from one of the following areas:

** Foods and Nutrition:* Family Studies and Consumer Sciences 204, 205A, 205B, and 12 units selected from 401^{+}, 402A^{+}, 402B^{+}, 403, 404, 405, 406, 480, 507, 508, 510 (and/or 590 if appropriate).

Consumer Services: Family Studies and Consumer Sciences 240, 350, and 12 units selected from Family Studies and Consumer Sciences 343^{+}, 355, 440, 541, 545^{+} (and/or 590 if appropriate).

****Clothing, Textiles and Fashion Merchandising:** Family Studies and Consumer Sciences 119, 317, 360, 361, 462, 520 (and/or 590 if appropriate).

****Housing:** Family Studies and Consumer Sciences 119, 245, 343, 345, 446, 545, 546 (and/or 590 if appropriate).

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

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* Prerequisites for required courses include: Biology 100, 100L; Chemistry 100, 100L, 130, 130L, or 200, 200L, 201, 201L.

** Prerequisites for required courses include: Art 101; Chemistry 100, 100L or 200, 200L, and 130, 130L.

+ Indicates course with prerequisites not included in requirements listed above.

LOWER DIVISION COURSES

101. *(101.)* **Food Management and Preparation (3) I, II**
One lecture and six hours of laboratory.
Not open to home economics majors and minors.
Planning, preparing and serving nutritionally adequate meals for different income levels, life styles and cultures.

107. Nutrition Today (3) I, II
Obtaining nutritional needs from a varied food supply.
Not open to foods and nutrition majors or students with credit in Family Studies and Consumer Sciences 204.

115. *(15.)* **Clothing and Textiles (3) I, II**
One lecture and six hours of laboratory.
Commercial patterns and their adaptation; fitting and construction; selection and care of textiles.

119. *(19.)* **Textiles (3) I, II**
One lecture and six hours of laboratory.
Prerequisites: Chemistry 130, 130L.
Fibers, yarn, fabric construction, and finishes as related to selection, use, and care.

135. *(35.)* **Marriage and Family (3) I, II**
Love, maturity, dating, compatibility, conflict as they relate to preparation for successful marriage and family living. This course not open to students with credit in Social Welfare 130.

151. Home Management Decision Making (3) I, II
Examination of value systems and application of principles of decision making to individual, professional and family management in changing situations.

204. *(4.)* **Fundamentals of Nutrition (3) I, II**
Prerequisites: Biology 100, 100L; Chemistry 100, 100L, 130, 130L, or 200, 200L, 201, 201L.
Nutrition as applied to the stages of the normal life cycle.

205A-205B. Foods (3-3) I, II
One lecture and six hours of laboratory.
Prerequisites for 205A: Chemistry 100, 100L, 130, 130L and credit or concurrent registration in Family Studies and Consumer Sciences 204.
Prerequisite for 205B: Family Studies and Consumer Sciences 205A.
Introduction to composition, properties and quality attributes of foods; methods of preparation, consumer evaluation, and use of food ingredients and systems; basic principles of sanitation, food preservation, and meal management and service.

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**
One lecture and six hours of laboratory.
Prerequisite: Art 101.
Architectural, functional and aesthetic factors of housing and interiors as related to family needs.

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.

271. *(171.)* **Human Development: Early Childhood (3)**
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. (Formerly numbered Family Studies and Consumer Sciences 371.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

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) II**
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Principles of tailoring; planning and construction of coats and suits.

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.

323. *(123.)* **Fabric Structure and Design Processes (3) II**
One lecture and six hours of laboratory.
Prerequisite: Art 101.
A study of stitchery, knitting, crocheting, weaving, macrame, and textile decoration.

335. *(135.)* **Family Interaction (3) I, II**
Prerequisite: Family Studies and Consumer Sciences 135.
Marriage adjustment and family interaction throughout the life cycle.

343. *(143.)* **Household Equipment and Processes (3) I, II**
One lecture and six hours of laboratory.
Prerequisite: Chemistry 130, 130L.
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.

355. Time and Human Resource Management (3) I, II
Analysis of time and human resources with application to the environment.

360. *(160.)* **Fashion Merchandise Analysis (3) I, II**
Contemporary problems of production and distribution of textiles and clothing.

361. Fashion Merchandise Practicum (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 317, 360 and consent of program adviser.
Supervised experience in apparel merchandising procedures through a cooperative program with a retail establishment.

375. *(175.)* **The Nursery School Program (3)**
Prerequisites: Family Studies and Consumer Sciences 271; concurrent registration in Family Studies and Consumer Sciences 375L for one unit only.
Methods, materials, program development, and evaluation of current trends in working with young children. (Formerly numbered Family Studies and Consumer Sciences 575.)

375L. *(175L.)* **Laboratory Experiences in Nursery School (1-4)**
Three hours of laboratory for each unit of credit.
Prerequisites: Family Studies and Consumer Sciences 271; first unit requires concurrent registration in Family Studies and Consumer Sciences 375. Application to take additional units requires prior consent of instructor.
Directed experiences in working with children in child development laboratory and other preschool situations. May be repeated with consent of instructor. Maximum credit four units. (Formerly numbered Family Studies and Consumer Sciences 575L.)

401. *(100.)* **Science of Foods (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 205B, Microbiology 210, Physics 107 and 107L.
The structure and physical, chemical and functional properties, and quality attributes of foods; food processing and processed induced changes and interactions of food components; regulatory agencies and laws; group project studies; data interpretation.

402A. *(102.)* **Advanced Nutrition (3) I, II**
Prerequisites: Family Studies and Consumer Sciences 204; Biology 362, 462L; one course in biochemistry. Recommended: Concurrent registration in Family Studies and Consumer Sciences 402B.
Integrated approach to nutrition principles and human nutrient requirements.

402B. Advanced Nutrition Laboratory (3) I, II
Six hours of laboratory.
Prerequisites: Credit or concurrent registration in Family Studies and Consumer Sciences 402A.
Experimental techniques used in nutrition studies.

403. *(103.)* **Quantity Food Production (3) I, II**
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 401.
Application and evaluation of techniques and equipment utilized in food service operations for quality and financial control, production, distribution and service of food.

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.
Application of principles and methods of physical and sensory evaluation and food component analysis to conventional and fabricated foods; effects of additives and ingredient variations; project studies; data interpretation and report writing.

406. *(106.)* **Diet Therapy (3) I, II**
Prerequisite: Family Studies and Consumer Sciences 402A.
Dietary management of pathological and dibilitating diseases.

422. Contemporary Issues in Family Studies and Consumer Sciences (3)
Prerequisite: Six upper division units in family studies and consumer sciences.
Analysis of current and emerging forces and issues having impact on individuals and families served by professionals and programs related to family studies and consumer sciences.

436. The Individual, Family, and Society (3) I, II
Prerequisites: Psychology 101, Sociology 101, family studies and/or child development six units.
Analysis of individual and family needs and the social institutions and agencies which satisfy these needs. Emphasis on relevant social issues. Includes eight to ten hours of field trips to community agencies.

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**
Twelve hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 151, 205B and 240.
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) II
Prerequisite: Family Studies and Consumer Sciences 361.
Intensive and specific consideration of practices and problems related to the apparel industry.

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.

480. *(180.)* **Demonstration Techniques (3) I, II**
One lecture and six hours of laboratory.
Prerequisite: Six units in Family Studies and Consumer Sciences.
Organizing materials and developing techniques used for demonstrations and presentations in business, promotional and educational settings. Preparation of scripts, photographic styling, television productions, and professional demonstrations.

481. *(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 (4) I, II
Three lectures and two hours of activity.
Prerequisite: Twelve upper division units in family studies and consumer sciences.
Development and design, instructional procedures and evaluation strategies for consumer-home economics programs.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

507. Processing Food and Nutrition Data (3) 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
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.

518. *(118.)* Clothing Design: Flat Pattern (3) I
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 130, 130L.
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) I
Socioeconomic influences on consumer clothing behavior patterns.

521. *(121.)* Clothing Design: Draping (3) 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.

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.

541. Consumer Interest (3) II
Prerequisite: Family Studies and Consumer Sciences 240 or 440.
Analysis of consumer legislation, consumer information and consumer protection programs.

545. *(145.)* Family Housing (3) I
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) II
Prerequisite: Family Studies and Consumer Sciences 245.
Problems of developing effective housing for families in various cultural situations. Investigation of sociopsychological, economic and legislative factors of housing.

553. *(153.)* Supervised Field Work in Home Management (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 271, 451, 536.
Management and social problems as they relate to the home and family. Supervised field work with various community agencies and selected families.

570. *(170.)* Human Development: Infancy (3) I, II
Two lectures and three hours laboratory.
Prerequisites: Family Studies and Consumer Sciences 270 or Psychology 330; Psychology 260. Biology 350 recommended.
Physiological, psychological, social and cultural development of the human organism from birth through age two with directed observation and laboratory demonstration with infants.

576. Supervised Experiences with Young Children (3) I, II
One lecture and six hours of field work.
Prerequisite: Nine units in child development.
Directed experiences in various community settings. Emphasis on application of child development principles in working with young children. May be repeated with new content. Maximum credit six units.

577. *(177.)* Administration and Supervision in Nursery Schools (3) I, II
Prerequisite: Family Studies and Consumer Sciences 375 and 375L 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.

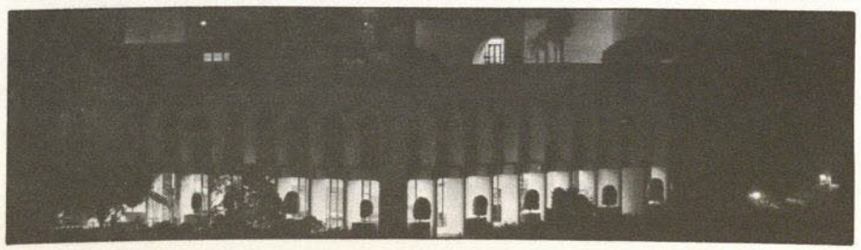
579. *(179.)* Advanced Child Study (3) Irregular
Prerequisite: Nine units in child development courses.
Physical, social, and psychological factors which determine the direction of child behavior. Readings and interpretations of scientific literature which contribute to an understanding of theories of human development

584. Occupational Home Economics Programs (3) I
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences.
Vocational education legislation; development and administration of occupational and career programs in all areas of home economics.

590. *(190.)* Advanced Studies in Family Studies and Consumer Sciences (1-6) Irregular
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences.
Advanced study of selected topics. Maximum credit nine units. No more than six units may be applied toward either the bachelor's or master's degree.

GRADUATE COURSES

Refer to the Graduate Bulletin.



French

In the College of Arts and Letters

Faculty

Emeritus: Brown
Chair: Jackson
Professors: Jackson, Max, Messier, Nelson, Piffard
Associate Professors: Branan, Glasgow, Woodle
Assistant Professors: Cox, Ghilbert, Palmer

Offered by the Department of French and Italian Languages and Literatures

Master of Arts degree in French.
Major in French with the A.B. degree in liberal arts and sciences.
Teaching major in French for the single subject teaching credential in foreign languages.
Minor in French.

French Major

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

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

Students majoring in French must complete a minor in another field to be approved by the departmental adviser in French.

Preparation for the major. French 101, 102, 201, 202, 211, and 212. (20 units.) Recommended: History 105A-105B.

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 24 upper division units in French to include French 301, 302, 305A-305B, 401 or 411 or 431, and nine units of upper division courses in the language.

French Major

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in French is required for the degree.

Preparation for the major. French 101, 102, 201, 202, 211, 212. (20 units.)

Major. A minimum of 24 upper division units in French to include French 301, 302, 305A-305B, 401, 421, 422, 431.

French Minor

The minor in French consists of a minimum of 15 units in French, six units of which must be in upper division courses.

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

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school French may be counted as the equivalent of French 101; three years the equivalent of French 102; and four years the equivalent of French 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

LOWER DIVISION COURSES

Native speakers of French will not receive credit for taking lower division courses except with advance approval from the department.

All lower division courses in French are taught in French.

101. *(1.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Pronunciation, oral practice, readings on French culture and civilization, essentials of grammar. Not open to students who have completed three years of high school French.

102. *(2.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Prerequisite: French 101 or two years of high school French.
Continuation of French 101. Not open to students who have completed four years of high school French.

201. *(3.)* **Intermediate (4) I, II**
Prerequisite: French 102 or three years of high school French.
A practical application of the fundamental principles of grammar. Reading in French of cultural material, short stories, novels or plays; oral and written practice.

202. *(4.)* **Intermediate (4) I, II**
Prerequisite: French 201 or four years of high school French.
Continuation of French 201; outside reading with oral and written reports.

211. *(10.)* **Conversation (2) I, II**
Prerequisite: French 102 or three years of high school French.
Reading and conversation. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

212. *(11.)* **Conversation (2) I, II**
Prerequisites: French 201 and 211, or four years of high school French.
Reading and conversation — advanced. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

All upper division courses in French are taught in French unless otherwise stated.

301. *(101A.)* **Advanced Grammar and Composition (3) I, II**
Prerequisites: French 202 and 212.
Advanced grammar and stylistics, intensive writing practice; reports based on outside reading. (Formerly numbered French 311A.)

302. *(101B.)* **Advanced Grammar and Composition (3) I, II**
Prerequisites: French 202 and 212.
Advanced grammer and stylistics, intensive writing practice; reports based on outside reading. (Formerly numbered French 311B.)

305A-305B. *(102A-102B.)* **Survey of French Literature (3-3) I, II**
Prerequisites: French 202 and 212.
Important movements, authors, and works in French literature from the Middle Ages to the present. (Formerly numbered French 321A-321B.)

331A-331B. *(144A-144B.)* **Masterpieces of French Literature (3-3)**
French literary masterpieces from the *Song of Roland* to the present. Taught in English.

340. Intensive French for Reading (3) Cr/NC
Prerequisites: French 101 and 102.
Reading, translation and discussion of French texts (fiction, essays, articles, etc.) for upper division and graduate students. Taught in English. (Not applicable for graduation requirement in foreign language or for majors or minors.)

401. *(150.)* **Advanced Phonetics and Diction (3)**
Prerequisites: French 202 and 212.
For students and teachers of French wishing to perfect their pronunciation and diction. Corrent formation of French sounds in isolation and combination. Class exercises, individual drill, and use of special discs and tape recording.

411. *(120.)* **Explication de Textes (3)**
Prerequisites: French 202 and 212.
An introduction to the analytical approach to the detailed study of literature. Demonstrations by instructor and students.

421. *(140.)* **French Civilization (3)**
Prerequisites: French 202 and 212.
French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in European Studies 110 or 310.

422. *(141.)* **French Civilization (3)**
Prerequisites: French 202 and 212.
French culture from the Enlightenment to the present. Continuation of French 421. Not open to students with credit in European Studies 111 or 311.

431. *(148.)* **Applied French Linguistics (3)**
Prerequisites: French 301 and 302.
Phonemics, morphemics, syntax and semantics of present day French.

496. *(184.)* **Topics in French Studies (1-4)**
Topics in French literature, culture and linguistics. May be repeated with new content. Maximum credit nine units. Taught in English. See class schedule.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: French 301, 302 and 305A-305B.
Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in French available in any given semester.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

503. *(201.)* **History of French Language (3)**
Prerequisites: French 301 and 302.
The history of the French language from the beginnings through the sixteenth century. (Formerly numbered French 611.)

511. *(117.)* **Renaissance and Baroque Literature (3)**
Prerequisites: French 301 and 302.
Readings from the major writers of the Renaissance and Baroque periods.

521. Seventeenth Century French Literature (3)
Prerequisites: French 301 and 302.
Major seventeenth century dramatists with emphasis on Corneille, Moliere and Racine. (Formerly numbered French 521A-521B.)

531. Eighteenth Century French Literature (3)
Prerequisites: French 301 and 302.
Major eighteenth century writers of fiction, with emphasis on Voltaire, Diderot and Rousseau. (Formerly numbered French 531A-531B.)

541. *(110A.)* **Nineteenth Century French Novel (3)**
Prerequisites: French 301 and 302.
Major novelists of the nineteenth century.

543. *(105.)* **Modern French Theatre (3)**
Prerequisites: French 301 and 302.
Major dramatists of modern France.

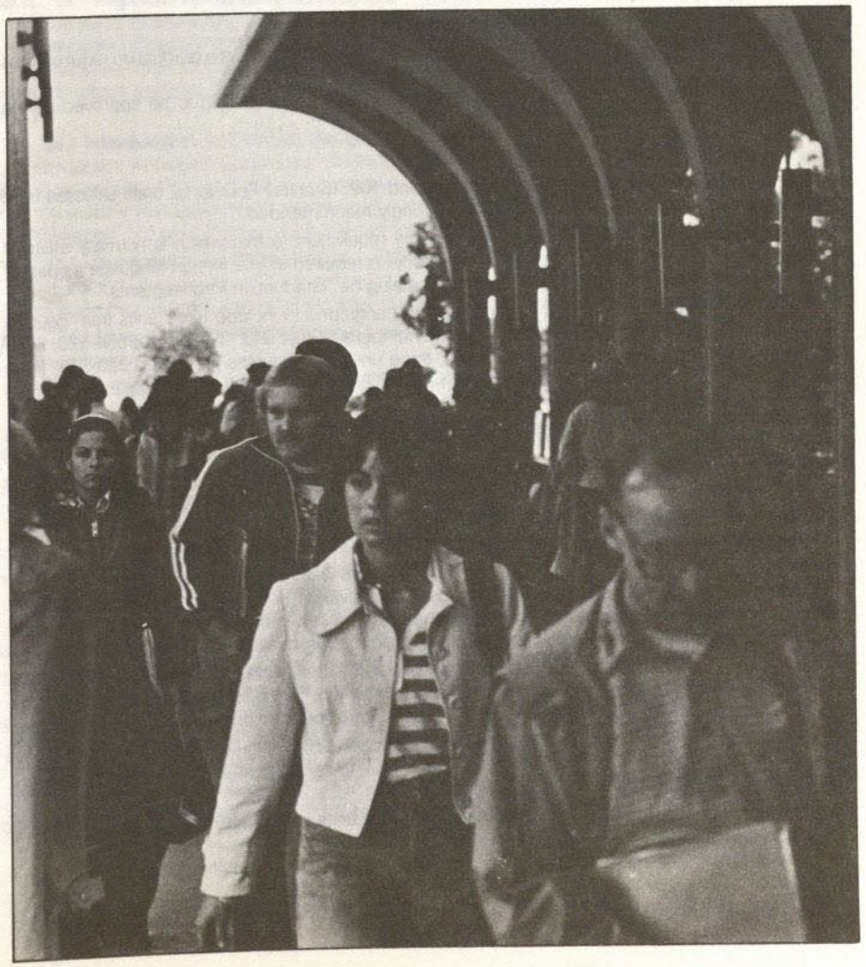
545. *(112A-112B.)* **Modern French Poetry (3)**
Prerequisites: French 301 and 302.
Representative French poets of the modern era. (Formerly numbered French 501A-501B.)

551. *(114.)* **Twentieth Century French Novel (3)**
Prerequisites: French 301 and 302.
Major novelists of twentieth century France.

596. Topics in French Studies (1-4)
Prerequisites: French 301 and 302.
Topics in French language, literature and linguistics. May be repeated with new content. Maximum credit nine units. Taught in French. See class schedule.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Geography

In the College of Arts and Letters

Faculty

Emeritus: Richardson, Storm
Chair: Johnson
Professors: Eidemiller, Finch, Ford, Greenwood, Johnson, Keen, Kiewiet de Jonge, O'Brien, Pryde, Stutz, Taylor, Wright, Yahr
Associate Professors: Blick, Griffin, Heiges, McArthur, Quastler
Assistant Professors: Colombo, Fredrich
Lecturer: Curtis

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 in the section of this catalog on "Graduation Requirements."

Students majoring in geography must complete a minor in another field to be approved by the major adviser if Plan A is chosen.

Plan A

Preparation for the major. Geography 101 and 102. (6 units.) Four to six units selected from Geography 101L, 103, 103L, 154 and 170 are strongly recommended.

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

Major. A minimum of 24 upper division units in geography to include three units from courses numbered 400, 501-509; three units from courses numbered either 310, 350-371, or 554-576; three additional units from either of the above groups; three units from courses numbered 320-339; three units from 382, 585, 587, 589; three units from 380 or 381; three units from 498 taken from three different instructors; and three units of electives.

Plan B

Plan B is a program designed for majors seeking a more applied orientation in geography than is provided by Plan A. A minor is not required; however, the student is advised to minor or concentrate in a field related to the student's specialty area.

Preparation for the major. Geography 101, 102, 103, 154, and 170; Mathematics 118 and 119. (21 units.)

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

Major. A minimum of 33 upper division units in geography to include Geography 381, 382 or 587, 495, 585, 589; and 18 units from the following groups: (a) 400, 501-509; (b) 320-339; (c) 351-358, 554-559; and (d) 370-371, 570-576. Nine of the 18 units must be from one of the above groups, and three units from each of the remaining groups.

Geography Minor

The minor in geography consists of a minimum of 18 units in geography to include Geography 101, 102 and one of the following areas:

Physical: nine units selected from Geography 400 or 501-509, and three units selected from techniques courses Geography 380-382, 581-589.

Cultural: six units from Geography 310, 312A or 312B, 350, 351, 464, 566, and six units selected from regional courses Geography 320-382, 521-522.

Urban/Transportation: nine units selected from Geography 352-358, 554-559, and three units selected from either technique or regional courses Geography 320-339, 380-382, 581-589.

Conservation: nine units selected from Geography 370, 371, 400, 570-576, and three units selected from technique courses Geography 380-382, 581-589.

Techniques: nine units selected from Geography 380-382, 581-589, and three units selected from any other upper division course.

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

LOWER DIVISION COURSES

101. *(1.)* **Introduction to Physical Geography (3) I, II**
The nature of maps, weather and climates of the world; natural vegetation; land forms and their associated soils, with reference to their climatic relationships; the seas and their coasts. Related field observations.

101L. *(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. (Formerly numbered Geography 105.)

102. *(2.)* **Introduction to Cultural Geography (3) I, II**
Introduction to cultural geography, covering the elements of culture, such as technology, race, language, religion, political organization, methods of livelihood, settlement patterns and population, and the regional distribution of these elements over the earth. A maximum of six units will be allowed for Geography 102 and 312A or 312B. Occasional field trips may be arranged.

103. *(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 103L.

103L. *(4.)* **Introduction to Meteorology Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geography 103.
Theory of meteorological instruments and observations. Practical exercise in surface and upper air observations, weather codes, and elementary weather map analysis. (Formerly numbered Geography 104.)

151. Economic Geography (3)
Prerequisite: Geography 101 or 102.
Man's economic activities over the earth's surface. Principles of agricultural production, extractive industries, manufacturing regions, industrial location, and transportation and trade.

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 Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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.

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. Offered in summer with a 10-day tour.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

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.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

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)**
Prerequisites: Geography 101 and 102.
Analysis of the physical and cultural geography of San Diego County. Topics covered will include landforms, climate, population, industry, transportation, and the effects of human activities on the natural environment.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

330. *(130.)* **Africa, South of the Sahara (3) I**
Prerequisite: Geography 101 or 102.
Characteristics of the peoples, ethnic groups and countries and their relationships to the physical environment on a subcontinental scale, as affected by historical developments.

331. *(131.)* **Eastern Asia (3) I**
Prerequisite: Geography 101 or 102.
The geographic bases for the political heritage, economies, and peoples of Eastern Asia.

333. *(133.)* **Southeastern Asia (3)**
Prerequisite: Geography 101 or 102.
The geographic bases for the political heritage, economies, and peoples of Southeastern Asia.

334. *(134.)* **Southern Asia (3)**
Prerequisite: Geography 101 or 102.
The geographic bases for the political heritage, economies, and peoples of Southern Asia.

335. *(125.)* **The Middle East and North Africa (3) I, II**
Prerequisite: Geography 101 or 102.
The geographic base for the political heritage, economies, religious institutions, and peoples of North Africa and the Middle East.

336. *(126.)* **Europe (3) I, II**
Prerequisite: Geography 101 or 102.
Systematic analysis of the geographic bases of modern European life. Regional investigation of countries of Europe except the Soviet Union.

337. *(127.)* **Soviet Union (3) I, II**
Prerequisite: Geography 101 or 102.
Natural resources, agricultural production, industrial growth, and transportation.

339. *(129.)* **Oceania (3)**
Prerequisite: Geography 101 or 102.
The physical geography, peoples, economies, and trade of Oceania, Australia, and New Zealand.

350. *(150.)* **Political Geography (3) I, II**
Geography as it relates to the strength of nations and international relations.

351. *(151.)* **Economic Geography: Primary Production (3) I**
Prerequisite: Geography 101 or 102.
The geography of agricultural production and the extractive industries in relation to world commerce. Occasional field trips may be arranged.

352. *(152.)* **Industrial Geography (3) II**
Prerequisite: Geography 101 or 102.
Principles of industrial location, with emphasis on the distribution of the world's major manufacturing regions. Occasional field trips may be arranged.

353. *(153.)* **Location Analysis and Geographic Theory (3)**
Prerequisite: Geography 101 or 102.
Spatial arrangement and interrelationships of resources, production, exchange and consumption of goods and services, and a study of location theory in economic geography.

354. *(154.)* **Geography of Cities (3) I, II**
Prerequisite: Geography 102.
Survey of the location, function and spread of cities; the spatial and functional arrangement of activities in cities, leading to an analysis of current urban problems: sprawl, city decline, metropolitan transportation. Not open to students with credit in Geography 154.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

358. *(158.)* **Transportation Geography (3)**
Prerequisite: Geography 101 or 102.
The spatial distribution of transportation networks and commodity movement and their relationship to the distribution of economic activity.

370. *(170.)* **Conservation of Environmental Quality (3) I, II**
Prerequisite: Geography 101 or 102.
Quality of man's habitat in a changing human and natural environment; water, air and soil pollution, urban crowding, disappearance of open space, and decreasing opportunities for outdoor recreation. Occasional field trips may be arranged.

371. *(171.)* **Conservation of Natural Resources (3) I, II**
Prerequisite: Geography 101 or 102.
Nature and extent of mineral, soil, water, forest, and wildlife resources and their conservation, with particular emphasis on the United States against a general background of world resources. Conservation philosophies and practices and their geographic bases.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

380. *(183.)* **Map Investigation (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Geography 101 or 102.
Use of the map as an analytical tool in geography. History of developments in cartography.

381. *(181A.)* **Maps and Graphic Methods (3) I, II**
Two lectures and three hours of laboratory
Prerequisite: Geography 101 or 102.
The art and science of creating graphs and maps as media for describing and analyzing geographic phenomena. Laboratory instruction and practice in cartographic techniques with emphasis on presenting quantitative data.

382. *(182.)* **Use and Interpretation of Aerial Photographs (3) II**
Two lectures and three hours of laboratory.
Prerequisites: Geography 101 and consent of instructor.
Stereoscopic interpretation and cartographic representation of landforms, vegetation, and land use. Emphasis on practical exercises.

400. Environmental Physiography (3)
Prerequisite: Geography 101.
Introduction to environmental physiographic dynamics. Assessment of man's role in these dynamics and their effect on urban and rural land use, including such topics as induced erosion, landslides, and flooding.

464. Social Geography (3)
Prerequisite: Geography 102.
Analysis of sociocultural distributions with emphasis on social regions, spatial behavior and cultural landscapes. Topics include landscape image and design, patterns of folk and ethnic culture and spatial diffusion processes.

495. *(196.)* **Geographic Internship (3) I, II**
Students will be assigned to various government agencies and industry and will work under the joint supervision of agency heads and the course instructor. Maximum credit six units. Three units may be applied to major in geography.

496. *(190.)* **Selected Studies in Geography (3)**
Prerequisite: Six units in geography.
Critical analysis of problems within a specific field of the discipline. May be repeated with new content. Maximum credit six units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

497. *(197.)* **Investigation and Report (3) I, II**
Prerequisites: Senior standing as a geography major or as a social science major with a concentration in geography, and departmental consent.
Analysis of special topics in geography; independent study and investigation; guidance in the collection, organization, and presentation of geographic data.

498. *(198.)* **Directed Readings in Geographic Literature (1) I, II**
Prerequisites: Credit or concurrent registration in the subject matter area in which the readings are to be undertaken, and consent of the instructor.
Individually directed readings in geographic literature. May be repeated for a maximum of three units, taken each time from a different instructor.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

501. *(101.)* **Climatic Physiography (3)**
Prerequisite: Geography 400.
The origin and morphology of landforms with emphasis on the external forces. Occasional field trips may be arranged.

502. *(102.)* **Structural Physiography (3)**
Prerequisite: Geography 400.
Origin and morphology of landforms with emphasis on internal forces. Occasional field trips may be arranged.

503. *(103.)* **Fluvial and Eolian Physiography (3)**
Prerequisite: Geography 400.
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. Occasional field trips may be arranged.

504. *(104.)* **Coastal and Submarine Physiography (3)**
Prerequisite: Geography 400.
Analysis of marine waves, of their modification in shallow waters, of coastal currents and tides. Interpretation of coastal and submarine relief in relation to environmental processes and their modification by man. Occasional field trips may be arranged.

505. *(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. Occasional field trips may be arranged.

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 505. Occasional field trips may be arranged.

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.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

508. *(100A.)* **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. *(100B.)* **Regional Climatology (3) II**
Prerequisite: Geography 103.
The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

521. Urbanization and Modernization in Latin America (3)
Prerequisite: Geography 102, 323 or 324.
Analysis of specific aspects of urbanization and modernization processes in Latin America. Emphasis on changing spatial relationships resulting from rapid urban growth and culture change. Occasional field trips.

522. Historical Geography of Latin America (3)
Prerequisite: Geography 102, 323 or 324.
Changes in the Latin American cultural landscape over time. The peopling, exploration, settlement and changing geographical patterns of all or a part of the region. Origin and diffusion studies will be stressed.

554. *(157.)* **Quantitative Methods of Urban Analysis (3)**
Prerequisites: Geography 555 or 556, and 585.
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. Occasional field trips may be arranged.

556. *(156.)* **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." Occasional field trips may be arranged.

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. Occasional field trips may be arranged.

559. *(159.)* **Urban Transportation Geography (3)**
Prerequisite: Three units of upper division urban or transportation course work in geography or related field.
Urban transportation networks and their effects, past, present and future, on the economy and physical structure of the urban region. Occasional field trips may be arranged.

566. Environmental Perception and Spatial Behavior (3)
Prerequisite: Geography 102.
Effects of social and cultural factors on man's perception and cognitive structuring of his spatial and regional physical and social environment. Effect of perceived images on migration and travel behavior.

570. Land Use Analysis (3) II
Prerequisite: Geography 370.
Problems of maintaining environmental quality in the process of land conversion from rural to urban uses with emphasis on land capability and suitability studies. Occasional field trips may be arranged.

573. *(173.)* **Geography as Human Ecology (3)**
Prerequisite: Geography 170 or 370.
Human ecology related to resource geography. Occasional field trips may be arranged.

574. *(174.)* **Water Resources (3) II**
Prerequisites: Geography 101 or 102; and 170 or 370 or 371.
Occurrence and utilization of water resources and the problems of water resource development. Occasional field trips may be arranged.

575. *(175.)* **Geography of Recreational Land Use (3)**
Prerequisite: Geography 170 or 370 or 371.
Importance of location and environment in the use, management, and quality of recreation areas.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

576. *(176.)* **Geography of Marine Resources (3)**
Prerequisite: Geography 101 or 102.
Economic geography of use of marine biotic and mineral resources. Occasional field trips may be arranged.

581. *(181B.)* **Advanced Cartography (3)**
Two lectures and three hours of laboratory.
Prerequisite: Geography 381.
Advanced laboratory instruction and practice in cartographic techniques.

582. *(181C.)* **Automated Cartography (3)**
Two lectures and three hours of laboratory.
Prerequisite: Geography 380, 381, 382, 585, 587, or 589.
Computerized methods in presenting for comprehension spatially variable information of a quantitative nature; examination of existing automated mapping systems.

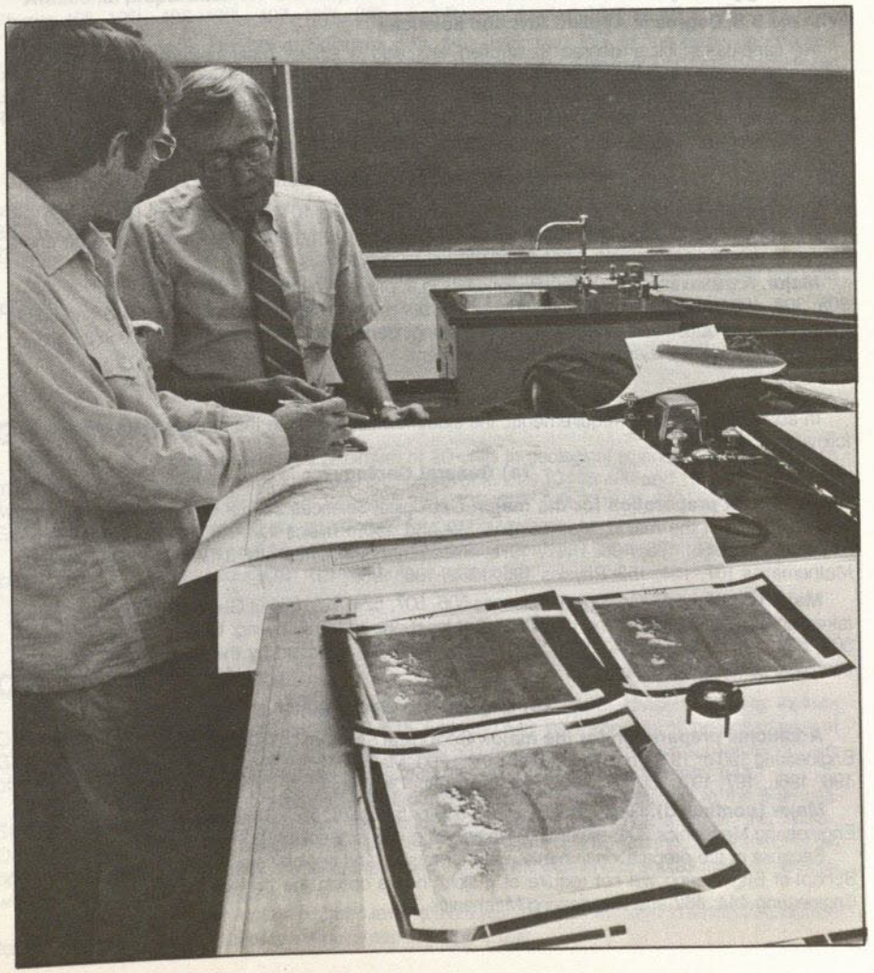
585. *(185.)* **Quantitative Methods in Geographic Research (3) I, II**
Prerequisites: Two geography courses including one in upper division; Mathematics 118 or a higher numbered course, and Mathematics 119.
Use of quantitative methods in geographic research.

587. *(187.)* **Remote Sensing of the Environment (3)**
Two lectures and three hours of laboratory.
Prerequisites: Geography 101, 102 and consent of instructor.
Multiband spectral reconnaissance of the environment. Emphasis on multispectral photography, infrared, microwave scanning systems and multifrequency radar systems, and their uses in the study of cultural and biophysical phenomena.

589. *(180.)* **Field Geography (3)**
Two lectures and three hours of laboratory.
Prerequisites: Senior or graduate standing and the completion of at least 12 units in geography, including Geography 101 and 102, and consent of instructor.
Directed fieldwork in physical and cultural geography. Occasional field trips may be arranged.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Geological Sciences

In the College of Sciences

Faculty

Emeritus: Brooks, Thomas
Chair: Berry
Professors: Abbott, Berry, Gastil, Kern, Krummenacher, McEuen, Peterson, Roberts, Threet
Associate Professors: Bertine, Ptacek, Walawender
Assistant Professors: Dorman, Marshall, Miller
Lecturer: Matthews

Offered by the Department

Master of Science degree in geology.
Major in geology with the B.S. degree in applied arts and sciences.
Minor in geology.
Minor in oceanography.

Geology Major

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

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

The major consists of basic requirements in the lower and upper division for all students plus the requirements in one of the following options: (a) General Geology, (b) Engineering Geology, (c) Geochemistry, (d) Geophysics, (e) Marine Geology, (f) Paleontology.

Basic Requirements for all Students

Preparation for the major. Geological Sciences 100 and 101, 105, 221, 224; Biology 100 and 100L; and Chemistry 200, 200L, 201, 201L. (29 units.) Recommended: a foreign language and a course in mechanical drawing if not completed in high school.

Major. A minimum of 36 upper division units in approved courses to include Geological Sciences 305, 308, 498A-498B, 508. (14 units.) Other courses may be substituted for 498A-498B and 508 in the geophysics option and for 498A-498B in the engineering geology option and for 508 in the marine geology option with the approval of the department.

Options

In addition to the basic requirements, the student must complete the requirements in one of the following options:

(a) General Geology

Additional preparation for the major. Geological Sciences 230 (or Geological Sciences 530 may be taken in the major); Mathematics 119 and 150; Physics 124A-124B and 125A-125B, or Physics 195, 195L, 196, 196L, 197, 197L. Recommended: Chemistry 310A-310B or 410A-410B; Mathematics 107, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L.

Major (continued). Geological Sciences 506, 507, 524, 525, 530 (if Geological Sciences 230 not taken under preparation for the major), and at least one of the following: Geological Sciences 314, 502, 505, 520, 521, 526, 540, 550, 551, or 560. Electives approved by the departmental adviser to complete 36 upper division units.

(b) Engineering Geology

Additional preparation for the major. Geological Sciences 230; Engineering 140, Mechanical Engineering 190 or 191, Engineering Mechanics 200; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L, or 197, 197L and 198, 198L. (35 units.)

Major (continued). Geological Sciences 510 or 512, 526, 550; Civil Engineering 218, 444, 462, Engineering Mechanics 301; either Civil Engineering 445 or Geological Sciences 551.

Because of the preparation in mathematics, physics, and geology called for in this emphasis, the School of Engineering will not require of majors in this option the prerequisites specified for Civil Engineering 444, 462 and Engineering Mechanics 301.

(c) Geochemistry

Additional preparation for the major. Chemistry 230, 230L or 231, 231L, and 251; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L. (33 units.) Recommended: Mathematics 107.

Major (continued). Geological Sciences 530; Chemistry 410A-410B; either Geological Sciences 506 and 526, or Geological Sciences 524 and 525; six units of electives approved by the departmental adviser.

(d) Geophysics

Additional preparation for the major. Mathematics 107, 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L, 215. (31 units.) Recommended: Engineering 140.

Major (continued). Geological Sciences 510, 512, 520, 521, 530; Mathematics 530; Physics 350B, 357; either Engineering 511 or Electrical Engineering 553 and Mathematics 531, or Physics 350A and 542. Recommended: Civil Engineering 218.

(e) Marine Geology

Additional preparation for the major. Geological Sciences 230; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L. (28 units.) Recommended: Mathematics 107.

Major (continued). Geological Sciences 530, 540, 545, and four of the following courses: Geological Sciences 506, 524, 525, 526, 546, 548; Biology 531; Chemistry 501; plus additional departmentally approved courses to complete a minimum of 36 upper division units for the major. Recommended: Chemistry 410A-410B for students anticipating postgraduate studies.

(f) Paleontology

Additional preparation for the major. Biology 215; Mathematics 150, or 121 and 122 (alternative of 121 and 122 should not be selected by students planning academic work beyond the B.S. degree); Physics 124A-124B and 125A-125B, or Physics 195, 195L, 196, 196L, 197, 197L; Zoology 150. (20-25 units.)

Major (continued). Geological Sciences 506, 507, 516 or 573, 526, and three courses from the following: Biology 520, 531; Botany 572; Zoology 506, 510, 560.

Geology Minor

The minor in geology consists of a minimum of 20 units in geological sciences, twelve of which must be in upper division courses, to include Geological Sciences 104 (or 100 and 101), and 105; and twelve units selected from Geological Sciences 301, 303, 305, 314, 319-S, 502, 506. In addition, Geological Sciences 221 or 230 are appropriate for geology minors.

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

Oceanography Minor

the minor in oceanography consists of a minimum of 15 upper division units to include Oceanography 541; Geological Sciences 540, 545, 546, and 548. With approval of the Department of Geological Sciences, Chemistry 501 and either Biology 531 or Zoology 510 may be substituted for any of the geological sciences courses listed above with the exception of Oceanography 541.

The oceanography minor is intended for students with extensive background in the sciences. Students lacking the prerequisites to the required courses should not attempt this minor. Oceanography 320 is not applicable toward the oceanography minor. The oceanography minor is not open to geology majors; geology students interested in the marine sciences should major in geology with the marine geology option.

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

LOWER DIVISION COURSES

100. *(2.)* **General Geology (3) I, II**
Pursuit of understanding the earth as a whole and its past, present and future evolutionary processes. Unifying concepts such as plate tectonics and its implications, the magnitude of geologic time, uniformitarianism, and the ramifications of the fossil record will be explored. Open to all students except those with previous credit in geology.

101. *(3.)* **General Geology Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geological Sciences 100.
Recognition of common earth features and materials with experience in both field and map relationships. Designed to accompany and augment Geological Sciences 100. Not open to students with previous laboratory credit in geology.

104. Physical Geology (4) I
Three lectures and three hours of laboratory.
Prerequisite: High school chemistry or physics, or credit or concurrent registration in college chemistry or physics.
Composition, origin, and distribution of earth materials, and their modification through mechanical and chemical processes. (Intended for geology majors and minors. Not open to students with credit in Geological Sciences 100.)

105. *(5.)* **Historical Geology (4) I, II**
Three lectures and three hours of laboratory. Arrangement for field study during the semester.
Prerequisites: Geological Sciences 100 and 101, or 104.
Theories of earth origin, and the evolutionary history of the earth as traced through rock and fossil records. Consideration of the Paleontologic Sequence.

153. *(53.)* **General Geology for Engineers (1) I, II**
One three-hour laboratory or field project per week.
Earth materials, geologic processes, and methods of geologic interpretation of particular concern to the engineer. Open only to students majoring in engineering. Not open to students with credit in Geological Sciences 101.

221. *(21.)* **Mineralogy (4) I, II**
Three lectures and three hours of laboratory.
Prerequisites: Credit or concurrent registration in Geological Sciences 100 and 101, or 104; high school chemistry and trigonometry, or credit or concurrent registration in college chemistry and trigonometry.
Practice in the determination of the common minerals; their geologic environment, utilization and economic significance.

224. *(24.)* **Petrology (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 100 and 101, or 104; and 221.
The origin, occurrence, identification, and classification of rocks in hand specimen.

230. *(30.)* **Introduction to Geophysics (3) II**
Prerequisites: Geological Sciences 100 and 101, or 104; elementary algebra and plane geometry.
Physics of the earth and its application to mineral exploration. Emphasis on case histories. Not open to students with credit in Geological Sciences 510 or 512.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. Geology of National Parks and Monuments (3) I, II
Prerequisites: Geological Sciences 100 and 101, or 104.
Geology of a group of national parks and monuments, selected for their geological significance, scenic beauty, and visitor popularity. (Not acceptable for a major in geology but acceptable for a minor in geology.)

303. Environmental Geology (3) I, II
Prerequisites: Geological Sciences 100 and 101, or 104.
Study of geologic processes and man, including landslides, flooding, earthquakes, and ground water resources.

305. *(100.)* **Structural Geology (3) I, II**
Two lectures and three hours of laboratory per week with occasional field trips.
Prerequisites: Geological Sciences 105 and trigonometry.
Structural features of the earth, both 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: Geological Sciences 224 and 305.
Techniques and methods of geologic observation, interpretation, and field mapping.

314. *(104.)* **Geomorphology (3) I**
Prerequisite: Geological Sciences 105.
Development and classification of landforms with consideration of processes involved.

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.

333. The History of Life (3) I
Prerequisite: A course in biological science.
Nature, origin, and evolutionary development of life on earth.

496. *(196.)* **Advanced Topics in Geology (1-4) I, II**
Prerequisite: Consent of instructor.
Selected topics in geology and related earth sciences. May be repeated with new content. Maximum credit six units.

498A. *(198A.)* **Senior Thesis (1) I, II Cr/NC**
Prerequisite: Credit or concurrent registration in Geological Sciences 308.
Selection and preliminary investigation of an individual research project which will lead to a written thesis in Geological Sciences 498B.

498B. *(198B.)* **Senior Thesis (2) I, II**
Prerequisites: Geological Sciences 498A and credit or concurrent registration in Geological Sciences 508.
Individual research project and written thesis.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Acceptable grade average in at least 12 upper division units within the major and consent of staff.
Individual study in field, library, laboratory, or museum work. Maximum credit four units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

502. *(102.)* **Geology of North America (3) I**
Prerequisite: Geological Sciences 105.
A regional analysis of North American geology, its structural, stratigraphic, and tectonic patterns and hypotheses concerning their origin and evolution.

505. *(105.)* **Photogeology (3) II**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 305 and 314.
Geologic interpretation of aerial photographs, elementary stereoscopy and stereometry applied to structural and stratigraphic problems, and compilation of geologic maps from annotated aerial photographs.

506. *(106.)* **Paleontology (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 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) II**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 105 and 224.
Stratigraphic principles and practices. Consideration of the North American stratigraphic record.

508. *(108B.)* **Field Geology (4) I, II**
One lecture and three hours of laboratory and twelve Saturday field sessions.
Prerequisite: Geological Sciences 308.
Geologic investigation of an assigned area with preparation of an individual report and a geologic map.

510. *(110.)* **Petroleum Geophysics (3) I**
Two lectures and three hours of laboratory. Occasional field trips.
Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 195L, 196, 196L, 197, 197L.
Airborne, surface, and bore-hole geophysical techniques as presently used in oil exploration.

512. *(112.)* **Mining Geophysics (3) II**
Two lectures, and three hours of laboratory or occasional field trips.
Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 195L, 196, 196L, 197, 197L.
Airborne, surface, and bore-hole geophysical techniques used for delineation of ore bodies.

516. *(116.)* **Micropaleontology (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 506.
The morphology, classification and geologic significance of the various microfossils.

520. *(120.)* **Ore Deposits (3) I**
Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.
Geologic relations, origin, distribution, and economics of metallic and nonmetallic mineral deposits.

521. *(121.)* **Petroleum Geology (3) II**
Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.
Geologic occurrence of petroleum and the application of geologic principles in exploration and production.

524. *(124.)* **Optical Mineralogy (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 221.
Theory and use of the polarizing microscope for determining optical properties of minerals as an aid to their identification.

525. *(125.)* **Petrography (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 524.
A study of rocks with the polarizing microscope; identification of mineral constituents; interpretation of textures; classification of rocks; problems of genesis.

526. *(126.)* **Sedimentology (3) I**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 105 and 224.
Origin, description, and classification of sedimentary rocks and structures.

530. *(130.)* **Geochemistry (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 224; Chemistry 201, 201L; Mathematics 121 and 122, or 150.
The relationship of basic chemical principles to geologic phenomena and environments, including applications to geologic exploration problems.

540. *(140.)* **Marine Geology (3) I**
Prerequisites: Geological Sciences 105, and either Geological Sciences 224, 314, 502, or 506.
Plate tectonic origin and history of the ocean basins. Formation and distribution of sediments in response to biological, chemical, and geological processes.

545. Descriptive Physical Oceanography (3) I, II
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical environment of oceans including heat, water, and salt budgets, physical properties of sea water, sea ice, air-sea relationships, effects of light and sound, distribution of temperature, salinity, density, surface current, deep circulation, water mass formation, instruments and methods of study.

546. Advanced Physical Oceanography (3) I
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical principles behind the dynamics of oceans. Covers physical principles behind surface waves, internal waves, seiches, tsunamies, storm surges, wind wave generation and forecasting, tidal currents, air-sea interaction, heat and light transmission.

548. Coastal and Estuarine Physical Oceanography (3) II
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical processes of marine coastal areas and estuaries. Includes longshore currents, rip currents, real waves in shallow water, wave refraction and diffraction, mechanics of sediment transport, forces and dynamics of estuarine circulations and tides.

550. *(150.)* **Engineering Geology (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 308.
Case histories selected to demonstrate the application of geology to the location, design, and maintenance of engineering projects.

551. *(151.)* **Groundwater Geology (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 224.
Geologic factors controlling the occurrence, movement and development of groundwater.

560. *(160.)* **X-Ray Diffraction (2) II**
One lecture and three hours of laboratory.
Prerequisites: Chemistry 200, 200L, 201, 201L; Mathematics 150; Physics 124A-124B and 125A-125B, or 195, 195L, 196, 196L, 197, 197L; and credit or concurrent registration in either Chemistry 310A or 410A, Engineering Mechanics 260, Geological Sciences 221, or Physics 354A.
Theory and application of x-ray diffraction to the study of materials.

573. *(173.)* **Advanced Palynology (3) II**
One lecture and six hours of laboratory.
Prerequisite: Botany 572.
Investigating problems in anthropology, botany and geology using spores, pollen grains and microplankton.

GRADUATE COURSES

Refer to the Graduate Bulletin.

German

In the College of Arts and Letters

Faculty

Emeritus: Walker, Wolf
Chair: Fetzer
Professors: Boney, Fetzer, Paulin, Schaber, Tanaka, Westervelt, Wulbern
Associate Professor: Dunkle
Lecturer: Reavis

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.
Teaching major in German for the single subject teaching credential in foreign languages.
Minor in German.

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 in the section of this catalog on "Graduation Requirements."

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), 201, 202, 211, and 212. (20 units.)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 24 upper division units in German to include German 301 and 302 and six units selected from 305A-305B, 540; and either 12 units in additional literature courses excluding German 495, or a minimum of three units in additional literature courses and a maximum of nine units in courses in Germanic linguistics.

German Major

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in German is required for the degree.

Preparation for the major. German 101, 102 (or 105 in lieu of 101 and 102), 201, 202, 211, and 212. (20 units.)

Major. A minimum of 30 upper division units in German to include 301, 302, 305A-305B, 403, 505, 510; six units of electives in German; and European Studies 320 or 321.

Proficiency Examination: Before taking a student teaching assignment in German, the candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of Germanic and Slavic Languages and Literatures. The candidate should consult the chairman of the Department.

German Minor

The minor in German consists of a minimum of 15 units in German, six units of which must be in upper division courses.

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

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school German may be counted as the equivalent of German 101; three years the equivalent of German 102; and four years the equivalent of German 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

LOWER DIVISION COURSES

Native speakers of German will not receive credit for taking lower division courses in German except with advance approval from the department.

101. *(1.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Pronunciation, oral practice, readings on German culture and civilization, minimum essentials of grammar. Not open to students who have completed three years of high school German.

102. *(2.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Prerequisite: German 101 or two years of high school German.
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 laborato-
The elements of German; oral emphasis. A one-year course concentrated in one semester. Primarily for credential candidates in German.

201. *(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. (Formerly numbered German 203.)

202. *(4.)* **Intermediate (4) I, II**
Prerequisite: German 201 or four years of high school German.
Continuation of German 201. (Formerly numbered German 204.)

208. *(8A.)* **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.

211. *(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. (Formerly numbered German 210.)

212. *(11.)* **Conversation (2) I, II**
Prerequisite: German 201 or 211, or four years of high school German.
Continuation of German 211. (Formerly numbered German 211.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101A.)* **Grammar and Composition (3)**
Prerequisites: German 202 and 212.
Grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered German 301A.)

302. *(101B.)* **Grammar and Composition (3)**
Prerequisites: German 202 and 212.
Grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered German 301B.)

305A-305B. *(102A-102B.)* **Survey of German Literature (3-3)**
Prerequisite: German 202.
Important movements, authors, and works in German literature from the Reformation to the present. (Formerly numbered German 311A-311B.)

395. Selected Germanics (3)
One of the Germanic languages or literatures (other than German or English) selected for intensive study.
Maximum credit six units in each language.

403. *(125A.)* **Advanced Oral and Written German (3)**
Prerequisites: German 301 and 302.
Advanced forms of oral and written German. (Formerly numbered German 403A.)

495. *(185.)* **Topics in German Literature (3)**
Topics in German literature to be selected by instructor. May emphasize an author, period, movement or genre. Intended primarily for the nonspecialist. Does not fulfill language requirement. May be repeated with new content. Maximum credit six units.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisites: Fifteen upper division units in the major with an average of B (3.0) or better and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

505. *(148.)* **Applied German Linguistics (3)**
Prerequisites: German 301 and 302.
Linguistic study of modern German; integration of modern linguistic theory with the language classroom.

510. *(150.)* **German Phonetics (3)**
Prerequisites: German 202 and 212.
Sounds and intonation of German.

515. Germanic Linguistics (3)
Prerequisites: German 202 and 212.
Structural and comparative Germanic linguistics.

540. *(107.)* **German Literature from its Beginning to the Reformation (3)**
Prerequisites: German 202 and 212.
Literature from the eighth century to about 1500.

545A-545B. *(103A-103B.)* **German Literature of the Eighteenth Century (3-3)**
Prerequisites: German 202 and 212.
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 202 and 212.
Goethe's ***Faust***, Parts 1 and 2: its philosophical content and its position in German and European literature; lectures, reading, reports.

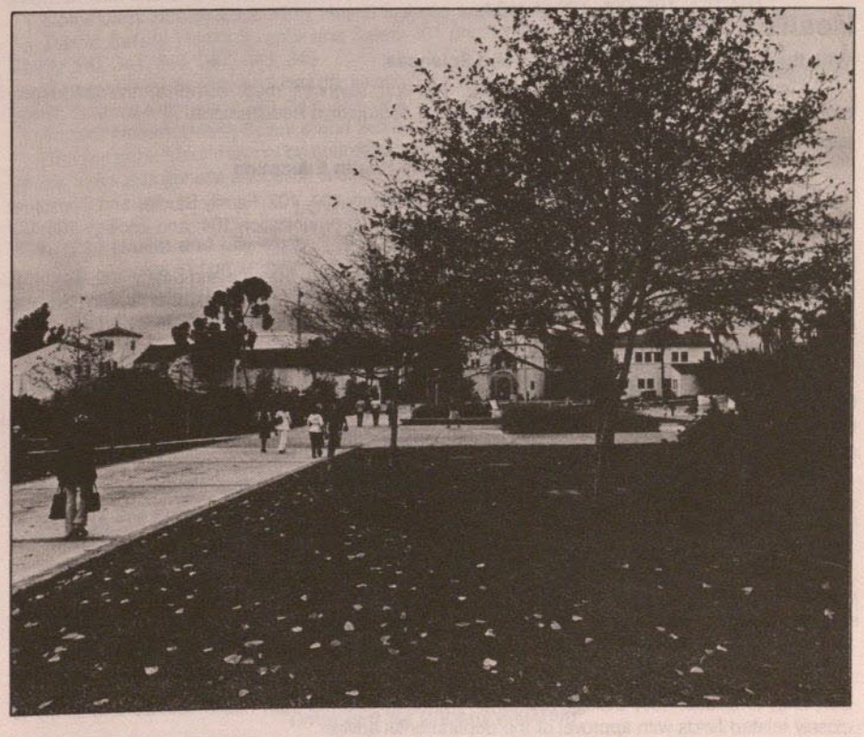
555A-555B. *(105A-105B.)* **German Literature of the Nineteenth Century (3-3)**
Prerequisites: German 202 and 212.
The literature of German Romanticism, Young Germany, Realism, and Naturalism. Outside readings and reports.

561A-561B. *(110A-110B.)* **Contemporary German Literature (3-3)**
Prerequisites: German 202 and 212.
The main developments in German literature from Neo-Romanticism to the present. Outside readings and reports.

563. *(111.)* **Contemporary German Drama (3)**
Prerequisites: German 202 and 212.
German drama from Hauptmann to the present.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Greek

Refer to section on Classics.

Health Science and Safety

In the College of Professional Studies

Faculty

Emeritus: Kitzinger
Chair: Grawunder
Professors: Bender, Burgess, Grawunder, Harper, McTaggart, Sorochan
Associate Professors: Barnes, Boskin, Fellers, Kessler, Noto, Sleet
Assistant Professor: Senn

Offered by the Department

Master of Arts degree in health science.
Major in health science with the B.S. degree in applied arts and sciences.
Teaching major in health science for the single subject teaching credential in social science.
Minor in health science.

Health Science Major

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

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

A minor is not required with this major.

Emphasis in Community Health Education

Preparation for the major. Health Science and Safety 101, 102; Family Studies and Consumer Sciences 107; Psychology 101; Sociology 101; Speech Communication 104; and Zoology 108. (22 units.)

Major. A minimum of 39 upper division units to include Health Science and Safety 400, 401, 402, 470, 490, 497, 560 (six units); Educational Technology and Librarianship 541; 12 units selected from Health Science and Safety 330, 341, 350, 561, 562, 573, 574, and 575; and Biology 362.

Emphasis in Occupational Safety and Health

Preparation for the major. Health Science and Safety 101; Chemistry 100, 100L; Psychology 101; Sociology 101; Speech Communication 104; Zoology 108; and Psychology 270, or Mathematics 119, or Sociology 201. (22 units.)

Major. A minimum of 36 upper division units to include Health Science and Safety 330, 341, 345, 351, 353, 354, 355 and 552; Sociology 520; and six units selected from Health Science and Safety 340, 497, 499 and 574 (3-6 units); and Industrial Technology 591.

Note: Health Science and Safety 490 will be required if lower division statistics has not been met. This upper division course will be in addition to the 36 upper division requirements.

Emphasis in Traffic Safety

Preparation for the major. Health Science and Safety 101, 102; Family Studies and Consumer Sciences 107; 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, 341, 347, 348, 349, 350, 400; Biology 362; and nine units selected from health science and safety or closely related fields with approval of the departmental adviser.

Health Science Major

For the Single Subject Teaching Credential in Social Science

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the B.S. degree in applied arts and sciences.

Preparation for the major. Health Science and Safety 101, 102, 170; Family Studies and Consumer Sciences 107; Psychology 101; Sociology 101; Zoology 108; and six units selected from one of the following groups: (1) Anthropology 101, 102; (2) Economics 101 and 102; (3) Geography 101, 102; (4) History 105A-105B, 110A-110B, 115A-115B; (5) Political Science 101, 102, 103; (6) Sociology 101, 110. (26 units.)

Major. A minimum of 36 upper division units to include Health Science and Safety 330, 341, 400, 470, 475, 520, 574, 575; Biology 362; Psychology 330; Sociology 440; and three units selected from health science and safety or a closely related field.

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.

Health Science Minor

The minor in health science consists of a minimum of 15 units in health science and safety selected from one of four areas:

Community Health Education: Health Science and Safety 101, 400, 401, 470, 561.

Traffic Safety: Health Science and Safety 101 and 12 units selected from Health Science and Safety 340, 341, 345, 347, 348, 349.

Occupational Safety and Health: Health Science and Safety 101 and 12 units selected from Health Science and Safety 340, 341, 351, 353, 354, 355.

School Health: Health Science and Safety 101, 320 or 321, 330, 574, 575.

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

LOWER DIVISION COURSES

101. *(21.)* **Health and Life-style (3) I, II, S**
Major variables in human health experience with attention to personal health assessment and application of health knowledge to health behavior.

102. *(65.)* **Community Health (3) I, II**
Community health problems; the role of the citizen, of the public, and of community health agencies in promoting and protecting the health of the community.

130. *(46.)* **Standard-Advanced First Aid and Emergency Care (3) I, II**
Emergency care for the sick and injured. Provides the essential information, skills and first-aid capabilities required by policemen, firemen, life guards, rescue emergency squad members, industrial safety squad members, teachers, school nurses, ambulance attendants and others interested in emergency care. Red Cross certificate.

170. *(29.)* **Physiology of Reproduction (1) I, II**
A series of lectures and discussions dealing with normal and abnormal physiology and anatomy of reproduction; facts and frauds in sex hygiene, and related topics.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(122.)* **Concepts of Health Science (3) II**
Development and application of concepts in individual, family, and community health. Involvement in health project work. Not open to students with credit in Health Science and Safety 101.

311. *(171-S.)* **Institute on Current Health Issues (1)**
A critical appraisal and analysis of selected contemporary health issues. May be repeated with new content. Maximum credit three units applicable on a bachelor's degree.

320. *(150.)* **Health Education for Elementary Teachers (3) I, II**
The teacher's function in the different aspects of the elementary school health program, with emphasis on the planning and presentation of instructional materials and community resources and relationships.

321. *(151.)* **Health Education for Secondary Teachers (2) I, II**
The teacher's function in the secondary school health program with emphasis on the planning and presentation of instructional materials and community resources.

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.

331. *(144.)* **Health in Emergencies (3) I**
An evaluation of the scope of disasters and the necessary planning for effective use of existing facilities, services, supplies and personnel within the communities. Developing emergency plans to minimize loss of life and relieve suffering from natural disasters such as floods, hurricanes, tornadoes and earthquakes as well as from man-made disasters such as fires, civil disturbances and bomb threats.

340. *(140.)* **Traffic Safety (3) I, II**
Problems of traffic safety and programs designed to deal with them.

341. *(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. (Formerly numbered Health Science and Safety 545.)

345. *(131.)* **Motor Fleet Safety (3) I**
A basic introduction to problems and practices of motor fleet (truck) safety with emphasis on regulations.

346. Motorcycle Safety Education (3) II, S
Two lectures and three hours of laboratory.
Safe riding proficiency, teaching techniques and program development.

347. *(147.)* **Traffic Safety and Driver Education (3) I, II, S**
Three lectures and one hour of laboratory.
Analysis of traffic accidents; natural and man-made laws; safe use and care of vehicles; instructional approaches and the development of one's own driving and teaching skills.

348. *(148.)* **Advanced Driver Education and Driver Training (3) I, II, S**
Two lectures and three hours of laboratory.
Prerequisites: Health Science and Safety 341 and 347.
Principles and procedures in organizing and conducting programs in driver instruction with emphasis on behind-the-wheel training. Students will teach high school youngsters to drive.

349. *(149.)* **Multimedia Techniques in Driver Instruction (3) I, II**
Prerequisite: Health Science and Safety 347.
Teaching devices and techniques in driver education and driver training, including multimedia approaches, psychophysical testing, and multiple-car driving ranges; major emphasis on driver simulators, their operation and basic principles.

350. *(177.)* **Environmental Health Education (3) I, II**
Environmental hazards of living and working in this modern technological world, including air, noise, land, food, and water pollution.

351. *(180.)* **Industrial Hygiene (3) II**
Occupational environment and its effect on the safety, health and performance of employees.

353. *(132.)* **Industrial Fire Protection (3) II**
Two lectures and three hours of laboratory.
Fire causes, building construction, flammable materials, private fire protection, and codes and laws.

354. System Safety Analysis (3) II
Prerequisite: Health Science and Safety 341.
System safety techniques as applied to the recognition of potential accident situations in occupational environments. Concentration includes the basic aspects of system safety.

355. Product Safety (3) I
Hazards of consumer products from the viewpoint of design and use. Analysis of state and federal product safety legislation; production guidelines for the safety professional and selection criteria for the consumer.

400. *(100.)* **Health Education as a Profession (3) I, II**
Prerequisite: Health Science and Safety 101.
Principles of health education and its role in the health system. For students with professional interests in health education.

401. *(101.)* **The Change Process and Health Science and Safety (3) I, II**
Prerequisite: Health Science and Safety 400.
Attitude formation, behavior change, decision making, perception, motivation, group behavior, etc., and their relationship to the practice of health science and safety.

402. Communications in Health Education (3) I, II
Prerequisite: Health Science and Safety 400 and Speech Communication 104.
Development and production of health presentations for group and individual levels; including written, oral, and graphic methods.

470. *(165.)* **Communicable and Noncommunicable Diseases (3) I, II**
Causes, prevention and control of communicable, degenerative and chronic health disorders.

471. Death Education (3) I
Cultural, psychological, physical and personal aspects of death with emphasis on educational approaches.

475. Human Sexuality (3) I, II
Examination of the development of sexual values, attitudes, and behavior from infancy to old age.

490. *(196.)* **Measurement and Evaluation in Health Science and Safety (3) I**
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 (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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.)* **Supervised Field Experience (1-6) I, II Cr/NC**
Prerequisites: Community Health Education students: Health Science and Safety 401, 402 and 560. Occupational Safety and Health students: Health Science and Safety 340 and 341.
Supervised practical experience in local health agencies and/or schools. Maximum credit six units.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

510. *(154.)* **Workshop in Health Science and Safety (1-3)**
Selected problems in health science and safety are used as a basis for workshop experiences. Maximum credit six units; maximum credit three units applicable on a master's degree.

520. *(153.)* **Administration of the School Health Program (3) II**
Administrative responsibilities of the school health program. Principles, policies, and practices involved in health instruction, health services, environment, legal implications, and community relationships.

552. *(181.)* **Safety Administration (3) I**
Prerequisite: Health Science and Safety 341.
Designed to acquaint the student with the basic administrative elements of a modern safety program. (Formerly numbered Health Science and Safety 352.)

560. *(160.)* **Introduction to Public Health (3) I, II**
Prerequisites: Health Science and Safety 102 and 400.
Philosophy, development, organization, administration, and legal aspects of public health in the United States. Disease prevention and control, health education, and the other functions and activities of official health departments, voluntary agencies, private physicians and others engaged in professional health work.

561. *(176.)* **Health and Medical Care (3) I, II**
Prerequisite: Senior or graduate standing with a major or minor in health education or a closely related area.
Health values, concepts, and attitudes; health products and facilities; hospital care and hospitalization plans; governmental health controls; economic and cultural influences on health and medical care; professional contributions, relationships, and careers; national and international health programs. Not open to students with credit in Sociology 526.

562. *(169.)* **International Health (3) I, II**
Prerequisite: Health Science and Safety 102.
Population dynamics, vital statistics, global disease patterns, and analysis of variations among nations and cultures with respect to health problems and health care services.

573. *(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 475.
Philosophy, current procedures, and materials needed for development of healthy attitudes and scientific knowledge appropriate for the understanding of human sexuality.

GRADUATE COURSES

Refer to the Graduate Bulletin.

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 (5) I**
Five lectures and one hour of laboratory.
Beginning reading, writing, and conversational skills. Essentials of grammar. Not open to students who have completed three years of high school Hebrew.

102. *(2.)* **Elementary (5) II**
Five lectures and one hour of laboratory.
Prerequisite: Hebrew 101.
Continuation of Hebrew 101. Not open to students who have completed four years of high school Hebrew.

201. *(3.)* **Intermediate (5) I**
Five lectures and one hour of laboratory.
Prerequisite: Hebrew 102.
Continuation of Hebrew 102. Applications of grammar and reading skills. Additional practice in conversation. (Formerly numbered Hebrew 203.)

202. *(4.)* **Intermediate (5) II**
Five lectures and one hour of laboratory.
Prerequisite: Hebrew 201.
Continuation of Hebrew 201. Completion of conversational and grammar sequences. Composition and reading for comprehension. (Formerly numbered Hebrew 204.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

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

History

In the College of Arts and Letters

Faculty

Emeritus: Merrill, Nasatir, Ragen, Ridout, Rohfleisch

Chair: Detweiler

Professors: Appleby, J., Berge, Coox, Cox, Davies, Detweiler, Dunn, Flemion, J., Hanchett, Munter, Norman, Pincetl, Rader, Ruetten, Schatz, Smith, C., Smith, R., Starr, Steele, Stites, Strong, Vanderwood

Associate Professors: Appleby, A., Cheek, Chu, Cunniff, DuFault, Filner, Flemion, P., Hamilton, Heyman, Hoidal, McDean, O'Brien, Phillips, Vartanian, Weinberg

Assistant Professors: Bartholomew, Oades

Lecturers: Johnson, Ringrose, Schwartz

Offered by the Department

Master of Arts degree in history; and a Master of Arts degree for teaching service with a concentration in history.

Major in history with the A.B. degree in liberal arts and sciences.

Teaching major in history for the single subject teaching credential.

Minor in history.

History Major

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

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

A minor is not required with this major.

Preparation for the major. History 105A-105B, or 110A-110B, or 115A-115B, or 120A-120B. (6 units.)

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

Major. A minimum of 30 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 Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Preparation for the major. History 105A-105B, or 110A-110B, or 115A-115B, or 120A-120B. (6 units.)

Major. A minimum of 36 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 chair) with the remaining units distributed in the following pattern:

United States: Twelve units to include History 310A-310B and six units (preferably in sequence) selected from History 537A-537B, 539A-539B, 544A-544B, 545A-545B, 546A-546B, 547A-547B, 548A-548B;

Europe: Twelve units to include History 307A-307B and six units selected from History 500A-500B, 503A-503B, 508, 509A-509B, 510A-510B, 511A-511B, 512A-512B, 514A, 514B, 517A-517B, 518A-518B, 523A-523B;

Africa, Asia, Latin America and the Middle East: Six units selected from History 315A-315B, 320, 321, 573A-573B, 574, 575A-575B;

Elective: Three units, History 425 is recommended.

History Minor

The minor in history consists of a minimum of 18 units in history to include six sequential units in the lower division. Twelve units must be in upper division history, distributed in no more than two of the fields listed under the history major.

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

LOWER DIVISION COURSES

100A-100B. The Global Community (3-3) I, II

Semester I: The growth of civilizations and the interrelations of peoples in Eurasia, Africa and America to 1650. Semester II: The response of peoples and civilizations to Western power and the forces of modernization.

105A-105B. *(4A-4B.)* **Western Civilization (3-3)**

European culture, thought and institutions from ancient times to the present. Semester I: From ancient times through the Renaissance and Reformation. Semester II: Development of modern 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)**

The political and social development of the United States, with emphasis on the rise of American Civilization and ideals. This course is primarily for lower division students.

The year course meets the graduation requirements in American Institutions, U.S. Constitution and California state and local government.

115A-115B. *(8A-8B.)* **Comparative History of the Americas (3-3)**

The western hemisphere from ancient times to the present, with focus on the interactions between the European, Amer-Indian and Afro-American cultures, institutions and traditions. Semester I: Ancient American civilizations, European colonial systems, creation of new nations. Semester II: Nations and cultures of the Americas since independence.

The year course meets the graduation requirements in American institutions, U.S. Constitution and California state and local government.

120A-120B. *(9A-9B.)* **Asian Civilizations (3-3)**

Asian culture, thought and institutions from ancient times to the present. Semester I: Traditional civilizations of Asia, with emphasis on China, Japan and India. Semester II: Development of Asian nations and nationalism in modern times.

299. *(99.)* **Experimental Topics (1-4)**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

Refer to Honors Program.

305A-305B. *(104A-104B.)* **The Sources of Civilization in the West (3-3)**

Prerequisite: Open only to upper division students.

A survey of the most important ideas and attitudes which have shaped Western Civilization since ancient times. Emphasis on cultural themes rather than a political continuum. Not open to students with credit in History 105A-105B. The course satisfies the requirement in Western Civilization but cannot be used to satisfy requirement for the major.

307A-307B. Modern Europe (3-3) I, II
History of Europe from the Renaissance to the present. Social, economic, and intellectual trends, the development of the nation-state, and the reasons for continental conflict. Semester I: The Renaissance to 1789. Semester II: The French Revolution to contemporary times. Required for the teaching credential in history.

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: 1877 to the present.
Designed primarily for social science majors, history minors, and students seeking an upper division elective. History 310A-310B meets all American history and institutions, U.S. Constitution and California government requirements for graduation. Not open to students with credit in History 110A-110B and cannot be used to satisfy requirements for the history major.

315A-315B. *(160A-160B.)* **Latin America (3-3)**
Semester I: Colonial Period to approximately 1825. Semester II: Republican Latin America. Not open to students with credit in History 115A-115B. Meets field requirement (d) Latin America toward credit in the major.

320. Asia's Dynamic Traditions (3)
Emergence and continuing vitality of historic traditions in India, China, and Japan. Topical, comparative survey emphasizing Confucian, Buddhist, and Hindu ideas and the interaction with institutions of family and village. (Not open to students with credit in History 120A. Meets field requirement (e.) South, Southeast and East Asia toward credit in the major.) (Formerly numbered History 320A.)

321. Asia's Emerging Nations (3)
Historic changes which have contributed to the rise of modern Japan, India and China. Topical, comparative approach emphasizing ways Asian societies have responded to challenges of imperialism, nationalism, revolution, war, and modernization. (Not open to students with credit in History 120B. Meets field requirement (e.) South, Southeast and East Asia toward credit in the major.) (Formerly numbered History 320B.)

335. *(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.

340. Environmental Problems in Historical Perspective (3) I, II
Past attitudes, policies, and behavior toward the land in context of religious and ethical beliefs, social values, economic practices, and political systems. Cannot be used to satisfy requirements for major.

425. *(102.)* **Great Historians and Historical Literature (3) I, II**
Lectures and readings in the history of history and the works of major historians. Open to all upper division students; especially recommended for history and social science majors. Meets field requirement (g) Topical Subjects toward credit in the major.

430. *(198.)* **The Writing of History (3) I, II**
Prerequisite: History major or 12 upper division units in history.
Historical method and research in some aspect of history.

496. *(180.)* **Selected Studies in History (3)**
Topics in the various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration and capitalism. Maximum credit six units.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

Field (a). Ancient and Medieval

500A-500B. *(111A-111B.)* **Ancient History (3-3)**
Semester I: Greece to the Roman Conquest. Semester II: Rome to the 5th Century A.D.

503A-503B. *(121A-121B.)* **Europe in the Middle Ages (3-3)**
European social, cultural, and political developments from the fall of Rome to the Renaissance.

505. *(123.)* **The Byzantine Empire (3)**
The social, political, cultural, and economic development of the Eastern Roman Empire from the crisis of the third century to the fall of Constantinople in 1453.

Field (b). Modern Europe

508. *(131.)* **The Renaissance (3)**
The intellectual, artistic, and social transformation of Europe from the 14th through the early 16th century.

509A-509B. *(132A-132B.)* **Early Modern Europe (3-3)**
Continental Europe in the 16th and 17th centuries: the religious revolt and religious wars, rise of monarchy, baroque culture, the revolutions in commerce and science. Semester I: The century after Luther. Semester II: The 17th century.

510A-510B. *(133A-133B.)* **Europe in the 18th Century (3-3)**
The "Old Regime" and the influence of the Enlightenment and the Enlightened Despots are emphasized. Semester I: The 18th century to 1763. Semester II: Intellectual and social changes in the quarter century before the French Revolution.

511A-511B. *(135A-135B.)* **Europe in the 19th Century (3-3)**
Social, political, and economic developments of 19th century Europe.

512A-512B. *(137A-137B.)* **Europe in the 20th Century (3-3)**
Political and social developments from 1870 to the present.

513A-513B. *(141A-141B.)* **History of Scandinavia (3-3)**
The major political, social and economic developments in Scandinavia from the Viking Age to the present. Semester I: From the Viking Age to the end of the Napoleonic Wars. Semester II: Modern Scandinavia, 1814 to the present.

514A. *(142A.)* **The French Revolution and Napoleonic Era (3) I**
Prerequisite: History 105A-105B.
France on the eve of the Revolution; the Great Revolution, 1789-1799, the Napoleonic Era.

514B. *(142B.)* **Modern France (3) II**
Prerequisite: History 105A-105B.
The development of France since 1815.

515A-515B. *(143A-143B.)* **The Iberian Peninsula (3-3)**
Survey of Spain and Portugal and their empires, with emphasis on economic, social, and cultural developments. Semester I: From the beginnings to the early sixteenth century. Semester II: From the sixteenth century to the present.

517A-517B. *(146A-146B.)* **Germany and Central Europe (3-3)**
A social and political history of Germany and Central Europe. Semester I: From the Reformation to 1848. Semester II: From 1848 to the present.

518A-518B. *(147A-147B.)* **Russia and the Soviet Union (3-3)**
Semester I: Political, social and economic development of Russia in Europe and Asia from the earliest times to the close of the 19th century. Semester II: Emphasis on the 20th century.

519. *(149.)* **Modern Italy (3)**
The development of Italy from 1815 to the present.

520A-520B. *(151A-151B.)* **England (3-3)**
Prerequisite: History 520A 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.

521A-521B. *(152A-152B.)* **Constitutional History of England (3-3)**
Evolution of the common law and the development of parliamentary institutions.

522A-522B. *(153A-153B.)* **Tudor and Stuart England (3-3)**
Semester I: The Age of the Tudors. Semester II: England during the Stuart Dynasty, 1603-1714.

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.

526A-526B. *(136A-136B.)* **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. *(138A-138B.)* **Diplomatic History of Modern Europe (3-3)**
Prerequisite: History 105A-105B.
Diplomatic relations of the various European states with European and non-European powers. Semester I: From the 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

530. *(171A.)* **Colonial America (3)**
Settlement of British colonies in North America and their development into a distinctive American civilization through modification of Old World institutions in the new environment. (Formerly numbered History 531A.)

531. *(171B.)* **The American Revolution (3)**
Development of colonial resistance to British rule after 1760, the War for Independence, the Confederation, and the Constitution of 1787. This course meets the requirements in United States Constitution. (Formerly numbered History 531B.)

532. *(172A-172B.)* **The United States, 1789-1828 (3)**
Political, economic, and social development of United States from Washington through John Quincy Adams. This course meets the requirements in United States Constitution. (Formerly numbered History 532A-532B.)

533A-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.

535A-535B. *(175A-175B.)* **The United States, 1901-1945 (3-3)**
The age of reform and the United States as leader of the free world.

536. *(175C.)* **The United States in the Nuclear Age (3)**
The United States since World War II.

537A-537B. *(181A-181B.)* **The Westward Movement (3-3)**
The American frontier: Expansion, exploration, settlement and building of the new states, with emphasis on frontier problems of defense, communications, finance, etc.; the development of cultural institutions. The causes, effects and results of the frontier experiences of the American people. This year course meets the graduation requirement in American history, institutions and ideals.

538A-538B. *(182A-182B.)* **The American Southwest (3-3)**
Semester I: Exploration, colonization and development of the Southwest under Spanish and Mexican rule. Emphasis on frontier institutions and Indian policy. Semester II: Anglo American penetration and acquisition of the Southwest. Themes such as boundary problems, mining, transportation, water, ranching and ethnic relations.

539A-539B. *(183A-183B.)* **Black American Civilization (3-3)**
Semester I: The Black minority group and its contributions and challenges to American civilization. African backgrounds, slavery, the abolitionists, the free Black. Semester II: Ghetto life, leadership personalities, and protest movements.

540. *(185.)* **Environmental History of the United States (3)**
The relationship of Americans to their environment from colonial times to the present with emphasis on how attitudes and values have affected personal behavior and public policy toward the land.

541A-541B. *(189A-189B.)* **California (3-3)**
Political institutions; social, cultural, economic and intellectual development; international background. Semester I: To 1850; Spanish and Mexican heritage. Semester II: 1850 to the present. History 541B will fulfill the requirement in California state and local government.

543A-543B. The City in American History (3-3) I, II
Development, character and role of city in American history. Through study of the city as a social-cultural organization and political-economic center, course will examine urban institutions, populations, problems, values, decision making, services.

544A-544B. *(176A-176B.)* **American Foreign Policy (3-3)**
Semester I: The development of American foreign policy from the Colonial Period to the First World War. Semester II: Developments from the First World War to the present. This year course meets the graduation requirements in American history, institutions, and ideals.

545A-545B. *(177A-177B.)* **Constitutional History of the United States (3-3)**
American constitutional history since the establishment of the federal government. This year course meets the graduation requirement in U.S. Constitution and in American history, institutions and ideals.

546A-546B. *(178A-178B.)* **Development of American Capitalism (3-3)**
The changes in agriculture, industry, labor, banking, transportation and commerce in a capitalist society with emphasis on the prominent personalities who made the changes possible.

547A-547B. *(179A-179B.)* **Intellectual History of the American People (3-3)**
Survey of American thought from 1620 to the present, focusing on the ideas of individuals, groups and movements in religion, politics, society, the arts and reform. Emphasis on liberal and conservative impulses and their role in the making of the modern American mind. This year course meets the graduation requirements in American institutions, U.S. Constitution, and California state and local government.

548A-548B. Social History of the United States (3-3)
Historical survey of American society emphasizing demographic trends, the changing role of the family, social structure, immigration patterns, religious movements, developments in education, the economy and entertainment.

Field (d). Latin America

551A-551B. *(161A-161B.)* **Mexico (3-3)**
Prerequisite: History 115A-115B or 315A-315B.
Colonial and modern Mexico. Semester II: Emphasis on the 20th century.

552A-552B. *(162A-162B.)* **History of Brazil (3-3)**
Semester I: Colony and empire, 1500-1889, with focus on Portuguese heritage, plantation society, African slavery and its abolition and development of classes and regions. Semester II: The 20th century, with focus on messianism and social banditry, creation of the industrial and military state, Afro-Brazilians, and the conquest and destruction of the Amazonian forest and Indians. Recommended for persons minoring in Portuguese.

553A-553B. *(163A-163B.)* **The Caribbean Area (3-3)**
Development of the Caribbean area with emphasis on the 20th century.

554. *(164.)* **The West Coast Nations of South America (3)**
The historical development of Chile, Bolivia, Peru and Ecuador with emphasis on race relations and social revolutions in the 20th century.

557. *(165A.)* **History of Latin American Popular Culture and Social Thought (3)**
Examination of the ways Latin Americans have historically viewed their cultures and societies from the dual perspective of elites and the masses.
Popular Culture—the Latin American self-image reflected in family relations, folklore, myth, legend, popular music and art and mass expression.

558A-558B. *(167A-167B.)* **Diplomatic History of Latin America (3-3)**
Origins of Inter-Americanism; relations among the Latin American nations; the origins and development of the American States; Latin America in World Affairs.

Field (e). South, Southeast and East Asia

561A-561B. *(191A-191B.)* **The Far East (3-3)**
Particular, but not exclusive, emphasis on Asian-Western relations. Semester I: Through the 19th century. Semester II: The 20th century.

562. *(196A.)* **Civilization of India: The Great Traditions (3)**
From earliest times to the eighteenth century including Hindu, Buddhist, and Muslim contribution to Indian society, changing political ideas and institutions, and historic trends in art and literature. (Formerly numbered and entitled History 562A, India—Hindu, Muslim and Modern.)

563. *(196B.)* **The Modern Indian Subcontinent (3)**
British conquest and colonial policy, Hindu and Muslim nationalism, Gandhi's significance, and the emergence of independent India, Pakistan, and Bangladesh. (Formerly numbered and entitled History 562B, India—Hindu, Muslim and Modern.)

564A-564B. *(190A-190B.)* **Southeast Asia (3-3)**
Semester I: Cultural traditions of Southeast Asian peoples. Indigenous institutions and the influence of China, India and Islam. Semester II: Southeast Asia in the modern world. Patterns of foreign stimulus and local response among the peoples of the area.

565. Revolution and Social Change in Asia (3)
Comparative study of contemporary problems in Asia emphasizing how indigenous peoples responded to the challenges of nationalism, reform, revolution, modernization, and neo-colonialism. Topics include social structure, education, peasant movements, urbanization, search for cultural identity, and national integration.

566. *(192.)* **Chinese Civilization (3) I**
Chinese internal history and institutions during the period of relative isolation; religions, philosophy, literature and the arts.

567A-567B. *(193.)* **Modern and Contemporary Chinese History (3-3)**
Semester I: Impact of the West on China's history and civilization, particularly in the 19th and early 20th centuries. Semester II: Selected historical problems of contemporary China since the development of Chinese Communist Party. Theory and practice of the party, Red Army, rural soviets, socialist economic and cultural systems, and revolutionary foreign policies.

569. *(194.)* **Japanese Civilization (3) I**
Japanese internal history and institutions during the period of indigenous development and Chinese influence including religions, philosophy, literature and the arts.

570. *(195.)* **Modern Japan (3)**
Japan's development as a modern state, particularly in the 19th and 20th centuries.

571A-571B. *(197A-197B.)* **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

573A-573B. *(156A-156B.)* **History of the Near East from the 7th Century to World War I (3-3)**
Semester I: Medieval Islam from the 7th century A.D. to the rise of the Ottoman Turks. Semester II: The Ottoman Empire to 1914.

574. *(157.)* **The Near East in the Twentieth Century, 1914 to Present (3)**
Analysis of sociopolitical and intellectual developments in the Near East during and after World War I.

575A-575B. *(158A-158B.)* **Africa (3-3)**
Semester I: Civilization of precolonial Africa both north and south of the Sahara from the advent of Islam to 1880. Semester II: Colonial and postcolonial Africa.

Field (g). Topical Subjects

581A-581B. *(101A-101B.)* **The Contemporary World in Historical Perspective (3-3)**
Trends and developments in the recent past which can contribute to an understanding of the problems of our age.

582A-582B. *(105A-105B.)* **War and Civilization (3-3)**
The political and social implications of warfare, of the development of military technologies, and of changing concepts of military organization. Semester I: Through the eighteenth century. Semester II: Napoleonic Wars to the present.

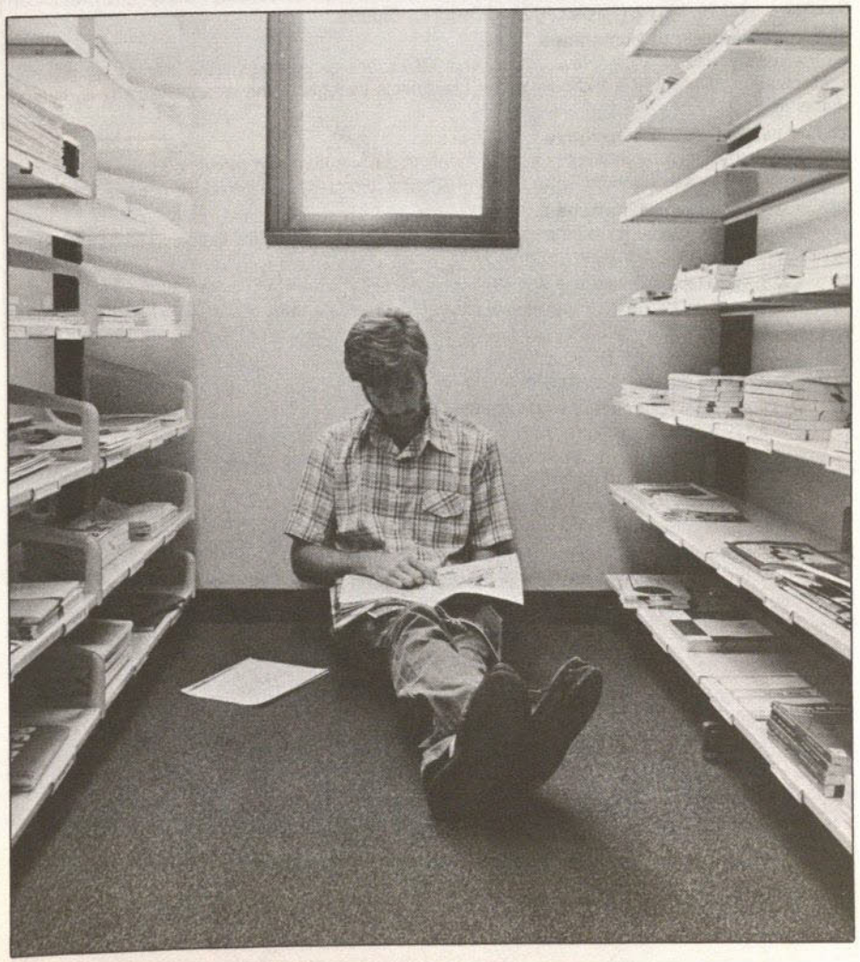
583A-583B. *(106A-106B.)* **The Quest for Peace (3-3)**
Prerequisite: Six units in history.
Historical analysis of man's efforts to control violence from the Greeks to the present.

584A-584B. *(107A-107B.)* **Science and Society (3-3)**
The historical development of the interaction between science and other aspects of society, including politics, economics, philosophy, religion and technology. Semester I: The rise of modern science. Semester II: Revolutions in scientific thought and 20th century problems in science and society.

596. Selected Studies in History (3)
Topics in the various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration and capitalism. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Humanities

Administered by the Dean of the College of Arts and Letters

Faculty

Faculty assigned to teach courses in humanities are drawn from departments in the College of Arts and Letters.

Offered by the College of Arts and Letters

Courses in humanities.
Major or minor work in humanities is not offered.

All classes are conducted in English.

LOWER DIVISION COURSES

For additional courses fulfilling general education requirements in the humanities, see offerings in American Studies, Art, Asian Studies, Classics, Drama, European Studies, History, Latin American Studies, Literature, Music, Philosophy, and Religious Studies.

101. Introduction to Humanities (3)
Preliminary investigation: How values and ideals are expressed in the literary, artistic and intellectual achievements of individuals and civilizations throughout the world. (Formerly numbered Humanities 201.)

102. Humanities in Perspective (3)
Integrated survey of contemporary movements in art, literature and mores, comparing American attitudes with traditional genres, values, and aesthetics. (Formerly numbered Humanities 202.)

130. *(30.)* The Jewish Heritage I (3)
Major Hebraic concepts of the Biblical and post-Biblical periods; their impact on Western civilization and their contemporary relevance.

131. *(31.)* The Jewish Heritage II (3)
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.

299. *(99.)* Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

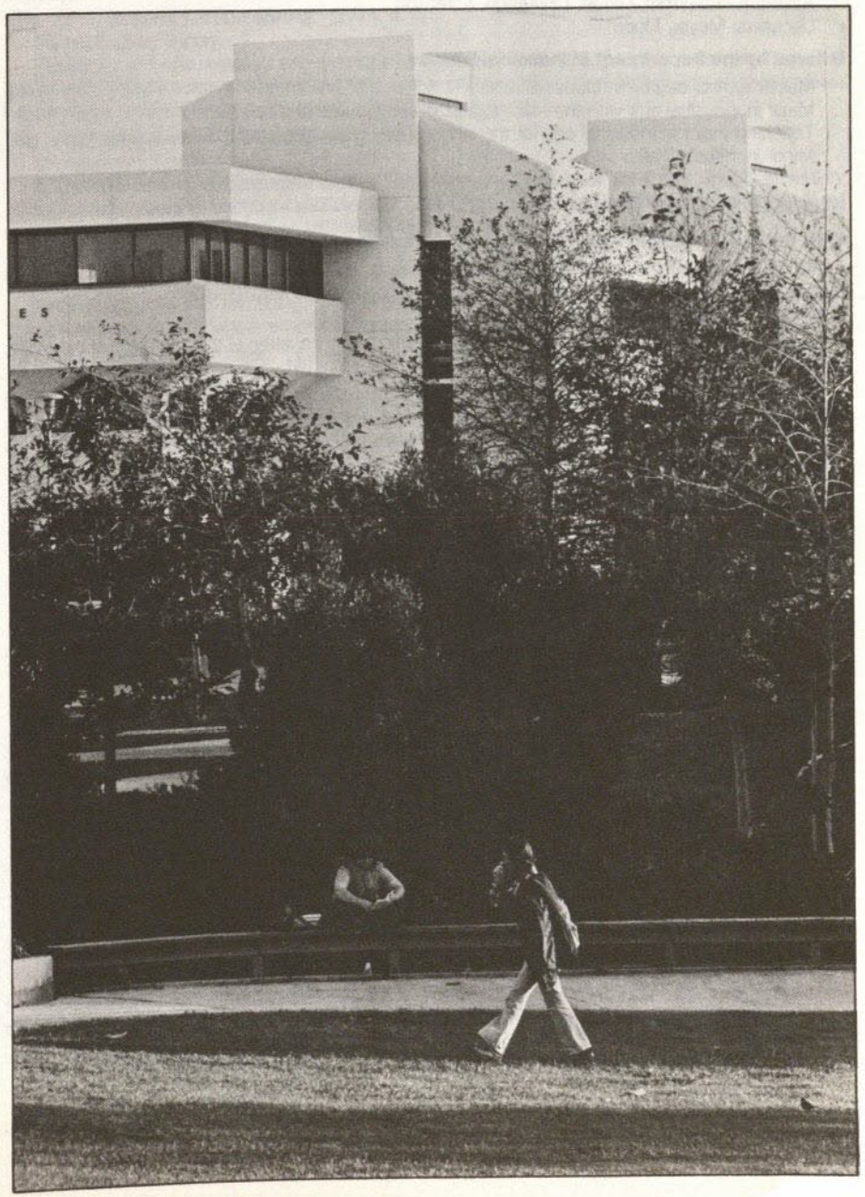
(Intended for Undergraduates)

357. Islamic Culture and Civilization (3)
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)
Prerequisite: Consent of the instructor.
Individual study. Maximum credit six units.



Industrial Arts

In the College of Professional Studies

Faculty

Emeritus: Ford, Luce, McLoney
Chair: Marsters
Professors: Anderson, Bailey, Dirksen, Hammer, Irgang, McMullen, Thiel
Associate Professors: Guentzler, Lybarger, Marsters, McEowen, Rasmussen
Assistant Professors: Ferree, Lawrence, Sorenson
Lecturers: Meyer, Moon

Offered by the Department of Industrial Studies

Master of Arts degree in industrial arts.
Major in industrial arts with the A.B. degree in applied arts and sciences.
Teaching major in industrial arts for the single subject teaching credential.
Minor in industrial arts.

Industrial Arts Major

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

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

A minor is not required with this major.

Preparation for the major. Industrial Arts 100 and 121 to be taken at the beginning of the major; four courses selected from Industrial Arts 115, 131, 140, 151, 161, 171 and 181. (17 units.)

Major. A minimum of 24 upper division units to include nine units in *each of two* of the following fields: industrial drawing, general metalworking, plastics, general woodworking, electricity-electronics, transportation, graphic arts, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 498 and 499.

Industrial Arts Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

The requirements for the industrial arts major for the single subject teaching credential are the same as the requirements for the A.B. degree in applied arts and sciences. In addition, Industrial Arts 492 must be taken.

Industrial Arts Minor

The minor in industrial arts consists of 23 units in industrial arts to include Industrial Arts 100, 121; six units selected from Industrial Arts 115, 131, 140, 151, 161, 171, 181; and 12 upper division units to include six 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.

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

LOWER DIVISION COURSES

100. *(11.)* **Introduction to Industrial Arts (2) I, II**
Required of all industrial arts majors during their first semester.
The history and philosophy of industrial arts with emphasis on the current status and development of the secondary school curriculum. Discussion of professional requirements, obligations and development.

106. *(6.)* **Survey of Electronics (3)**
Six hours of laboratory.
A nonmathematical survey of electronics, practical utilization of tools and equipment of today's industry.

115. *(15.)* **General Plastics (3) I, II**
Six hours of laboratory.
Production methods, mechanical and physical properties, composition of plastics. The basic processes: molding, casting, thermoforming, reinforcing and foaming.

121. *(21.)* **Industrial Drawing (3) I, II**
Six hours of laboratory.
Fundamental theories, procedures and techniques of modern industrial drafting; study and practice intended to develop skill and judgment in application to drafting as the universal language of industry.

131. *(31.)* **General Metalworking (3) I, II**
Six hours of laboratory.
Exploration of basic materials and methods employed by industry to produce metal products. The attainment of knowledge and skills involved in the primary fabrication techniques of sheet metal, bench metal, art metal, foundry, forging, machining, and welding.

140. *(40.)* **Introduction to Photography (3) I, II**
Six hours of laboratory.
A consideration of photographic optics and chemistry; nature of light and image formation; photographic emulsions, exposure and development. Composition and lighting. Not open to students with credit in Industrial Arts 540 or Journalism 150.

151. *(51.)* **General Woodworking (3) I, II**
Six hours of laboratory.
Introduction to wood technology and ecology; safe practices; fasteners; adhesives; abrasives; science of working with wood, emphasizing hand tools.

161. *(61.)* **Basic Electronics (3) I, II**
Six hours of laboratory.
Planning, designing, constructing, and experimenting to develop skills and acquire knowledge in the electronics field. Basic principles, their application to modern electronic equipment, and correct use of common hand tools and simple test equipment.

171. *(71.)* **Power Mechanics (3)**
Six hours of laboratory.
Introduction to the various forms of power transmission with emphasis on small gas engines and automotive preventive maintenance.

181. *(81.)* **General Graphic Arts (3) I, II**
Six hours of laboratory.
The theory and practice in planning, designing and processing in the various graphic reproduction activities involving type, stencils, paper, and other allied materials.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101.)* **Industrial Arts Crafts (3) I, II**
Six hours of laboratory.
Prerequisite: Previous industrial arts experience.
Emphasis on skills in the industrial arts crafts by laboratory experiences in such areas as plastics, jewelry, lapidary, leather and mosaics. Stress on creativity in design and in utilization of materials.

315. *(115.)* **Tooling for Plastics Production (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Design and use of basic tooling; dies for injection and compression molding, forms for reinforced plastics processes, and molds for thermoforming and casting.

321. *(121.)* **Intermediate Industrial Drawing (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Complex theories and techniques of graphic delineation. Activities selected to develop individual competence.

331. *(131.)* **Machine Tool Processes (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
Study of machine tools as a manufacturing medium emphasizing precision measurement, standards, tolerance and inspection methods.

341. *(141.)* **Intermediate Photography (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 140 or 540.
Exposure theory, sensitometry, contrast control, specialized development, and advanced studies of photographic lenses and equipment.

351. *(151.)* **Machine Woodworking (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 151.
Experience in the use of selected woodworking machines which offer opportunities for the development of construction activities in wood. Emphasis on creative design, sound safety practices, and techniques of personnel management.

361. *(161.)* **Intermediate Electronics (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 161.
Development of skills through planning, designing, constructing and experimenting. Emphasis on the application of advanced principles of electronics to the uses of power, transmission, communication, radio and television.

371. *(171.)* **Power Systems (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 171.
Power systems to include sources of power, power transmission, and its utilization. Emphasis on engine overhaul to include theory of operation, system design, and maintenance procedures.

381. *(181.)* **Intermediate Graphic Arts (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 181.
Activities in the various graphic arts with emphasis on new technology in the industry.

402. *(102.)* **Advanced Industrial Arts Crafts (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 301.
Advanced techniques of industrial arts crafts. Development of audiovisual aids, projects, and resource materials with emphasis on physical setting, organization, and other pertinent laboratory problems.

416. *(116.)* **Thermoplastics (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 315.
Composition and selection of materials; evaluation of physical and mechanical properties of various thermoplastics; special techniques for processing and production of thermoplastics.

422. *(122.)* **Architectural Drafting (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Architectural drafting, primarily in small home planning. Development of drafting skills and understanding of good contemporary home design.

432. *(132.)* **Welding Processes and Procedures (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
A study of the basic welding processes with emphasis on physical principles and properties, inspection methods and equipment operations.

443. *(143.)* **Advanced Problems in Photography (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Technical problems in photography.

444. *(144.)* **Color Photography (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Exposure and processing techniques as applied to current color films and papers in relation to the theory of color photography.

452. *(152.)* **Industrial Woodworking (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 351.
Course designed to increase professional skills, craftsmanship, advanced technical skills in equipment maintenance, patternmaking, design analysis, and upholstery.

462. *(162.)* **Advanced Electronics (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Development of advanced skills with application to industrial electronics. Techniques in the use of electronics test equipment and analysis of electronic devices.

464. *(164.)* **Basic Digital Computers (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Functions of circuitry as applied to switching, timing and pulse circuits. Basics of computer digital logic.

465. *(165.)* **Analog Computer Fundamentals (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Introduction to electronic analog circuits, with emphasis on instrumentation and measurement techniques.

472. *(172.)* **Power System Diagnosis and Tune-up (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Theory and application of various types of diagnostic testing equipment, with emphasis on trouble shooting and power system analysis.

482. *(182.)* **Advanced Graphic Arts (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Planning of activities and perfecting of skills in printing and publication; efficient operation of machines and equipment.

491. Manual Arts Therapy Clinical Training (6)
Prerequisite: Consent of department chairman and instructor.
Supervised experiences in manual arts therapy at various Veterans' Administration Hospitals and rehabilitation centers. Students will acquire, through observation and participation, clinical insight and experience in procedures and practices in the field. Two hundred forty hours of clinical training required.

492. *(192.)* **Teaching Methods in Industrial Education (3) I, II**
Prerequisite: Admission to Secondary Education Program.
Study of methodology needed to teach industrial subjects. It is recommended that this course be taken prior to student teaching.

496. Experimental Topics (1-4)
Refer to catalog statement on Experimental Topics on page 116. 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.)* **Senior Project (3) I, II**
Six hours of laboratory.
Prerequisite: Consent of instructor.
Each student will work on a project in a selected industrial arts activity area. Oral progress reports will be made and a final written report is required.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

503. *(103.)* **Advanced Industrial Crafts (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 402.
Advanced techniques of industrial crafts. Concentration on the design of craft projects with best utilization of materials. Development, in at least three areas specified by the instructor, of individual exhibits showing originality.

517. *(117.)* **Thermoset Plastics (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 315.
Composition and selection of materials; evaluation of physical and mechanical properties of various thermoset plastics, special techniques for processing and production of thermoset plastics.

523. *(123.)* **Industrial Arts Drawing (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 121. Practice in and analysis of modern industrial drafting techniques and theories.

533. *(133.)* **Applied Metal Forming Operations (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
Theory of conventional and high energy industrial forming processes augmented with laboratory forming experiences.

540. *(140.)* **Photography for Teachers (3)**
Six hours of laboratory.
Designed for more mature students to learn photographic skills useful in teaching. Not open to students with credit in Industrial Arts 140 or Journalism 150.

542. *(142.)* **Advanced Photography (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 140 or 540.
A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques.

553. *(153.)* **Advanced Woodworking (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 351.
Wood finishing, residential building construction techniques, and advanced machine operations.

563. *(163.)* **Industrial Electronics (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Advanced problems in industrial electronics circuit development, analysis, theory and application.

573. *(173.)* **Accessory Power Systems (3) I, II**
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Study of accessory power systems and technological innovations in education and power related industries.

583. *(183.)* **Industrial Arts Graphic Arts (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Advanced techniques in developing skills involved in graphic arts facilities.

594. *(194.)* **Recent Trends in Industrial Arts Education (2)**
Current trends and practices in the field of industrial arts in secondary education. There will be opportunity for individual work on related problems of interest to members of the class.

596. *(190.)* **Experimental Industrial Arts (1 or 2)**
Prerequisite: Consent of instructor.
Individual laboratory work on complex projects on an experimental basis. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Industrial Technology

In the College of Professional Studies

Faculty

Chair: Marsters
Advisers: Dirksen, Ferree, Hammer
Faculty assigned to teach courses in industrial technology are drawn from Industrial Studies.

Offered by the Department of Industrial Studies.

Major in industrial technology with the B.S. degree in applied arts and sciences.

Industrial Technology Major

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

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

This major in industrial technology may be planned with an emphasis in electronics technology, industrial sales, or manufacturing technology.

A minor is not required with this major.

Emphasis in Electronics Technology

Preparation for the major. Chemistry 100, 100L, 130, 130L; Economics 101 and 102; Industrial Arts 115, 121, 131, 140, 161, 171; Mathematics 103, 107, 119, 121, 122, 123, 137; Physics 124A-124B, 125A-125B. (60 units.)

Major. A minimum of 42 upper division units to include Industrial Technology 321, 361, 374, 495, 591 and 594; Industrial Arts 361, 462, 464, 465, 498, 563; and six units of electives selected with the approval of the adviser.

Emphasis in Industrial Sales

Preparation for the major. Business Administration 140; Economics 101 and 102; Industrial Arts 121; Mathematics 103, 107, 119, 120; Physics 124A-124B, 125A-125B; and 15 units selected from Industrial Arts 115, 131, 140, 151, 161, 171 and 181. (47 units.)

Major. A minimum of 42 upper division units to include Business Administration 370 and three units selected from Business Administration 376, 473, 474; Industrial Technology 495, 591, 592, 593, 594; a minimum of 18 upper division units in applicable industrial arts and/or industrial technology courses in three technical areas (six units in each area), and three units of electives selected in consultation with the adviser.

Emphasis in Manufacturing Technology

Preparation for the major. Business Administration 140; Economics 101 and 102; Industrial Arts 121, 161; Mathematics 103, 119, 121, 122, 123; Physics 124A-124B, 125A-125B, and 12 units selected from Industrial Arts 115, 131, 140, 151, 171 and 181. (50 units.)

Major. A minimum of 51 upper division units to include Business Administration 360 and six units selected from 350, 351, 352, 461, 462; Industrial Technology 321, 361, 374, 495, 591, 592, 593, 594; a minimum of 18 units in applicable industrial arts and/or industrial technology courses in two technical areas (nine units in each area) selected in consultation with the adviser.

UPPER DIVISION COURSES

(Intended for Undergraduates)

321. *(121.)* **Industrial Design Problems (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
A study of blueprint reading, the design of jigs, fixtures and dies, and the application and solution of power transmission problems in the industrial environment.

323. *(123.)* **Technical Illustration (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Theory and techniques of axonometric projections with emphasis on isometric drawings and their application to technical illustration.

326. *(122.)* **Commercial Building Layout (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 422.
Layout of light and medium commercial building using concrete, steel and wood construction.

334. *(134.)* **Technology of Ferrous and Nonferrous Metals (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
Applied metallurgy dealing with physical properties, heat treatments, testing and industrial applications.

354. *(154.)* **Wood Processes and By-Products (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Study of wood by-products manufactured from mascerated wood fibres, laminates, dielectric glue equipment and other processes.

361. *(161.)* **Industrial Controls (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 161.
Study of industrial controls, including the electrical and electronic systems used in automated manufacturing methods. Emphasis on circuit functions, systems applications, and recent advancements in control techniques.

374. *(174.)* **Fluid Power (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 171.
Study of fluid power, including hydraulic and pneumatic systems. Emphasis on circuit design and applications.

384. *(184.)* **Printing Processes and Operations (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Recent advancements in the technology of graphic arts—study of work related to various printing processes.

418. *(118.)* **Plastic Fabrication and Finishing (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Methods of plastic fabrication, including composite structure and assembly methods in light and heavy industry. Composition of finishes and methods of finishing plastic products and finishing with plastics. (Formerly numbered Industrial Arts 118.)

423. *(124.)* **Technical Illustration (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Theory and application of single- and multiple-point perspectives. Shading and rendering techniques as applied to presentation-type drawings will also be emphasized.

435. *(135.)* **Quality Assurance (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
A study of quality control systems in manufacturing; dimensional, nondestructive and statistical systems are emphasized.

455. *(155.)* **Wood Inspection and Testing (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 452.
Macro and micro wood identification, chemical and physical testing of wood and wood revived products.

485. *(185.)* **Photo-offset Lithographic Principles and Operations (3)**
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Study and experimentation in the field of offset lithography.

490. *(190.)* **Supervised Field Experience (3-6)**
Prerequisite: Sponsorship by a full-time Industrial Studies Department faculty member.
Supervised industrial experience in related occupational field. Specific assignments to be arranged in consultation with the adviser and selected industries. Maximum credit nine units.

495. *(195.)* **Plant Layout and Material Handling (3)**
Study of education and industrial plant layout for expeditious flow of materials.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

591. *(191.)* **Industrial Safety (3)**
The integration of accident prevention into management functions. The organization of training and safety programs emphasizing the detection and control of hazards, analysis of data, investigations and environment modifications for safety effectiveness.

592. *(192.)* **Industrial Materials (3)**
A survey of various types of manufacturing materials used in industry. Evaluation of materials composition, physical and mechanical properties with emphasis on processing requirements and product design.

593. *(193.)* **Manufacturing Processes (3)**
A survey of manufacturing processes used in industry. Evaluation of forming, shaping, assembly and finishing processes as they relate to characteristics of material and product design.

594. *(194.)* **Industrial Proposals and Specifications (3)**
Research, practice and investigation in the planning and writing of industrial proposals and plant manufacturing systems specifications.

Interdisciplinary Programs

In the College of Arts and Letters **

For information on additional interdisciplinary programs, refer to this section of the catalog under the headings of American Studies, Asian Studies, European Studies, Family Studies and Consumer Sciences (Child Development), Humanities, Latin American Studies, and Social Science.

African Studies Minor

Dr. James N. Kerri, Afro-American Studies, is adviser for this minor.

The minor in African Studies consists of a minimum of 15 units, 12 of which must be upper division, to include History 575A and 575B, Humanities 158; and six units from the following courses in any two departments: Anthropology 449*, 479*; Economics 469*; Geography 335*, 589*; Political Science 564; and Religious Studies 340*.

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

* Additional prerequisites may be required for these courses.

Minor in Environment and Society

Dr. Douglas Strong, Department of History, and Dr. Warren Johnson, Department of Geography, are advisers for this minor.

The minor in environment and society consists of a minimum of 27 units to include Biology 100, Economics 101 and 102 or 303 and 304, Geography 101 or 102; nine units selected from Biology 320 or 420, Economics 453 or 454, and Geography 370 or 371; and six units selected from Anthropology 428*, Biology 320, 420, 525, 528, Economics 453, 454, Geography 370, 371, 574, 575*, 576, History 540, Political Science 334, Sociology 550*.

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

* Additional prerequisites required for these courses.

Jewish Studies Minor

Dr. Ita G. Sheres, Department of Literature, is adviser for this minor.

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

The minor in Jewish Studies consists of 18 to 22 units to include Humanities 130 and 131, or Hebrew 101, 102 and 299; and 12 units selected from Comparative Literature 505 (English 505), 525, 526, 571 (Legend and Mysticism), 577 (Kafka), English 522 (Jewish-American Writers), History 496 (Jewish History), Philosophy 336*, 535*, Religious Studies 496 (Hasidism and Jewish Mysticism), 580* (Martin Buber). Relevant courses not here listed may apply to the minor with approval of the Coordinator of Jewish Studies. The 12 upper division units are to be taken in no more than two departments.

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

* Additional prerequisites required for these courses.

** The Liberal Studies Major is administered by the Dean of the University College.

Liberal Studies Major

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

The liberal studies major provides two options for students wishing to follow degree programs involving more than one discipline or area of study. Option 1 offers an opportunity to combine three disciplines in a focused program of study; Option 2 permits a more general education with courses chosen from four broad groups and is designed mainly for students planning to enter elementary education.

Option 1. Liberal Studies in Three Disciplines

The student selects three disciplines from departments participating in this liberal studies option to provide a cohesive plan not otherwise provided in the regular programs of the university. Approval of the plan must be secured from each of the involved departmental advisers and from the Dean of The University College **prior to completion of 90 semester units.** Information regarding participating departments and procedures for application are available from The University College office.

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

Major. A minimum of 36 upper division units selected from three disciplines, with no fewer than nine units from any one discipline. The liberal studies major is governed by the regulations of the liberal arts and sciences if two of the three fields selected are offered only in the liberal arts and sciences curriculum. If two of the three fields selected are in the applied arts and sciences curriculum, then the program is governed by the regulations of that curriculum.

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

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

A minor is not required with this major.

The Liberal Studies Major Option 2 meets all the requirements for the multiple subjects/diversified major as specified in the Ryan Bill, and is recommended for prospective elementary teachers.

Students must consult the Liberal Studies Guide (available at Aztec Shops) for a current description of the program and courses approved for the major.

Students selecting this major are required to take courses in the four multiple subject groups of knowledge identified as follows (not more than 30 units are acceptable from any one department or group):

Group A: English and Speech
Group B: Mathematics and Science
Group C: Social Sciences
Group D: Humanities and Fine Arts

Preparation for the major (which can with careful planning include general education) and the major together require 90 units of course work in the four areas. Students must select emphases and meet the requirements for specific knowledge and competencies as set down in the Liberal Studies Guide.

Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education. The following course work is required for acceptance into the education program and may be included in the Liberal Studies Major unless otherwise noted:

Mathematics 210A-210B
Health Science and Safety 101 or 320
Music 102
Physical Education 141 (may be taken in lieu of one of the physical education units required for graduation)
Natural Science 210A (strongly recommended)

Other students who wish to take this major must consult the Dean of the University College to secure program approval.

Middle East Studies Minor

Dr. James N. Kerri, Afro-American Studies, is adviser for this minor.

The minor in Middle East studies consists of a minimum of 15 units, 12 of which must be upper division, to include Humanities 157 or 357, Religious Studies 340*; six units from History 573A*, 573B* and 574*; and three units from Anthropology 474*, Art 566*, Comparative Literature 535, Economics 469*, Geography 335* and Political Science 563.

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

* Additional prerequisites may be required for these courses.

Russian and East European Studies Major

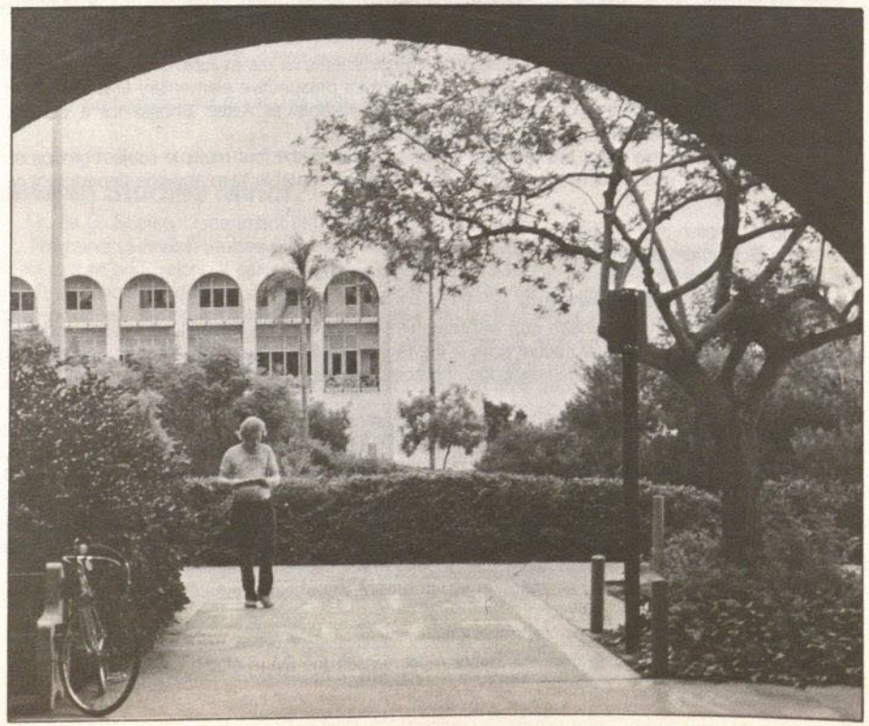
With the A.B. Degree in Liberal Arts and Sciences

Dr. Vytas Dukas, Department of Germanic and Slavic Languages and Literatures, is adviser for this major.

Preparation for the major. Russian 101, 102, 201, 202, or equivalent. (16 units.) Lower division prerequisites for the upper division courses to be taken in the major. (3-9 units.)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major.

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 301, 302, 305A-305B, 555A-555B, 561A-561B, 563, 570, 580, 581; and six units of electives selected with the approval of the adviser.



Italian

In the College of Arts and Letters

Faculty

Professors: Vergani, G., Vergani, L.
Lecturers: Benzie, Bussino

Offered by the Department of French and Italian Languages and Literatures

Minor in Italian.

Italian Minor

The minor in Italian consists of a minimum of 15 units in Italian, nine units of which must be in upper division courses in the language.

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

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Italian may be counted as the equivalent of Italian 101; three years the equivalent of Italian 102; and four years the equivalent of Italian 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

LOWER DIVISION COURSES

Native speakers of Italian will not receive credit for taking lower division courses in Italian except with advance approval from the department.

101. *(1.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Pronunciation, oral practice, readings on Italian culture and civilization, essentials of grammar. Not open to students who have completed three years of high school Italian.

102. *(2.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Prerequisite: Italian 101.
Continuation of Italian 101. Not open to students who have completed four years of high school Italian.

201. *(3.)* **Intermediate (4) I, II**
Prerequisite: Italian 102.
A practical application of the fundamental principles of grammar. Reading in Italian of cultural material, short stories, novels or plays; oral and written practice.

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. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

212. *(11.)* **Conversation (2) I, II**
Prerequisite: Italian 201 or 211, or four years of high school Italian.
Continuation of Italian 211. Not applicable for the foreign language requirement for the A.B. degree in Liberal Arts and Sciences.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. 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.

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UPPER DIVISION COURSES

(Intended for Undergraduates)

All upper division Italian courses are taught in Italian unless otherwise noted.

301. *(101A.)* **Advanced Oral and Written Composition (3)**
Prerequisite: Italian 201.
Grammar review. Reading of modern Italian prose, with written reports and oral discussions in Italian. (Formerly numbered Italian 311.)

305A-305B. *(102A-102B.)* **Italian Literature (3-3)**
Prerequisite: Italian 201.
Important movements, authors and works in Italian literature from Middle Ages to present. (Formerly numbered Italian 321A-321B.)

331. *(144A-144B.)* **Italian Literature in Translation (3)**
Works of outstanding Italian writers in English translation. May be repeated with new content. Maximum credit six units. (Formerly numbered Italian 331A-331B.)

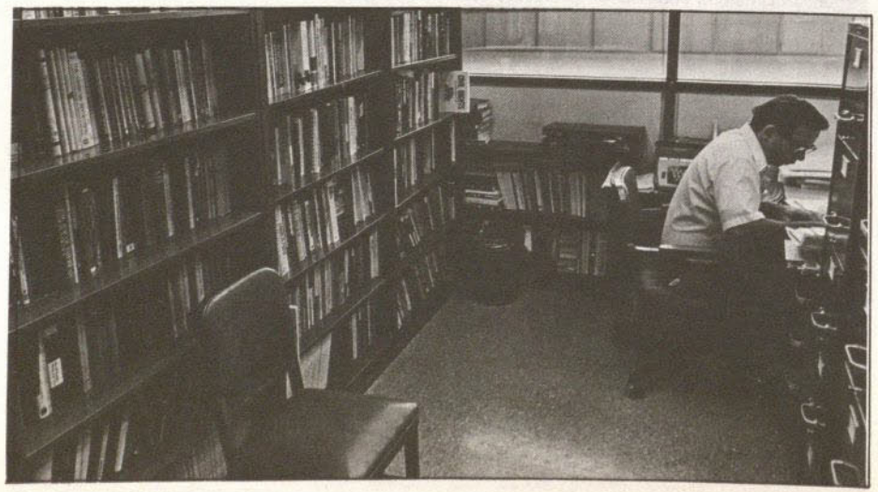
340. Intensive Italian for Reading (3) Cr/NC
Prerequisites: Italian 101 and 102.
Reading, translation and discussion of Italian texts (fiction, essays, articles, etc.) for upper division and graduate students. Taught in English. (Not applicable for graduation requirement in foreign language or for majors or minors.)

401. *(103A-103B.)* **Dante and the Divine Comedy (3)**
The poet, his cultural background, and his political-historical mission. Taught in English. (Formerly numbered Italian 401A-401B.)

411. *(104B.)* **Literature of the Italian Renaissance (3)**
Literature of the 15th and 16th centuries as presented in works of Poliziano, Lorenzo de'Medici, Pulci and Boiardo; Machiavelli, Ariosto, Michelangelo, Cellini and Tasso. Taught in English.

496. *(185.)* **Selected Topics (1-4)**
Topics in Italian language, literature, culture and linguistics. Conducted in English or in Italian. Maximum credit eight units.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Italian 301 and 305A or 305B.
Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in Italian available in any given semester.



Japanese

In the College of Arts and Letters

Faculty
Assistant Professor: Ogawa
Lecturer: Rodriguez

Offered by the Department of Classical and Oriental Languages and Literatures

Courses in Japanese.
Major or minor work in Japanese is not offered.

LOWER DIVISION COURSES

Native speakers of Japanese will not receive credit for taking lower division courses except with advance approval from the department.

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

202. *(2.)* **Elementary (4) II**
Four lectures and one hour of laboratory.
Prerequisite: Japanese 101.
Continuation of Japanese 101. Preparation for Japanese 303.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

303. *(103.)* **Readings in Japanese (4) I**
Prerequisite: Japanese 202.
Reading of modern Japanese short stories and essays. Composition and advanced conversation.

304. *(104.)* **Readings in Japanese (4) II**
Prerequisite: Japanese 303.
Continuation of Japanese 303, with readings in poetry, mainly Haiku.

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

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

Journalism

In the College of Professional Studies

Member of American Association of Schools and Departments of Journalism

Faculty

Emeritus: Julian, Wimer
Chair: Whitney
Professors: Buckalew, Holowach, Odendahl, Sorensen
Associate Professor: Whitney
Assistant Professors: Hartung, Spevak, Wulfemeyer

Offered by the Department

Major in journalism with the A.B. degree in liberal arts and sciences.
Teaching major in journalism for the single subject teaching credential in English/journalism.
Minor in journalism.

Journalism Major

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

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

A total of 36 units in journalism may be counted for graduation, of which a maximum of 12 lower division units in journalism may apply. A minor is not required with this major.

Emphasis in Advertising

Preparation for the major. Journalism 120 and 150. (6 units.)

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

Major. A minimum of 24 upper division units in journalism to include Journalism 460, 461 or 463, 466, 480, 500, 502; and six units of electives.

Emphasis in Magazine

Preparation for the major. Journalism 120 and 150. (6 units.)

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

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 326, 441, 443, 502 and nine units of electives selected from Journalism 340, 450, 451, 460, 490 (internship with a magazine), 522 and 529.

Emphasis in Mass Communications

Preparation for the major. Journalism 100, 120 and Sociology 101, 201 and Mathematics 103. (15 units.)

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

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 500 or 508, 502, 503, 509, 522 or 529 and six units of electives.

Emphasis in News-Editorial

Preparation for the major. Journalism 120, 150. (6 units.)

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

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 326, 502, 522 or 529, and 12 units of electives selected from 330, 425, 441, 450, 470, 490 (internship with a news medium), 500, 503, 522, 526, 529.

Emphasis in Photojournalism

Preparation for the major. Journalism 120 and 150. (6 units.)

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

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 450, 451, 470, 475, 502, and six units of electives.

Emphasis in Public Relations

Preparation for the major. Journalism 100, 120, 150. (9 units.)

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

Major. A minimum of 24 upper division units in journalism to include Journalism 320, 460, 470, 480, 481, 583, 585, and three units of electives selected from Journalism 490 (internship in public relations), 500, 502; Psychology 342.

Emphasis in Radio-TV News

Preparation for the major. Journalism 120 and 150. (6 units.)

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

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 Major

For the Single Subject Teaching Credential in English/Journalism

All candidates for a teaching credential must complete all requirements as outlined in the section of this catalog on the School of Education.

A major in journalism selected from any one of the emphases in journalism may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Credential Requirements. A minimum of 45 units selected from courses in the following content areas:

Literature: 12 units selected from Comparative Literature 270A, 270B, 561, 562, 563, 570, 571; English 250, 260A-260B, 505, 525, 526, 533; Journalism 100, 502, 503;

Composition: 12 units selected from English 100, 200, 280, 500, 582; Journalism 120, 320, 425, 441, 470, 522, 529;

Language: nine units selected from Journalism 326, 443, 460; Linguistics 101, 510, 520, 524; Speech Communication 530, 535;

Oral Communication: six units selected from Journalism 474, 475; Speech Communication 103, 104, 105, 111A, 111B, 135, 391;

Advising School Publications: four units selected from Journalism 150, 340, 499;

Competency in News-gathering and Reporting: two units selected from Journalism 330, 490.

Journalism Minor

The minor in journalism consists of a minimum of 15-18 units selected from one of the following areas:

Advertising: 18 units to include Journalism 100, 120, 460, 461, 463 and 466.

Magazine: 18 units to include Journalism 120, 150, 441, 443, 450 and 502.

Mass Communications: 18 units to include Journalism 120, Sociology 101; Journalism 502, 508, and six units from Journalism 500, 503, 505.

News-Editorial: 15 units to include Journalism 120, 320, 326, and six units from Journalism 502, 522 or 529.

Photojournalism: 18 units to include Journalism 120, 150, 441, 450, 451 and 502.

Public Relations: 18 units to include Journalism 100, 120, 480, 481, 583 and 585.

Radio-TV News: 15 units to include Journalism 120, 470, 474 or 475, 502, and three units from 490, or a repeat of either 474 or 475.

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

LOWER DIVISION COURSES

100. *(49.)* **Introduction to Mass Communications (3) I, II**

The work of mass media, their interrelationships, and the services they perform for society; common problems and responsibilities of the mass media; training and background needed in different media.

120. *(51A.)* **News Reporting (3) I, II**

One lecture and four hours of laboratory.

Prerequisite: Sophomore standing and ability to type.

Study of reporting techniques, with intensive laboratory practice in gathering, evaluating, and writing the basic types of news stories.

150. *(50.)* **News and Feature Photography (3) I, II**

One lecture and four hours of activity.

An elementary course designed primarily for students of journalism and public relations; experience with professional photographic equipment and film processing; contact and projection printing; emphasis on composition and news value of pictures.

299. *(99.)* **Experimental Topics (1-3)**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

320. *(51B.)* **Advanced News Reporting (3) I, II**

One lecture and four hours of activity.

Prerequisite: Grade of C or better in Journalism 120.

Intensive laboratory practice in writing the more complex types of news stories.

326. *(151.)* **News Editing (3) I, II**

One lecture and four hours of activity.

Prerequisite: Journalism 320.

Editing copy, writing headlines, making up pages, handling telegraph copy.

330. *(192.)* **Newspaper Production (3) I, II**

Prerequisite: Journalism 320.

Includes techniques of reporting, editing, printing and photography relevant to the production of newspapers, with emphasis on mechanical, photographic, computerized and electronic processes.

340. *(193.)* **Magazine Production (3) I, II**

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 department magazine and other publications. Maximum credit six units.

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.

443. *(103.)* **Magazine Editing (3)**

Mechanics of the editorial process in magazines, with emphasis on industrial and business publications; selection and preparation of editorial material; picture selection, cropping, captioning; graphic production processes; layout; preparation of dummies; special purpose booklets and magazines.

450. *(150.)* **Advanced News and Feature Photography (3)**

One lecture and four hours of laboratory.

Prerequisite: Journalism 150.

Techniques for achieving the technical and story-telling quality in photojournalism.

451. Photojournalism (Print Media) (3)

One lecture and four hours of laboratory.

Prerequisites: Journalism 120 and 150.

Documentary and color pictorial journalism for communicating news events with words and pictures, including a creative-interpretative approach.

460. *(153.)* **Newspaper Advertising (3) I, II**

Principles of advertising for newspapers and trade papers. Emphasis on copywriting, layout, typography and production. Use of consumer and market surveys, and advertising readership studies in planning local advertisers' sales programs and promotions.

461. *(154.)* **Newspaper Advertising Practice (3)**

Prerequisite: Journalism 460.

Practical work in servicing accounts in advertising on campus media. Supervised work in preparation of copy and layout. Copy-testing methods emphasized. Maximum credit six units.

463. *(157.)* **Advertising Copy, Layout and Production (3)**

Prerequisite: Credit or concurrent enrollment in Journalism 460.

Preparation of copy, layout planning, and production of advertising.

465. *(159.)* **Advertising Research and Analysis (3)**

Prerequisite: Journalism 460.

Evaluation and use of data collecting and measurement for print media advertising. Cases and problems, with emphasis on quantitative and qualitative characteristics of print advertising.

466. *(156.)* **Advertising Campaigns (3)**

Prerequisite: Journalism 460 or Telecommunications and Film 540.

Cases and problems dealing with advertising campaigns and decision making involving copy themes, artwork, and media imagery.

470. *(104.)* **Radio and Television News Writing and Editing (3) I, II**

One lecture and four hours of laboratory.

Gathering, writing and editing news in special forms required by radio and television. This course not open to students with credit in Telecommunications and Film 310.

474. *(124.)* **Radio News Production (3) I, II**

One lecture and eight hours of laboratory.

Prerequisite: Journalism 470 or Telecommunications and Film 310.

Radio news production with experience in writing, editing national wire copy and local copy, preparing tapes and on-the-spot recordings of news events for programs produced over the campus radio station and local commercial radio stations. Maximum credit six units.

475. *(125.)* **Television News Production (3) I, II**

Two lectures and six hours of laboratory.

Prerequisite: Journalism 470 or Telecommunications and Film 310.

Television news production with experience in photographing news events, processing and editing film, and writing copy to film for programs produced over the campus and local commercial television stations. Maximum credit six units.

480. *(180.)* **Public Relations (3) I, II**

Principles, methods and objectives in the field of public relations; evaluation of the "publics" of institutions and industry; case studies of public relations problems.

481. *(181.)* **Public Relations Techniques and Media Usage (3) I, II**

One lecture and four hours of laboratory.

Prerequisite: Journalism 480.

Practical use of public relations techniques with emphasis on media usage.

490. *(191.)* **Internship in Journalism (1-3) I, II Cr/NC**
Prerequisites must be consistent with nature of internship:
Advertising Emphasis: Journalism 460.
Magazine: Journalism 441, 443.
News-Editorial: Journalism 326.
Photojournalism: Journalism 450.
Public Relations: Journalism 120, 481.
Radio-TV News: Journalism 470.
Prearranged and supervised work on local magazines, city and county newspapers, radio and television stations, and on public relations, publicity, and advertising staffs of civic and business groups. Maximum credit six units with no more than three units in any one semester.

496. Experimental Topics (1-3)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

500. *(121.)* **Current Problems in Mass Communications (3) I, II**
Forces affecting American mass communications today: Government restrictions, economics, pressure groups, censorship, mechanical developments, interrelationships of the media and society; professional ethics.

502. *(102.)* **Law of Mass Communications (3) I, II**
Libel, defamation, privacy, censorship, advertising laws, postal regulations, and constitutional guarantees affecting press, radio, television; rights and responsibilities of communicators in reporting public affairs.

503. *(117.)* **History of Mass Communications (3)**
American journalism from colonial times to the present, with special attention to radio and other mass media which have entered the news and entertainment field; the relation of their development to society.

505. *(118.)* **The Foreign Press (3)**
The four theories of the press. Flow of international news. Analysis of the foreign media. Problems of propaganda, governmental control, language, and economic support.

508. *(162.)* **Mass Communications and Society (3)**
Prerequisite: Sociology 101.
Social factors underlying nature, functions of mass media. Theories, models, research in media as culture carriers, as opinion shapers, and in relation to government.

509. *(177.)* **Research Methods in Mass Communications (3)**
Prerequisite: Sociology 201.
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)**
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)**
Prerequisite: Journalism 326.
Principles of typography, page layouts, and use of pictorial material; selection, evaluation, editing, and display of news.

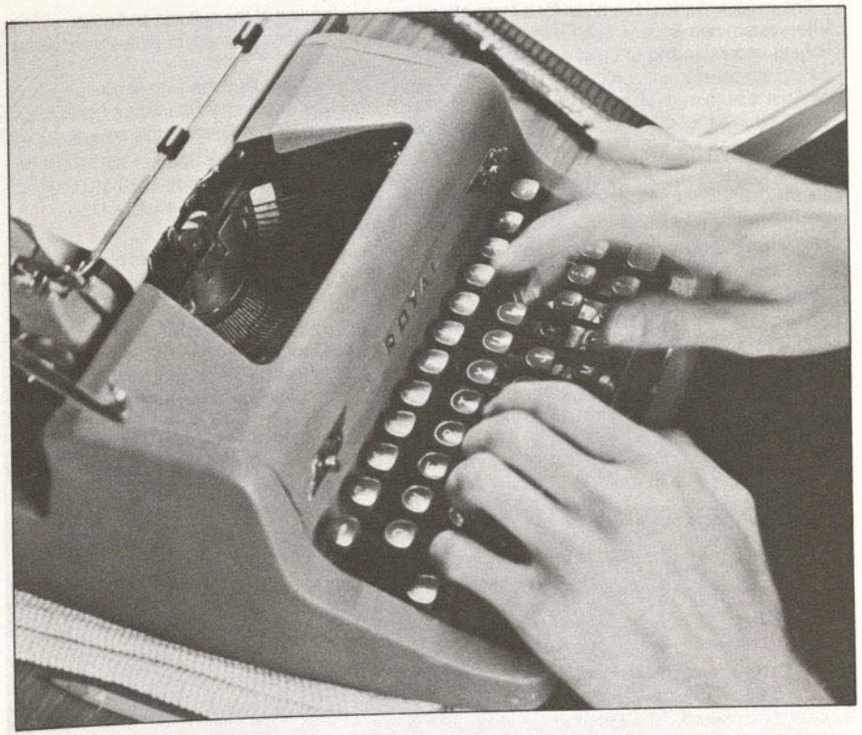
529. *(197.)* **Investigative Reporting (3)**
One lecture and four hours of laboratory.
Prerequisite: Journalism 320.
Development of articles of substance and depth in specialized fields. Research, analysis, and interpretation of complex issues in the news. Maximum credit six units.

583. *(183.)* **Problems in Public Relations (3)**
Prerequisite: Journalism 481.
Current public relations problems of industry, public agencies and other institutions.

585. *(184.)* **Public Relations Practices (3) I**
Prerequisite: Journalism 481.
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. (Formerly numbered Journalism 485.)

GRADUATE COURSES

Refer to the Graduate Bulletin.



Latin

Refer to section on Classics.

Latin American Studies

In the College of Arts and Letters

Faculty

Latin American Studies is administered by the Latin American Studies Committee. The program draws upon courses offered by faculty in the Departments of Anthropology, Art, Economics, Geography, History, Mexican-American Studies, Political Science, and Spanish and Portuguese Languages and Literatures. Professor Ernst C. Griffin is the undergraduate adviser.

Offered by Latin American Studies

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

Latin American Studies Major

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

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

The major provides (1) a basis for a more effective understanding of the cultures and governments of the western hemisphere; and (2) a basic education and training for a business or professional career involving understanding of Latin America.

High school students preparing to enter this program should include in the high school course of study not less than three years of study in one foreign language, preferably Spanish or Portuguese. Proficiency in either of these languages is indispensable to a successful career in this area of study.

Preparation for the major. Portuguese 101, 102, 201, 202, 211, 212, or Spanish 101, 102, 201, 202, 211 and 212 with a minimum grade point average of 2.0 for all work attempted (20-22 units); 12 units selected from Anthropology 101, Economics 101 and 102, Geography 101, History 115A-115B, Latin American Studies 101, Political Science 101 and 103.

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 36 upper division units selected from courses in anthropology, art, economics, geography, history, Latin American studies, Mexican-American Studies, political science, Portuguese, and Spanish, with not less than 12 units in one field and nine in each of two other fields. At least 33 units must be in courses having Latin American content. The 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 425, 442, 443, 461, 470, 475, 476, 477; Art 561, 562; Economics 336, 365, 464, 483; Geography 323, 324, 498 (when relevant); History 315A-315B, 496 (when relevant), 551A-551B, 552A-552B, 553A-553B, 554, 557, 558A-558B; Mexican-American Studies 333, 335, 376; Political Science 561, 566, 567, 568, 582; Portuguese 485 (when relevant), 535; Spanish 504A-504B, 515A-515B, 520, 522, 524, 570, 571, 572, 596 (when relevant); and 499 (when relevant) taken in one of the departments listed above.

LOWER DIVISION COURSE

101. Latin American Heritage (3)

Introduction to Latin American cultures and peoples from an interdisciplinary perspective. (Formerly numbered Latin American Studies 120.)

UPPER DIVISION COURSES

(Intended for Undergraduates)

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.

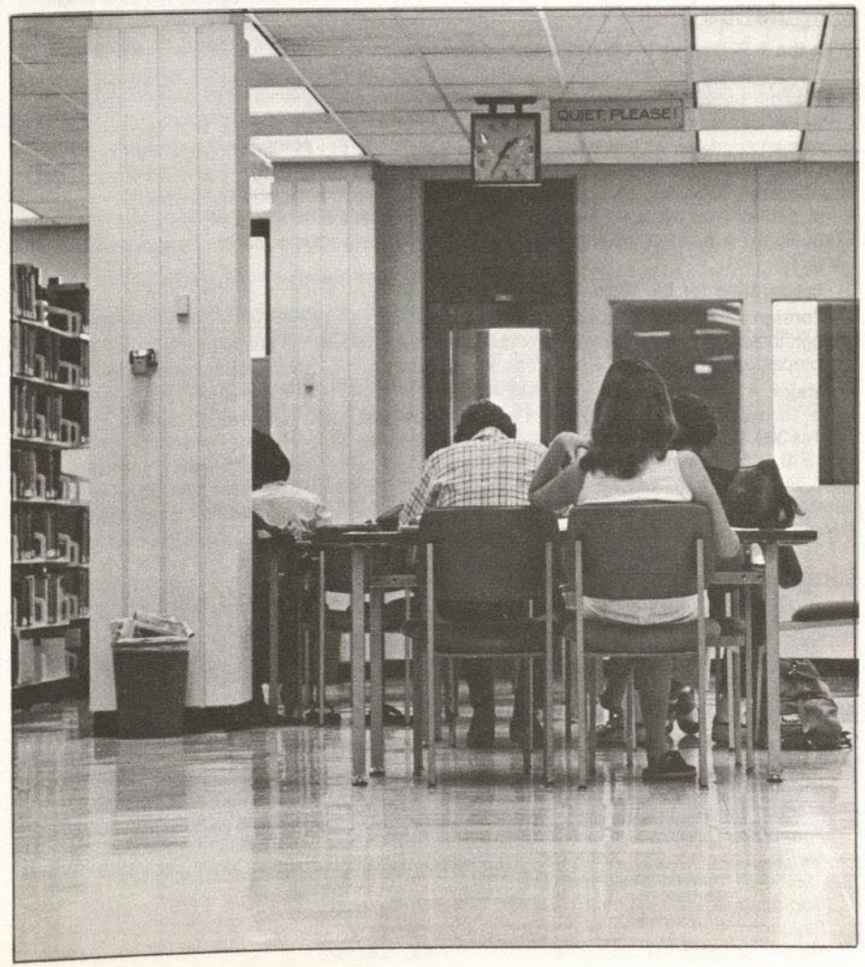
UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

580. Special Topics (1-4)

Prerequisite: Six upper division units in Latin American content courses.

Interdisciplinary study of selected Latin American topics. Credit will vary depending on the scope and nature of the topic. Whenever appropriate, the course will be taught by a team of instructors representing two or more disciplines. May be repeated with different content. Maximum credit eight units.



Linguistics

In the College of Arts and Letters

Faculty

Emeritus: Tidwell
Chair: Drake
Professor: Frey
Associate Professors: Donahue, Drake, Elgin, Seright, Underhill
Assistant Professor: Webb
Lecturers: Fischer, Kaplan

Offered by the Department

Master of Arts degree in linguistics.
Major in linguistics with the A.B. degree in liberal arts and sciences.
Teaching major in linguistics for single subject teaching credential in English.
Minor in linguistics.
Certificate in applied 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 in the section of this catalog on "Graduation Requirements."

Students majoring in linguistics must complete a minor in another field approved by the departmental adviser in linguistics. Recommended fields include anthropology, ethnic studies, a foreign language, history, journalism, literature, philosophy, psychology, public administration and urban studies, sociology, speech communication and speech pathology and audiology.

In addition, the demonstration of a reading competence in a second language is required. Competence is normally demonstrated by a passing score on the Modern Language Association Language Test.

Preparation for the major. Linguistics 101. (3 units.)

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

Major. A minimum of 24 upper division units is required: 15 of these must be in Linguistics (and those 15 must include Linguistics 521 and 522); at least nine units selected from Afro-American Studies 360, 362, 363; American Studies 501; Anthropology 304, 410, 511; French 401, 431; German 505, 510, 515; Journalism 508, 509; Philosophy 521, 522, 531; Russian 570, 580, 581; Sociology 422, 424, 440, 512, 525, 548, 557; Spanish 548, 549; Speech Communication 391, 496 (when appropriate), 530, 535; Speech Pathology and Audiology 305. Substitutions may be made at the discretion of the undergraduate adviser.

Linguistics Major

For the Single Subject Teaching Credential in English

For a description of the single subject teaching credential in English with a major in linguistics, refer to this section of the catalog under English.

Minor in Linguistics

The minor in linguistics consists of a minimum of 15 units, 12 of which must be upper division units and nine of which must be from linguistics.

A student must choose a specialization from one of the following subject areas:

Modern Syntax: Linguistics 101, 496, 520, 522, 550, Philosophy 531*.

Phonology: Linguistics 101, 496, 500, 521, 523.

Methods of Linguistic Analysis: Linguistics 250 Directed Language Study, Linguistics 496, 500, 523, 550, Anthropology 410, Philosophy 531*.

Sociolinguistics: Linguistics 101, 496, 500, 551, Anthropology 410*.

Psycholinguistics: Linguistics 101, 496, 550, 552, Anthropology 410*.

Historical Linguistics: Linguistics 101, 496, 500, 510, 524.

Applied Linguistics: Linguistics 520 Applied, 524, 550, 551, 552.

Substitutions may be made at the discretion of the undergraduate adviser.

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

* Additional prerequisites required for these courses.

Certificate in Applied Linguistics

The Linguistics Department offers a basic and an advanced Certificate in Applied Linguistics. The basic certificate requires 12 units of study: Linguistics 520 Applied; Linguistics 550 Theory and Practice of ESL; Linguistics 552 Psycholinguistics; and either Linguistics 524 American Dialectology or Linguistics 551 Sociolinguistics. In addition, there is a 15-hour tutoring practicum requirement.

Refer to the Graduate Bulletin for information on the advanced certificate.

LOWER DIVISION COURSES

101. *(65.)* **Language Study (3) I, II**
Introduction to the principles and practice of modern linguistics as applied to the study of English. (Formerly numbered Linguistics 100.)

250. Directed Language Study (3) I, II
Prerequisite: Consent of instructor.
Directed independent study of a foreign language not offered within the course structure at San Diego State University with the aim of acquiring a basic competency in reading, writing, and grammar. No instruction in speaking or understanding the spoken language is included in this course.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

470. Linguistics and Contemporary Issues (3)
Systematic linguistic analysis of language modes associated with various areas of contemporary life, using generative transformational methodology as the analytic technique.

496. *(190.)* **Experimental Topics in Linguistics (1-4) 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**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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.

521. Phonology (3) I, II
Prerequisite: Linguistics 101.
Introduction to the theoretical principles of transformational-generative phonology.

522. Syntax (3) I, II
Prerequisite: Linguistics 101.
Introduction to the theoretical principles of transformational-generative syntax.

523. *(184.)* **Phonemics and Morphemics (3)**
The study of procedures for arriving at the phonetic inventory of languages and the structuring of sound units (both linear and intonational) into phonemic systems; the study of morphemic hierarchies and their arrangements in forming words.

524. *(182.)* **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) I, 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, II**
Prerequisite: Three units in linguistics or sociology.
Investigation of the correlation of social structure and linguistic behavior.

552. *(187.)* **Psycholinguistics (3) I, II**
Prerequisite: Three units in linguistics or psychology.
Psychological aspects of linguistic behavior.

553. Functional Bilingual Linguistics (3) I, II
Prerequisites: Knowledge of Spanish, Linguistics 520, and consent of instructor.
Recommended prerequisites: Speech Pathology and Audiology 528 and 532.
English and Spanish linguistic differences as related to children's second language acquisition; assessment of children's linguistic competence in second language learning through contrastive analyses of English and Spanish phonology, morphology and syntax. Research on current linguistic theories in second language acquisition and in bilingualism.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Mathematics

In the College of Sciences

Faculty

Emeritus: Bryant, Clark, Eagle, Harris, Lemme, Willerding
Chair: Deaton
Professors: Becker, Branstetter, Bray, Burton, Deaton, Drobnies, Fountain, Garrison, Gindler, Harvey, Ho, Holmes, Lesley, Moser, Riggs, Saltz, Shaw, Short, Smith, Van de Wetering, Villone, Warren
Associate Professors: Branca, Burdick, Davis, Eckberg, Elwin, Flanigan, Hager, Hintzman, Howard, Kopp, Lopez, Macky, Marcus, Marosz, McLeod, Nower, Park, Romano, Ross, Vinge, Whitman
Assistant Professors: Baase, Herndon, Salomon

Offered by the Department of Mathematical Sciences

Master of Arts degree in mathematics.
Master of Science degree in mathematics.
Master of Science degree in computer science.
Master of Science degree in statistics.
Master of Arts for teaching service with a concentration in mathematics.
Major in computer science with the A.B. degree in liberal arts and sciences.
Major in computer science with the A.B. degree in applied arts and sciences.
Major in mathematics with the A.B. degree in liberal arts and sciences.
Major in mathematics with the B.S. degree in applied arts and sciences.
Teaching major in mathematics for the single subject teaching credential.
Minor in computer science.
Minor in mathematics.

Computer Science Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Mathematics 107, 137, 150, 151, 152. (20 units.)

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

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 371, 541A, 570, 572, 580 and nine units of approved electives.

Computer Science Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required for this major.

Preparation for the major. Mathematics 107, 137, 150, 151, 152. (20 units.)

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work to include Mathematics 371, 541A, 570, 572, 580 and nine units of approved electives.

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 in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Mathematics 150, 151 and 152. (13 units.) Recommended: Physics 195, 195L, 196, 196L, 197, 197L.

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

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work, including Mathematics 520A, 521A and 534A and one two-semester sequence chosen from the following: Mathematics 521A-521B; 521A and 573; 530 and 531; 534A-534B; 534A and 535; 541A-541B; 551A and 551B; 550 and 553; 570 and 572.

Mathematics Major

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

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

A minor is not required with this major.

Preparation for the major. Mathematics 107, 150, 151 and 152. (16 units.)

Major. A minimum of 36 upper division units to include Mathematics 520A, 534A; at least nine units selected from Mathematics 340A, 340B, 521A, 530, 531, 532, 533, 534B; 12 units from a science to which mathematics may be applied (these should be from a single science and must be approved by the B.S. adviser); and nine units of electives in mathematics excluding Mathematics 302, 303, 310A-310B.

Emphasis in Applied Mathematics

This emphasis is designed to train the student in those areas of mathematics which may be applied to formulate and solve problems in other disciplines. The program is designed to qualify the student for employment as an applied mathematician, but the graduate would be well prepared for graduate study in pure or applied mathematics.

Preparation for the major. Mathematics 107, 119, 137, 150, 151, 152. (23 units.)

Major. A minimum of 36 upper division units to include Mathematics 520A, 521A, 530, 534A, 534B, 541A, 350A or 551A; and 12 units selected from Mathematics 531, 532, 536, 541B, 550, 350B or 551B, 570, 572 or 596 (approved by the Applied Mathematics adviser); and three units of electives.

Auxiliary Area. A minimum of 12 units from an area to which mathematics may be applied. A typical program might be Physics 195, 195L, 196, 196L, 197, 197L; or Chemistry 200, 200L, 201, 201L and a course for which these are prerequisite; or Botany 200 and Zoology 200 and courses for which these are prerequisite; or Economics 101, 102, 447, 541. The intent is to train the student in an area in some depth. Some latitude may be allowed in the choice of department and mix of courses, but all programs must be approved by the Applied Mathematics adviser. The 12-unit requirement is minimal, and a minor in an approved field is highly recommended.

Emphasis in Computer Science

Preparation for the major. Mathematics 107, 137, 150, 151, 152. (20 units.)

Major. A minimum of 36 upper division units in mathematics to include Mathematics 520A, 534A, 570, 572; at least nine units from Mathematics 340A, 340B, 521A, 530, 531, 532, 533, 534B; at least six units from Mathematics 371, 541A, 541B, 573, 574, 575, 576, 578, 580; and nine units of electives.

Emphasis in Statistics

Preparation for the major. Mathematics 107, 119, 150, 151, 152. (19 units.)

Major. A minimum of 36 upper division units in mathematics to include Mathematics 520A, 534A, 551A, 551B; at least nine units from Mathematics 340A, 340B, 521A, 530, 531, 532, 533, 534B, and at least 12 units from Mathematics 331, 350A, 350B, 550, 552, 553; and three units of electives.

Mathematics Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Preparation for the major. Mathematics 107, 150, 151, 152. (16 units.) Recommended: Physics 195, 195L, 196, 196L, 197, 197L. (12 units.)

Major. A minimum of 24 upper division units in mathematics to include Mathematics 302, 520A, 521A, 534A, 577; an upper division course in geometry; and six units of electives in mathematics approved by the credential adviser.

Computer Science Minor

The minor in computer science consists of a minimum of 19-25 units in Mathematics to include Mathematics 107, 137; and at least 12 upper division units from the courses listed below, or at least nine upper division units from the courses listed below if the student completes a full calculus sequence, i.e., Mathematics 121, 122, 123, or Mathematics 150, 151, 152, or Mathematics 141, 142. The courses selected are subject to the approval of the minor adviser:

Mathematics 371, 541A, 570, 572, 573, 574, 575, 576, 578, 580 and 596.

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

Mathematics Minor

The minor in mathematics consists of a minimum of 20-22 units in mathematics to include 12 upper division units, at least six of which have as prerequisite Mathematics 151 or Mathematics 123 or Mathematics 142; or Mathematics 152 and nine upper division units in mathematics, at least six of which have as prerequisite Mathematics 151 or Mathematics 123 or Mathematics 142. The courses selected will be subject to the approval of the minor adviser.

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

Mathematics Placement Examinations

All students who expect to enroll in Mathematics 103, 104, 119, 120, 121, 140 or 150 and have not completed prerequisite courses at San Diego State University must take the mathematics placement tests. These tests may be used to satisfy all or part of the prerequisite requirements for these courses and they also serve as a basis for the selection of students for the mathematics honors program. The schedule for these examinations will be posted on the mathematics bulletin board. Provision is also made for these examinations to be taken by the entering freshman or the transfer student prior to registration. Refer to the calendar.

LOWER DIVISION COURSES

102. Fundamentals of Mathematics (3) Cr/NC

This course is open only to students who fail the Competency Examination as administered by the San Diego State University Test Office and cannot be used to satisfy general education requirements.

Topics from algebra, with applications to practical problems. Elementary notions from geometry, probability and statistics.

Credit in this course satisfies the Mathematics Competency Requirement.

103. *(3.)* **Intermediate Algebra (3) Cr/NC**

Prerequisite: One year of elementary algebra.

Review of elementary algebra, exponents, radicals, logarithms, quadratic equations, arithmetic and geometric progressions. This course is specifically designed to prepare students for Mathematics 119, 120, 121 or 140 and is not open to students with credit in Mathematics 119 or higher-numbered courses. May not be used to satisfy general education requirements.

104. *(4.)* **Trigonometry (2) I, II**

Prerequisites: Credit in plane geometry in either high school or college combined with either credit in Mathematics 103 at this university or qualification on Mathematics Placement Examination. Mathematics 104 may be taken concurrently with either Mathematics 140 or 150.

Basic concepts of analytic trigonometry.

107. *(7.)* **Introduction to Computer Programming (3) I, II**

Prerequisite: Mathematics 103.

Introduction to machine and data organization; the rudiments of job control; design and analysis of algorithms; flowcharts. Extensive programming of problems on the computer.

118. *(18.)* **Topics in Mathematics (3)**
Prerequisite: Two years of high school mathematics.
Topics selected from algebra, analysis, geometry, logic, probability, or statistics, designed to give student insight into structure of mathematical theories and their applications. Not open to students with credit in Mathematics 140 or higher numbered courses.

119. *(19.)* **Elementary Statistics (3) I, II**
Two lectures and two hours of laboratory.
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.
Descriptive statistics: Histogram, frequency polygon, measures of central tendency and variability. Elementary probability. The binomial and normal distributions. Estimation and hypothesis testing for population proportions and means.

120. *(20.)* **Mathematics for Business Analysis (3) I, II**
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.
Basic mathematics for business students, including topics from finite mathematics and calculus.

121. *(21.)* **Basic Techniques of Calculus I (3) I, II**
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examination.
Concepts and applications of algebra, analytic geometry and the polynomial calculus, with emphasis on graphical methods. Designed for students who do not intend to prepare for a professional career in one of the physical sciences or in engineering. Not open to students with credit in Mathematics 141 or 150.

122. *(22.)* **Basic Techniques of Calculus II (3) I, II**
Prerequisite: Mathematics 121.
A continuation of Mathematics 121 including concepts of trigonometry and the calculus of elementary transcendental functions. Not open to students with credit in Mathematics 141 or 151.

123. *(23.)* **Basic Techniques of Calculus III (3)**
Prerequisite: Mathematics 122.
Infinite series, partial differentiation, multiple integrals. For the nonmajor. Not open to students with credit in Mathematics 142 or 152.

137. *(37.)* **Intermediate Computer Programming (4) I, II**
Prerequisite: Mathematics 107.
General concept of machine and assembly languages, including data representation, looping and addressing techniques, subroutine linkages and use of system and programmer-defined macros.

138. Higher Level Languages (1-2)
Prerequisite: Mathematics 107.
Syntax and semantics of a given high level language. Units will depend on language. Programs will be run on computer. Possible languages include FORTRAN, COBOL, ALGOL, PL/I, LISP, SNOBOL, APL. Simulation languages. See class schedule for current offering. Maximum credit six units.

140. *(40.)* **College Algebra (3) I, II**
Prerequisite: Mathematics 103 at this university or qualification on the mathematics placement examinations.
Functional notation, mathematical induction, complex numbers, De Moivre's theorem, inequalities, binomial theorem, determinants, etc. Not open to students with credit in Mathematics 150.

141. Calculus for the Social Sciences (4) I, II
Prerequisite: Mathematics 140 at this university or qualification on the mathematics placement examination.
Types of functions and their graphs, especially those arising from social and behavioral models; trigonometry; single variable calculus, including techniques of integration, differentiation, and optimization. Not open to students with credit in Mathematics 121 or 150.

142. Calculus for the Social Sciences (4) I, II
Prerequisite: Mathematics 141.
Matrix and vector algebra, and linear systems of equations and inequalities; multivariate calculus, including optimization methods; elementary techniques for solution of differential and difference equations. Not open to students with credit in Mathematics 122 or 151.

149. *(49.)* **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. *(50.)* **Single Variable Calculus (5) I, II**
Prerequisites: Mathematics 140 at this university, with minimum grade of C, and credit or concurrent registration in Mathematics 104; or qualification on the mathematics placement examinations.
Topics in analytic geometry; differentiation and integration of single variable functions, with emphasis on techniques.

151. *(51.)* **Calculus and Analytic Geometry (4) I, II**
Prerequisite: Mathematics 150 with minimum grade of C.
Continuation of study of integration and differentiation of single variable functions, with applications. Plane analytic geometry and infinite series.

152. *(52.)* **Multivariable Calculus (4) I, II**
Prerequisite: Mathematics 151 with minimum grade of C.
Partial differentiation, differential equations, multiple integrals, applications.

155A-155B. *(55A-55B.)* **Elementary Proofs (2-2) I, II**
Prerequisite: Mathematics 150 with minimum grade of C. Mathematics 155A, with minimum grade of C, is prerequisite to 155B.
Semester I: Elementary algebraic systems, sets, functions, and induction. Semester II: Real numbers and limits.

210A. *(10A.)* **Structure and Concepts of Elementary Mathematics (3) I**
This course or its equivalent is required for students working toward a teaching credential in elementary education.
Prerequisite: Two years of high school mathematics.
Sets and relations, functions, the development of the number system from the natural numbers, including the whole numbers, the integers, the rational numbers and the real numbers.

210B. *(10B.)* **Structure and Concepts of Elementary Mathematics (3) I**
This course or its equivalent is required for students working toward a teaching credential in elementary education.
Prerequisite: Mathematics 210A.
Elementary number theory and congruences, metric and nonmetric geometry, introduction to logic, probability and statistics and some concepts from algebra.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

302. *(101.)* **Basic Mathematical Concepts (3) I, II**
Prerequisite: Mathematics 150.
An examination of the concepts of secondary school mathematics from the teacher's point of view.

303. *(104.)* **History of Mathematics (3) I, II**
Prerequisite: Mathematics 121 or 140.
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.

331. Statistical Computations and Analysis (3)
Prerequisite: Mathematics 350A.
Using statistical computer packages to analyze problems involving experimental design, regression and nonparametric methods.

340A-340B. *(118A-118B.)* **Methods of Applied Mathematics (3-3) I, II**
Prerequisite: Mathematics 152. Mathematics 340A is prerequisite to 340B.
Selected topics from ordinary differential equations, with applications; hyperbolic, elliptic, Bessel and gamma functions, Fourier series and integrals, electromechanical analogies, the Laplace transform, and partial differential equations. Mathematics 340A is not open to students with credit in Mathematics 530; Mathematics 340B is not open to students with credit in Mathematics 531.

350A. *(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. (Formerly numbered Mathematics 330A.)

350B. *(130B.)* **Statistical Methods (3) II**
Prerequisite: Mathematics 350A.
Multiple regression, factorial models and nonparametric methods, all with emphasis on applications. (Formerly numbered Mathematics 330B.)

371. *(137.)* **Discrete Mathematics, with Computer Applications (3)**
Prerequisite: Mathematics 151 or 122.
Equivalence and order relations, Boolean algebra, finite machines and their optimization, logical design. (Formerly numbered Mathematics 571.)

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

498. *(198.)* **Directed Readings in Mathematics Literature (1)**
Prerequisite: Credit or concurrent registration in the upper division mathematics course in which readings are to be undertaken.
Individually directed readings in mathematics literature. May be repeated for a maximum of three units, taken each time from a different instructor.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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**
Prerequisites: Mathematics 122 or 151 and consent of instructor.
Concurrence of lines, collinearity of points and other properties of figures not altered by projections; construction and study of ellipses, hyperbolas, and parabolas by means of projections.

512. *(107.)* **Non-Euclidean Geometry (3)**
Prerequisite: Mathematics 122 or 151.
History of attempts to prove the fifth postulate; emphasis on plane synthetic hyperbolic geometry; brief treatment of other types of non-Euclidean geometry.

520A. *(149.)* **Linear Algebra (3) I, II**
Prerequisite: Mathematics 123 or 152.
A study of linear equations, Euclidean spaces, linear transformations, matrices, determinants, and eigenvalues. (Formerly numbered Mathematics 520.)

520B. Applied Linear Algebra (3)
Prerequisite: Mathematics 520A.
Jordan forms, vector and matrix norms, condition numbers, generalized inverses, linear programming, analysis of a few standard algorithms in linear algebra.

521A-521B. *(150A-150B.)* **Modern Algebra (3-3) I, II**
Prerequisites: Mathematics 152. Mathematics 521A is prerequisite to 521B.
Selected topics from modern algebra to include an introduction to the theory of groups, theory of equations, and finite mathematics.

522. *(152.)* **Number Theory (3)**
Prerequisite: Mathematics 152.
Selected topics from the theory of numbers to include congruences, Diophantine equations, and a study of prime numbers.

523. *(155.)* **Mathematical Logic (3)**
Prerequisite: Mathematics 151 or Philosophy 120.
The logical rules of proof governing sentential connectives and the universal and existential quantifiers with applications. Not open to students with credit in Philosophy 521.

530. *(119.)* **Differential Equations (3) I, II**
Prerequisite: Mathematics 152.
Ordinary differential equations with applications to geometry, physics and chemistry. Not open to students with credit in Mathematics 340A.

531. *(170.)* **Partial Differential Equations (3)**
Prerequisite: Mathematics 530.
Study of boundary-initial value problems via separation of variables, eigenfunction expansions, Green's functions, and transform methods. Introductory material includes uniform convergence, divergence theorems and Fourier series. Not open to students with credit in Mathematics 340B.

532. *(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 and Differential Geometry (3)**
Prerequisite: Mathematics 152.
Vector algebra, differentiation and integration, classical theory of curves and surfaces, divergence theorem, Stokes' theorem and related integral theorems, curvilinear coordinates, elements of tensor analysis. Applications to geometry and physics.

534A. *(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.

536. Mathematical Models (3)
Prerequisite: Mathematics 520A.
Analysis of complex systems in biological and social sciences. Applications of graphical methods, systems of differential equations and Markov chains to stability of populations, prices, allocation of resources, etc.

541A. *(135A.)* **Numerical Analysis and Computation (3) I**
Prerequisites: Mathematics 107 and 152.
Iteration methods for solving nonlinear equations. Curve fitting. Interpolation: Lagrange's formula and Newton's formula. Numerical methods for integration. Runge-Kutta and predictor-corrector methods for solving systems of ordinary differential equations.

541B. *(135B.)* **Numerical Analysis and Computation (3) II**
Prerequisites: Mathematics 340A or 530, 520A and 541A.
Numerical linear algebra: direct and iterative methods for solving systems of equations, methods for finding eigenvalues and eigenvectors. Optimization. Numerical methods for solving partial differential equations.

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.
Definitions, computation of probability by enumeration of the cases, discrete and continuous random variables, density functions, moments, limit theorems, selected distributions.

551A. *(140A.)* **Mathematical Statistics (3) I, II**
Prerequisite: Mathematics 152.
Probability models in the theory of statistics, sampling distributions with applications in statistical inference.

551B. *(140B.)* **Mathematical Statistics (3) II**
Prerequisite: Mathematics 551A.
Point and interval estimation and hypothesis testing in statistical models with applications to problems in various fields.

552. *(141.)* **Statistics, Theory and Applications (3)**
Prerequisite: Mathematics 551B.
Applications of and case studies employing statistical techniques from the areas of experimental design, nonparametric inferences, decision theory and selected topics.

553. *(143.)* **Stochastic Processes (3)**
Prerequisite: Mathematics 550.
Introduction to stochastic processes with selected applications.

570. *(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.

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 371 or 521A.
Definition and algebraic description of finite automata. Reduced forms for sequential machines. Regular sets and expressions. Introduction to context-free languages.

574. *(157.)* **Introduction to Computability (3)**
Prerequisite: Mathematics 155A or 371 or 523.
Definition of algorithm by abstract (Turing) machines and by recursion. Application of this definition to the limitations and capabilities of computing machines. Applications to logic, algebra, analysis.

575. *(176.)* **Compiler Construction (3)**
Prerequisites: 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.

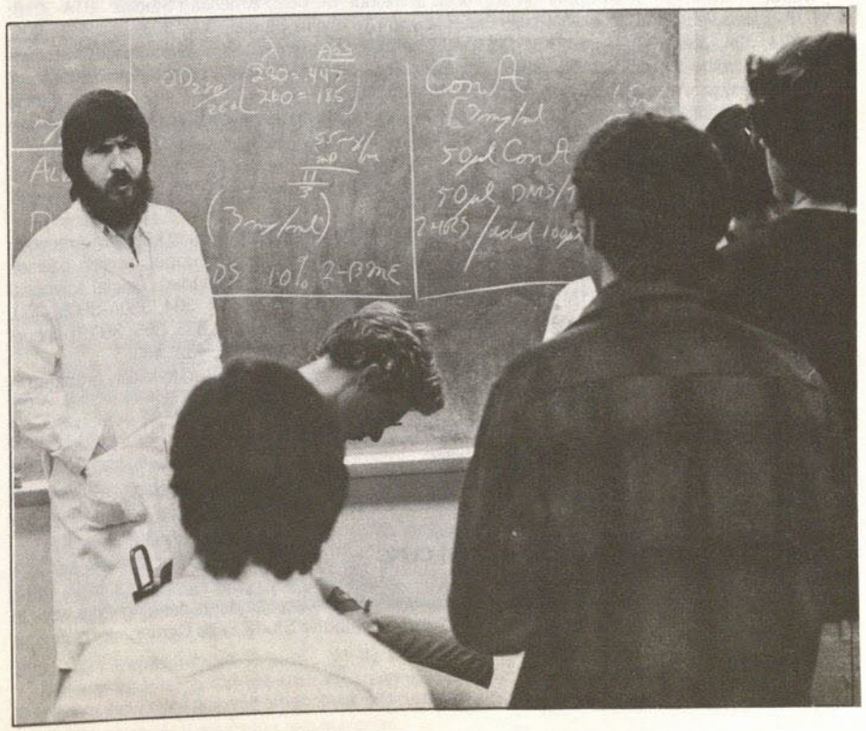
579. Combinatorics (3)
Prerequisite: Mathematics 122 or 151.
Permutations, combinations, generating functions, recurrence relations, inclusion-exclusion counting. Polya's theory of counting, other topics and applications.

580. Systems Programming (3) I, II
Prerequisite: Mathematics 137.
Review of batch process systems programs, their components, operating characteristics, user services and their limitations. Implementation techniques for parallel processing of input/output and interrup handling. Details on addressing techniques, core management, system updating, documentation and operation. (Formerly numbered Mathematics 557.)

596. *(196.)* **Advanced Topics in Mathematics (1-4) I, II**
Prerequisite: Consent of instructor.
Selected topics in classical and modern mathematics. May be repeated with the approval of the instructor. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Mexican-American Studies

In the College of Professional Studies

Faculty

Chair: Villarino
Associate Professors: Kennedy, Moreno, Serros, Villarino
Assistant Professors: Griswold del Castillo, Rodriguez, Sanchez
Lecturers: Camarillo, Palacios

Offered by the Department

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 in the section of this catalog on "Graduation Requirements."

A double major is strongly recommended for students majoring in Mexican-American Studies.

Students majoring in Mexican-American Studies must complete a minor in another field approved by the adviser in Mexican-American Studies.

Preparation for the major. Mexican-American Studies 110A-110B. (6 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. Students majoring in Mexican-American Studies must demonstrate knowledge of Spanish by satisfactory completion of written and oral examinations administered by Mexican-American Studies. Refer to section of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units to include Mexican-American Studies 301A-301B; and 18 units selected from: (social sciences) Mexican-American Studies 302, 303, 304, 305, 306, 320, 324, 334, 350A-350B, 360, 481, 484, 485; or 18 units selected from (humanities) Mexican-American Studies 324, 331, 332, 333, 334, 335, 365, 380; or 18 units selected from (bilingual systems) Mexican-American Studies 460, 461, 464A-464B, 465, 466, 470, 480, 482, 483. Up to nine units, with appropriate content, can be applied to each area of concentration from Mexican-American Studies 496, 497 and 499.

Mexican-American Studies Minor

The minor in Mexican-American Studies consists of a minimum of 18 units in Mexican-American Studies to include Mexican-American Studies 110A-110B and 12 units of upper division courses selected from any one of the following four areas in Mexican-American Studies: (social sciences) Mexican-American Studies 301A-301B, 302, 303, 304, 305, 306, 320, 324, 334, 350A-350B, 360, 481, 484, 485; (humanities) Mexican-American Studies 331, 332, 333, 334, 335, 365, 380; (bilingual systems) Mexican-American Studies 460, 461, 464A-464B, 465, 466, 480, 482, 483.

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

LOWER DIVISION COURSES

103A. *(3A.)* **Chicano Orientation (1) Cr/NC**
Lectures relating to general Chicano topics on and off campus directed especially at freshman and transfer EOP students; introduction to student services and general social problems in the Chicano community.

103B. *(3B.)* **Study Skills for Chicanos (0) Cr/NC**
Three hours of laboratory.
Directed study in reading and writing skills; especially for bilingual students needing extra work in these skills. Majority of work will be done in conjunction with the Study Skills Center.

103C. *(3C.)* **Review of Mathematics (0) Cr/NC**
Three hours of laboratory.
Directed study in mathematic 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.

111A. *(2A.)* **Oral Communication (3)**
Training in the process of oral (speech) expression: addressing the barrio; formal delivery.
Mexican-American Studies 111A is equivalent to Speech Communication 103. Not open to students with credit in Speech Communication 103.

111B. *(2B.)* **Written Communication (3)**
Training for the Spanish-speaking in the process of written expression. English grammar and composition; the essay; the term paper.
Mexican-American Studies 111B is equivalent to English 100. Not open to students with credit in English 100.

115. *(10.)* **Mexican-American in Transition (3)**
Modern Chicano social problems recognizing the sociological factors involved. Emphasis on scientific method of approach. Evaluation of various causes and solutions of problems of the Chicano. Mexican-American Studies 115 is equivalent to Sociology 110.

119. *(11.)* **Field Instruction (3-6)**
Field work in the barrio. Directed research and development projects in the San Diego Chicano community. It is recommended that this course be taken concurrently with Mexican-American Studies 110A or 110B. Maximum credit six units.

120A-120B. *(20A-20B.)* **The Mexican-American Role in the American Political System (3-3)**
Semester I: Relationship between the Mexican-American community and the American political system. Semester II: The Mexican-American in relation to his city, county, and state institutions in California. This year course meets the graduation requirement in American Institutions.

130. *(30.)* **Mexican Literature in Translation (3)**
Contemporary Mexican prose and poetry in translation.

140. *(40.)* **History and Sociology of Racism (3)**
Survey and analysis of majority group racism and its effects upon minority ethnic groups and society.

141A-141B. *(41A-41B.)* **History of the United States (3-3)**
Emphasis on Spanish and Mexican influences. Semester I: U.S. expansion to 1848. Semester II: 1848 to 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 Culture (3)**
The individual Chicano and his cultural pattern: the acquisition of his culture, innovation and invention, direction of his cultural development, diffusion and interpenetration 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. *(65A.)* **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 (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301A-301B. Political Economy of the Chicano People (3-3) I, II
Prerequisite: Mexican-American Studies 110A-110B; 301A is prerequisite to 301B.* Recommended Economics 100, or 101 and 102.
Semester I. Political and economic roots of the oppression and exploitation of the Chicano from historical, institutional and theoretical points of view. Semester II. Traditional distortions in the sociology and anthropology of minorities (Chicano emphasis): demythification of the "sleeping giant," the "invisible minority," etc.

302. *(101.)* **Community Organization and Development (3) I, II**
Prerequisite: Mexican-American Studies 301B.*
Theory of organizing the Mexican-American community for creative roles in educational, political, social change. Role of the professional organizer.

303. *(102.)* **Contemporary Problems of the Barrio (3)**
Prerequisite: Mexican-American Studies 110A or 110B.*
Sociological and practical analysis of barrio problems. Observation in informal agencies for experience and sensitizing.

304. *(103.)* **Narcotics in the Mexican-American Community (3) I, II**
Prerequisite: Mexican-American Studies 110A or 110B.*
Prevention and cure of drug problems; old and new methods; formal and informal agencies explored.

305. *(111.)* **Advanced Field Instruction (3)**
Advanced field work in the barrio. Directed research and development projects in the San Diego Chicano community. Maximum credit six units.

306. *(121.)* **Immigration Law and Practices (3)**
Legal and political status of the immigrant from Mexico; process of immigration; counseling the immigrant.

320. *(105.)* **Mexican-American Life Styles (3)**
The Mexican-American family in the past, present, and future. Traditional and evolving roles of the man and the woman. The new alternatives in the twentieth century.

324. Gramatica Cantada (3)
Methods and materials of Spanish instruction through music of Mexico and the Southwest.

331. *(131.)* **Chicano Poetry: Creative Writing (3)**
Reading and writing of Spanish-English macaronic verse: a writing workshop in which students are given opportunity to criticize each other's work. Poetry is the point of departure and goal in sight. Maximum credit six units.

332. *(132.)* **Chicano Prose: Creative Writing (3)**
A writing workshop. Mutual criticism. Exploration of new form and content in Mexican-American prose. Maximum credit six units.

333. *(133.)* **Prehispanic Literature (3)**
Literature of Nahua and Maya areas in translation: studied as literature.

334. *(134.)* **Language of the Barrio (3)**
Pachuco, calo, and barrio Spanish: a linguistic study.

335. *(135.)* **Mexican-American Literature (3)**
Ideas, forms, history of significant Mexican-American prose, poetry and other literary genres.

350A-350B. Chicano History (3-3) I, II
Semester I: Review of indigenous origins; Hispanic institutions and northward expansion; the Mexican Republic. Semester II: Early U.S. encroachment and the Mexican-American War; Chicano influences and contributions; the multilingual and multicultural Southwest.

*The prerequisites are waived for students not majoring in Mexican-American Studies.

360. Effects of Political and Ecnomic Institutions on the Barrio (3) I
Prerequisite: Mexican-American Studies 301A.*
Analysis of unique needs within the barrio and their relationship to political and economic institutions; a study of the consumer society; research and theoretical development of alternative economic modes.

365. *(165.)* **Advanced Chicano Dramatic Production (3)**
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 Nahua and European origins to the synthesis between the two continents in nineteenth and twentieth centuries. The concept of *Raza de bronce* and *Aztlan.*

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.

390A-390B *(122A-122B.)* **The Chicano in Urban Politics (3-3)**
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.

404. Penology and Criminology and the Chicano (3)
The Chicano and the Pachuco and the penal institutions. Who goes to jail and why. Field trips to penal institutions, courtrooms.

460. *(170.)* **Bilingual Training Systems (3) I, II**
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.

461. *(171.)* **Bilingual Linguistics (3) I**
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.

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) II**
Eight hours of laboratory.
Prerequisites: Mexican-American Studies 460 or 461, and 470.
Methods of teaching Spanish and English in elementary, junior high, and high school, emphasizing all valid linguistic approaches to language learning.

466. *(175A.)* **Bilingual Materials and Curriculum (3) I, II**
One lecture and four hours of activity.
Prerequisite: Credit or concurrent registration in Mexican-American Studies 460.
Investigation, evaluation and adaptation of existing materials in bilingual and bicultural education.

470. *(178.)* **Bilingual Systems Methods (3) I**
Prerequisites: Mexican-American Studies 460, and 461 or 466.
Theory of teaching methods within a bilingual and bicultural program.

480. *(180.)* **The Mexican-American and the Schools (3) I, II**
Prerequisite: Mexican-American Studies 110A or 110B.
The Mexican-American child's experience in the school system from preschool through high school with emphasis on social, intellectual and emotional growth and development.

*The prerequisites are waived for students not majoring in Mexican-American Studies.

481. Contemporary Issues and the Chicano Child (3)
Housing and neighborhoods; family structure; Chicano culture; health and medical needs, problems in education, emotional, social and intellectual growth, meaningful school curriculum; measurement and evaluation of academic skills and relationship to the education of urban and rural Chicano child.

482. *(182.)* Mexican-American Curricula (3)
Prerequisite: Mexican-American Studies 480. *
Studies of current theories in Mexican-American curricula and their development.

483. *(183.)* Rural and Migrant Issues (3)
Prerequisite: Mexican-American Studies 480. *
The Mexican-American rural and migrant student; problems and new programs.

484. *(184.)* Counseling the Mexican-American Student (3) I
Prerequisite: Mexican-American Studies 480. *
Motivation counseling at all levels; parent counseling and involvement; recruiting for secondary continuation and college.

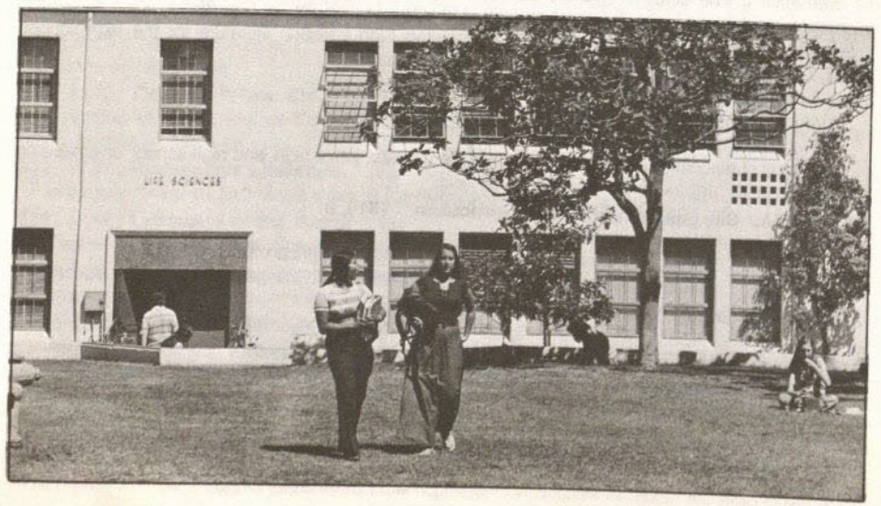
485. *(185.)* Testing Theories and the Mexican-American in the Southwest (3)
Prerequisite: Mexican-American Studies 480.
Cultural bias in testing; survey of the latest testing techniques as applied to the Mexican-American in the educational system.

496. *(196.)* Selected Topics in Mexican-American Studies (3)
Intensive exploration of selected topics in the area of Mexican-American Studies. May be repeated with new content. Maximum credit six units.

497. *(197.)* Senior Survey in Mexican-American Studies (3)
Prerequisite: Mexican-American Studies 301B.
Survey integrating studies of selected areas of Mexican-American Studies. Senior report will be written.

499. *(199.)* Special Study (1-3)
Prerequisites: Consent of instructor and department chair of Mexican-American Studies.
Individual study. Maximum credit six units.

* The prerequisites are waived for students not majoring in Mexican-American Studies.



Microbiology

In the College of Sciences

Faculty

Emeritus: Myers
Chair: Kelly
Professors: Baxter, Kelly, Moore, Walch
Associate Professors: Anderes, Phelps, Steenbergen
Assistant Professor: Hemmingsen

Offered by the Department

Master of Science degree in microbiology.
Master of Arts or Master of Science degree in biology with an emphasis in microbiology.
Major in microbiology with the A.B. degree in liberal arts and sciences.
Major in microbiology with the B.S. degree in applied arts and sciences.
Major in Environmental Health with the B.S. degree in applied arts and sciences.
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 in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Botany 200; Biology 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L or 231, 231L, 250 or 251: Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (42-44 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. It is recommended that students select French, German or Russian to satisfy this requirement. Refer to section of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units in Microbiology and approved related fields to include Microbiology 310, 320, 330, and 515 or Biology 503; and Chemistry 361A-361B. Remaining units to be selected from courses in microbiology, and approved courses in other biological sciences, chemistry and physics.

Microbiology Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Botany 200; Biology 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L or 231, 231L, 250 or 251; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (42-44 units.)

Major. A minimum of 36 upper division units in microbiology and approved related fields to include Microbiology 310, 320, 330, and 510 or 520; Chemistry 361A-361B; and three of the following courses: Microbiology 515, 525, 535, 560. Recommended Chemistry 310A, 310B and 467. Remaining courses to be selected from courses in microbiology and approved courses in other biological sciences, chemistry and physics.

Medical Technology Curriculum

In Applied Arts and Sciences

The curriculum in medical technology, which prepares for the licensed profession of Public Health Microbiologist or Clinical Laboratory 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 qualify for the licensing examination given by the California State Department of Public Health for Public Health Microbiologist, the applicant must be a licensed clinical technologist and have completed a training internship in a Public Health Laboratory in California.

Clinical Technologist. To fulfill the academic requirements to qualify for the licensing examination given by the State for Clinical Technologist and the certification examination for medical technologists given by the American Society of Clinical Pathologists, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 520, 525, 530, 535, and Zoology 535. Recommended: Biology 570 and 571; Chemistry 467; Microbiology 430A-430B, 515, 535L; Zoology 508 and 526. Upon completion of the degree requirements a one-year training internship at an approved laboratory is required to be eligible for the licensing and/or certification examinations.

Environmental Health Major

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

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

A minor is not required with this major.

This program is approved by the California State Department of Health. Upon completion of degree requirements and one year of experience as an Assistant Sanitarian with a local public health department, the graduate will be admitted to the State of California examination for Registered Sanitarian.

Preparation for the major. Botany 200; Biology 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L or 231, 231L, and 250 or 251; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Psychology 101 or Sociology 101; Zoology 200. (45-47 units.)

Major. A minimum of 37 upper division units to include Biology 570; Civil Engineering 444, 555; Health Science and Safety 341; Microbiology 310, 410, 420, 430A-430B, 520; Sociology 440 or Psychology 340; Zoology 526. Remaining courses to be selected from among electives approved by the department. The prerequisites for Civil Engineering 444 and 555 are waived for students in this major.

Microbiology Major

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

The program described below is subject to the approval of the Commission on Teacher Preparation and Licensing. For the present time, the program is required for departmental recommendation to the student teaching program of the School of Education.

Candidates for the single subject teaching credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

Preparation for the major. Botany 200; Biology 215 or Mathematics 119; Chemistry 200, 200L, 201, 201L, 230, 230L or 231, 231L, 250 or 251; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (42-44 units.)

Major. A minimum of 39-41 upper division units in microbiology and approved related fields to include Microbiology 310, 320, 330, and 510 or 520; three of the following courses, Microbiology 515, 525, 535, 560; Biology 400; Botany 500; Chemistry 361A-361B; and one of the following courses, Zoology 503, 510, 521, 535, 570.

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. *(1L.)* **Microbiology and Man, Laboratory (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 110.
Laboratory exercises designed to complement material presented in Microbiology 110. Fulfills the general education laboratory requirement in the natural science area.

210. *(10.)* **Fundamentals of Microbiology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 100, 100L, 130, 130L, or 200, 200L, 201, 201L. Students with credit in Microbiology 110 may enroll but will receive only one additional unit of credit.
A course for nursing and dietetics majors. Study of the microorganisms of the environment, including the disease-producing organisms, their actions and reactions.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

310. *(101.)* **General Microbiology (4) I, II, S**
Two lectures and six hours of laboratory.
Prerequisite: Chemistry 230, 230L or 231, 231L.
The actions and reactions of microorganisms in response to their environment, both natural and as changed by other organisms, including man. Also includes an introduction to the pathogens.

320. *(105.)* **Microbial Physiology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310; Chemistry 250 or 251; and Physics 124A-124B. Recommended: Chemistry 361A; Physics 125A-125B and 194A-194B.
Physiology of selected bacteria, fungi, and other microorganisms.

330. *(103.)* **Fundamentals of Immunology and Serology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310; Chemistry 361A; and one other upper division biological science course.
The immunochemistry of antigens and antibodies and their reactions. Immunohematology and hypersensitivity. Serological techniques.

360. *(140.)* **Microorganisms in Human History (2) I, II**
Influence of microorganisms at decisive points in human history and development of microbiology as a science.

370. *(118.)* **Community Epidemiology (3) I, II**
Prerequisite: Microbiology 210.
A course for other than biological sciences majors. Epidemiological concepts and methods as they apply to current community problems.

410. *(112.)* **Principles of Environmental Health (4) I**
Three lectures and three hours of laboratory and field work.
Prerequisites: Biology 215 or Mathematics 119; Health Science and Safety 102; and Microbiology 310.
General principles of environmental sanitation, including the relationship of the various aspects of physical environment to preventive medicine; the provision of clean air and water, proper waste disposal, safe food supply, and adequate habitation.

420. *(113.)* **Environmental Health Administration (4) II**
Three lectures and three hours of field work.
Prerequisite: Microbiology 410.
Concepts of organization and administration applied to environmental health; factors affecting these at the local, national and international levels.

430A-430B. *(111A-111B.)* **Epidemiology (2-2)**
Prerequisite: Microbiology 520; Biology 215 or Mathematics 119.
Study of the transmission, distribution, and control of infectious and noninfectious diseases in the community.

490. *(190.)* **Investigation and Report in Microbiology (2) I, II**
Prerequisites: Microbiology 310 and at least one additional upper division course in microbiology.
Investigation and reports on current microbiological literature.

495. *(198.)* **Methods of Investigation (2) I, II**
One discussion and three hours of laboratory.
Prerequisite: Microbiology 310.
Laboratory methods used in microbiological research. Preparation and utilization of microbiological culture media and diagnostic reagents. Maximum credit four units.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Fifteen upper division units in the major with an average of B (3.0) or better.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

510. *(115.)* **Advanced General Microbiology (4) II**
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
Taxonomy, comparative physiology and ecology of representative microorganisms found in various natural environments.

515. *(114.)* **Bacterial and Viral Genetics (2) I, II**
Prerequisite: Microbiology 310.
The genetics of bacteriophages; selected animal viruses and bacteria.

520. *(102.)* **Pathogenic Bacteriology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310 with a minimum grade of "C"; Chemistry 250 or 251. Recommended: Chemistry 361A.
Bacterial and rickettsial agents of disease in man and other animals. Consideration of host-parasite relationships, the biology of the inciting agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.

525. *(104.)* **Medical Mycology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
Mycotic agents of disease in human and other animals. Consideration of the biology of fungi; concepts of host-parasite relationships, including factors affecting virulence and immunity. Experience in systematic identification.

530. *(109.)* **Hematology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
The study of normal and pathological blood with chemical, physical and microscopic methods.

535. *(107.)* **General Virology (2) I, II**
Prerequisite: Microbiology 310. Recommended: Microbiology 330 and 520.
Viruses, their structure, function, culture, and methods of study.

535L. *(107L.)* **General Virology Laboratory (2) II**
Six hours of laboratory.
Prerequisites: Microbiology 520 and credit or concurrent registration in Microbiology 535.
The culture, isolation, and characterization of viruses.

560. *(116.)* **Marine Microbiology (2) I**
Prerequisites: Microbiology 310 or an introductory course in microbiology and consent of instructor.
Microbiological population of estuary and ocean waters; interrelationships with other organisms and the physical and chemical environment.

560L. Marine Microbiology Laboratory (2) I
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 560.

580. *(120.)* **Animal Viruses (4) I**
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 520 and 535. Recommended: Microbiology 330 and 535L.
Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and serology.

590. *(180.)* **Electron Microscopy (4) II**
Two lectures and six hours of laboratory.
Prerequisites: Physics 125A-125B and 194A-194B; Microbiology 310. Recommended: Microbiology 535 and Zoology 508.
Principles and techniques in the biological application of the electron microscope.

GRADUATE COURSES

Refer to the Graduate Bulletin.

12—77390

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
Chair: Smith, J.D.
Professors: Almond, Anderson, Blyth, Bruderer, Brunson, Estes, Forman, Genzlinger, Hogg, Hurd, Lambert, Mracek, Savage, Sheldon, Smith, J.D., Snider, Ward-Steinman
Associate Professors: Hill, Loomis, Meadows, Mitchell, Moe, Yates
Assistant Professors: Flye, George, Kolar, Logan, 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.
Teaching major in music for the single subject teaching credential.
Minor in music.

Music Curricula

The music curricula are designed to fulfill the needs of all students: (1) those who have professional ambitions in music performance, or seek a foundation for graduate study leading to college or university teaching; (2) those who are preparing for one of the several state teaching credentials; (3) those whose major professional interest is in another department, and are seeking musical study as a minor; and (4) those who are interested in music as an elective study area for the enrichment of their cultural background.

General Basic Requirements

General basic requirements for the B.M. degree in applied arts and sciences, the A.B. degree with a major in music in applied arts and sciences or in teacher education are as follows:

1. Upon entering the department, each student is required to take an examination in piano for classification, and to commence on no less than four consecutive semesters of class piano study for credit.
2. In the area of performance studies, each entering student is required to declare his major instrument (voice, piano, clarinet, etc.), take an examination thereon for classification and complete six semesters of study on that instrument for the A.B. degree for the Single Subject Teaching Credential and eight semesters for the B.M. degree. (The requirements in terms of semesters of study may be reduced for transfer students on the basis of the examination for classification.)
3. To qualify for upper division study, music majors must complete successfully a Junior Level examination which will be administered following the fourth semester of study in Music 250.
4. Appearance in at least one student recital during each semester in residence, according to departmental recital requirements.
5. As laboratory experience, participation in one or two performing groups each semester, to meet the requirement in courses numbered 170 through 190 and 370 through 390 as stated in each of the majors, half of this requirement to be met in a major group in which the major instrument or voice is regularly used.
6. A final grade of C will be required in Music 158A-158B, 258A-258B, and 358A for students to qualify to enroll in the next higher course in the sequence.

Music Major

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

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

A minor is not required with this major.

Preparation for the major. Music 110A-110B, 110C-110D (may be waived in full or in part by examination); 115A; four units selected from courses numbered 120A through 135; 158A-158B; four units selected from courses numbered 170 through 190; four units of Music 250; 258A-258B. (29-33 units.)

Major. A minimum of 28-29 upper division units to include Music 358A-358B; five units selected from courses numbered Music 370 through 390; one unit selected from Music 448A or 449A; four units of Music 450, 552A-552B; elect one course from Music 310, 351B, 351C, 351D.

Music Major

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

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

A minor is not required with this major.

Preparation for the major. Music 110A-110B, 110C-110D, (may be waived in full or in part by examination), 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 370 through 390, four to eight units in Music 450, and the requirements in one of the following fields of emphasis:

(a) Performance. Ten units to include Music 367, 497, and seven units to be selected with the aid of the departmental adviser. (Pianists, vocalists, and string performers must include Music 541 and 542.)

Students emphasizing performance must appear in a joint recital during the junior year and must present a solo recital during the senior year. The student must pass an audition of the program to be performed before the music faculty no less than one month in advance of the recitals.

(b) Music History and Literature. Ten units to include four units of Music 499 and six units of courses to be selected with the aid of the departmental adviser from related fields such as history, etc.

During his senior year, the student emphasizing music history and literature is required to organize, prepare program notes, and present two recitals consisting of recorded or "live" performances. Each will deal with representative works of a certain period, composers, or styles to be compared. Such students must pass an audition of the lecture and the music to be performed no less than one month in advance of the recitals.

(c) Composition. Ten units to include two units of Music 207, two units of Music 497, two units of Music 507, and four units selected with the aid of the departmental adviser.

An interview with the Department Chairman is required for admission to this emphasis.

The student emphasizing composition is required to present a concert of his compositions during the senior year and present the scores of works to be performed to the music faculty no less than one month in advance of the performance.

Foreign Language Requirement. Eight to twelve units (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 Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

Students in teacher education may use this major for the A.B. degree in applied arts and sciences by completing additional departmental requirements in recital attendance and performance, and proficiency examinations in voice and piano.

Admission to teacher education is required prior to graduation with this major.

Preparation for the major. Music 110A-110B, 110C-110D (may be waived in full or in part by examination); 115A; four units selected from courses numbered 120A through 135; 158A-158B; four units selected from courses numbered 170 through 190; 246A-246B; four units of Music 250; 258A-258B. (31-35 units.)

Major. A minimum of 30 upper division units to include Music 358A-358B; two units selected from courses numbered Music 370 through 390; 446A-446B-446C; one unit selected from Music 448A or 449A; 355; two units of Music 450; 552A-552B.

Electives in Music

The Music Department offers certain courses for students who are interested in music as an elective study area for the enrichment of their cultural background. Courses particularly suited for these needs are Music 151 and 351 and the music courses numbered 170 to 190 and from 370 to 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 stopped taking performance studies for credit for one semester or more, upon resumption of that instruction for credit are required to present another preliminary audition.
6. At the end of each semester, the Department of Music will sponsor a jury examination to satisfy itself that its standards have been met.

Music Minor

To be admitted to the minor program, the student must demonstrate vocal or instrumental performing ability.

The minor in music consists of 24 units in music to include Music 110A-110B, 158A-158B, 258A-258B, and six units of upper division electives selected in consultation with the departmental adviser.

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

LOWER DIVISION COURSES

101. *(1.)* **Recitals (1) I, II Cr/NC**
Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with departmental requirements. Maximum credit four units.

102. *(2.)* **Basic Musicianship for Non-Music Majors (3) I, II**
Four hours.
Rudimentary music theory involving the elements of music: melody, rhythm, and harmony. Developing the understanding of these elements through instrumental and vocal experiences which include the use of unison and part-singing, the keyboard, and simple melodic and harmonic instruments.

103A. Basic Aural Skills (1) I, II
Three hours of laboratory.
Prerequisite: Ability to read music.
Emphasis on ear-training and sight-singing. May be taken as preparation to enter Music 158A.

103B. Aural Skills (1) I, II
Three hours of laboratory.
Prerequisite: Music 103A.
Continued emphasis on ear-training and sight-singing. May be taken as review for the Junior Level Aural Skills Examination.

110A-110B. *(10A-10B.)* **Piano—Elementary Class Instruction (1-1) I, II**
Two hours.
Prerequisite: Music 110A is prerequisite to 110B.
Basic keyboard experience through study of music reading, notation, scales, chords, and sight-reading covering a repertoire of beginning and intermediate songs and piano literature, with emphasis on keyboard harmony. Required of music majors and minors and credential candidates for teaching at the kindergarten-primary level.

110C-110D. *(10C-10D.)* **Piano—Elementary Class Instruction (1-1) I, II**
Two hours.
Prerequisite: Music 110B is prerequisite to 110C; and 110C to 110D.
Continuation of Music 110A-110B.

115A. *(15A.)* **Voice—Elementary Class Instruction (1) I, II**
Two hours.
Mastery of the fundamentals of voice. Not open to voice majors.

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) 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 320A.

120B. *(20B.)* **Strings—Elementary Class Instruction (1) II**
Two hours.
Prerequisite: Music 120A or 320A.
Fundamentals of violin, viola, cello, and string bass by lecture and acquisition of elementary skills emphasizing those instruments not previously studied in Music 120A or 320A. Not open to students with credit in Music 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) I**
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 art. 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. *(8A-8B.)* **Comprehensive Musicianship (3-3) I, II**
Two lectures and two hours of activity.
Prerequisite: Music 158A is prerequisite to 158B.
Direct analysis of musical styles and forms as they have evolved historically; composition, improvisation, performance, and instrumentation; sight-singing, dictation, harmony. Parallel developments in related arts; comparisons with non-Western musical systems.

Performance Organization Courses (Music 170 through 190)

The performance organization courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and designed to provide students with practical experience in rehearsal techniques.

170. *(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.

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 for the B.M. degree in composition and in music history and literature enroll for one unit of credit per semester. For conditions under which credit is given, see Performance Studies for Credit in the section of the music major. Maximum credit for Music 250 is eight units.

A. Piano
B. Harpsichord
C. Organ
D. Voice
E. Flute
F. Oboe
G. Clarinet
H. Saxophone
J. Bassoon
K. French Horn
L. Trumpet
M. Trombone
N. Baritone Horn
O. Tuba
P. Percussion
Q. Violin
R. Viola
S. Cello
T. Contrabass
U. Harp
V. Classical Guitar
W. Medieval or Renaissance Instruments
X. Classical Accordion
Y. Composition
Z. Non-Western Instruments

258A-258B. *(58A-58B.)* **Comprehensive Musicianship (5-5) I, II**
Four lectures and two hours of activity.
Prerequisite: Music 158B. Music 258A is prerequisite to 258B.
Continuation of Music 158A and 158B. Late 19th and 20th century harmony. Counterpoint and texture in Medieval, Renaissance, and Baroque styles.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101.)* **Recitals (1) I, II Cr/NC**
Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with department 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 320A. Not open to students with credit in Music 120B.

325A. *(125A.)* **Clarinet and Flute—Elementary Class Instruction (1) I, II**
Two hours.
Fundamentals of the clarinet and flute by lecture and acquisition of elementary skills. Not open to students with credit in Music 125A.

325B. *(125B.)* **Oboe and Bassoon—Elementary Class Instruction (1) I, II**
Two hours.
Fundamentals of oboe and bassoon by lecture and 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 Offered at Imperial Valley Campus only.**
Prerequisite: Music 102 or 158B.
Analytical study of music suitable for children of all ages. Background information, musical structure and functions of this music in the lives of children are included.

344. *(144.)* **Folk Music (3) I, II**
Prerequisite: Music 102 or 158B.
The origin and development of folk music; the social instruments and their use. Participation in singing and playing folk music.

345. *(145.)* **Music in Contemporary Life (3) I, II**
Prerequisite: Music 102 or 158B.
Functional music in society to include its psychological, physical and recreational uses; music as communication; the composer, the musician, and the audience.

347. *(147.)* **Perspectives in Music (3) I, II**
Prerequisite: Music 102 or 158B.
Musical understandings from nonperformance aspects and perspectives regarding the relationships of music to the visual arts and the humanities.

351. *(151.)* **Great Music (3) I, II**
Significant music literature of the various historical periods with emphasis on the stylistic characteristics through directed listening.
A. Musical Masterpieces of the 18th and 19th Centuries.
B. Musical Masterpieces of the 20th Century.
C. Masterpieces of Grand Opera.
D. Twentieth Century American Jazz.

353. *(153.)* **Opera Theatre (2) I, II**
Four hours.
Interpretation and characterization of light and grand opera. Specific work in coordination of opera ensemble. Maximum credit eight units.

355. *(155.)* **Ethnic 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 activity.
Prerequisite: Music 258B. Music 358A is prerequisite to 358B.
Continuation of Music 258A-258B. Counterpoint from 18th to 20th century, serial techniques, jazz, electronic music. Individual projects in instrumentation, composition, analysis, non-Western 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.

Performance Organization Courses (Music 370 through 390)

The performance group courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble, and designed to provide students with practical experience in rehearsal techniques.

370. *(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
Five hours.
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.

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.)* **Collegium 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

448A-448B. *(148A-148B.)* **Choral Conducting (1-1) I, II**
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. Harp
V. Classical Guitar
W. Medieval or Renaissance Instruments
X. Classical Accordion
Y. Composition
Z. Non-Western Instruments

496. *(196.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisite: Consent of the department chair.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

507. *(107.)* **Composition Laboratory (1) II**
Three hours of laboratory.
Prerequisites: Music 207 and consent of instructor.
Continuation of Music 207. Maximum credit two units.

541. *(141.)* **Performance Studies Pedagogy (3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Consent of instructor.
Teaching beginning and intermediate applied music. Survey and evaluation of teaching materials. Observation of individual or group lessons.
A. Piano
B. Strings
C. Voice

542. *(142.)* **Performance Studies Laboratory (2) I, II**
One lecture and three hours of laboratory.
Prerequisite: Music 541A is prerequisite to 542A and 541B is prerequisite to 542B.
Practical experience in the teaching of individual or group lessons.
A. Piano
B. Strings
C. Voice

552A-552B. *(152A-152B.)* **History of Music (3-3) I, II**
Prerequisite: Music 258B. Music 552A is prerequisite to 552B.
The chronological development of musical art and forms from the Middle Ages to the present. Analytical score study and assigned recordings. Familiarity with musicological resources through individual assignments.

554. *(154.)* **Music Literature (2) I, II**
Prerequisite: Music 258B.
A concentrated study of the literature in the several areas listed. Analysis by use of scores and of recordings, when available.
A. Chamber Music Literature—Strings
B. Symphonic Literature
C. Keyboard Literature
D. Song Literature

596. Special Topics in Music (1-3)
A specialized study of selected topics from the several areas of music. May be repeated with new content. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Natural Science

In the College of Sciences

Faculty

Emeritus: Merzbacher, Watson
Chair: Mathewson
Professors: Dessel, Ingmanson, Mathewson, Metzger, Shull
Associate Professors: Dowler, Feher, May, Phleger, Springer, Wallace
Assistant Professor: Thompson

Offered by the Department

Teaching major in the physical sciences for the single subject teaching credential.

Physical Science Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements outlined in the section of this catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences; it prepares students for certification to teach chemistry and physics in secondary schools.

Preparation for the major. Biology 100, Chemistry 200, 200L, 201, 201L, 231, 251; Geological Sciences 100 or 104; Mathematics 150, 151; Physics 124A, 124B, 125A and 125B (or 194A and 194B); one unit of laboratory to accompany Geological Sciences 100, Biology 100 or Chemistry 231. (41 units.)

Major. A minimum of 24 upper division units to include Chemistry 310A, 310B, (or 410A, 410B); six units of natural science; and six units from physics. An additional six units from chemistry, physics or natural science to be selected with the approval of the Natural Science Department Teacher Credential Adviser.

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. Emphasis varies with instructor. Natural Science 100A not open to students with credit in Natural Science 102 or 210A.

102A. *(1.)* **Physical Science with Laboratory (4) I, II**
Six hours of lecture and laboratory.
Description same as Natural Science 100A except that laboratory activity is fully integrated with lecture material. Experiments and observations are done when relevant to the subject discussed. Not open to students with credit in Natural Science 100A or 210A. (Formerly numbered Physical Science 102.)

102B. Physical Science II (3) II
Two lectures and three hours of laboratory.
Prerequisite: Natural Science 102A.
Continuation of Natural Science 102A with additional subjects and extension of topics covered in 102A. For students interested in preparation for the major or for those interested in choosing an elective course in physical science.

103. *(3.)* **Experimental Methods in Physical Science (1) I, II**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Natural 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.

110A-110B. Energy in Nature with Laboratory (4-4)
Three lectures and three hours of laboratory.
Prerequisite: Mathematics 103 or competency in mathematics by examination.
An integrated introduction to the natural sciences at the university level. Selected topics from physics, chemistry and biology focused on the themes of energy and the relationships between processes and structures in nature. Weekly laboratory sessions include demonstrations, discussions, problem exercises and experiments.

115. Natural History (1) I, II
Seven meetings and one weekend.
The observational, phenomenological and descriptive study of the physical environment; astronomy, geology and meteorology. Students submit a written report on the study.

210A-210B. *(10A-10B.)* **Structure and Concepts of Physical Science (4-4) I, II**
Three lectures and three hours of laboratory.
Natural 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 Natural Science 100A or 102A.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

305. *(130.)* **Modern Physical Science (3) I, II**
Prerequisite: A college-level course in the physical sciences or life sciences.
Development of scientific models and allied technologies and their influence on the development of societal attitudes and public policy. Examples from contemporary problems such as environmental degradation and energy utilization, climatic change, uses of computers, and armaments.

310-S. *(140-S.)* **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. *(150.)* **Readings in Physical Science (3) I, II**
Reading of selected materials with informal class discussion of topics. Emphasis on the historical background, the philosophical implications and the impact of science on thought and culture.

314. Personalities in Science (1) I, II
Case study in the life and work of individual scientists from the history of science.

315. *(142.)* **History of Science I (3) I, II**
Prerequisites: Completion of the Foundations of Learning requirement in natural science and three units in history, classics sequence of Foundations of Learning.
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**
Prerequisites: Completion of Foundations of Learning requirement in natural science and three units in history, classics sequence of Foundations of Learning.
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, geological sciences, natural science, or physics; and Mathematics 121.
Basic scientific concepts and their historical development with emphasis on the problem of theory construction. The relationship between disciplined imagination and observational fact, as illustrated by selected case histories. Limitations of scientific inquiry.

333. *(55.)* **Technology and Human Values (3) I, II**
Prerequisite: Completion of Foundations of Learning requirement in General Education.
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. (Formerly numbered Natural Science 120.)

400. Seminar (2 or 3) I, II
A directed study of a topic to be chosen by instructor and announced in class schedule. Maximum credit six units.

412A-412B. *(120.)* **Processes and Inquiry in Physical Science (4-4) I, II**
Three lectures and two hours of activity.
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.

430. *(169.)* **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. *(162.)* **The Origins of Life (3) II**
Prerequisite: Completion of general education requirements in science, including Chemistry 200, 200L or Natural Science 100A or 102.
Theories of chemical evolution with emphasis on multidisciplinary aspects involving geology, geochemistry, cosmochemistry and molecular biology.

496. *(196.)* **Advanced Physical Science (1-4) I, II**
Prerequisite: Consent of instructor.
Selected topics in classical and modern physical science. May be repeated with new content. Maximum credit six units.

499. *(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.

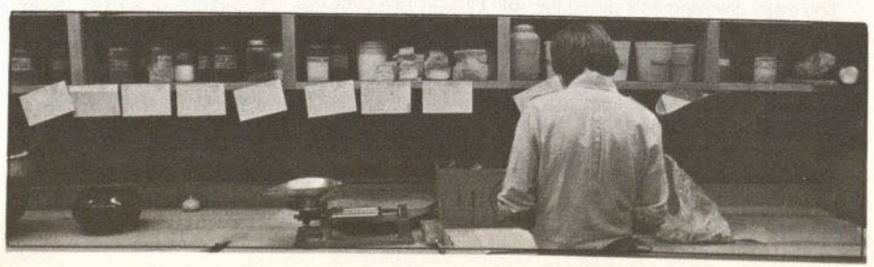
UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

522A-522B. *(135A-135B.)* **Curricula in Physical Science (3-3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Introductory course work in natural science, physics or chemistry.
Principles of physical science as presented in national curriculum study courses such as Project Physics, PSSC, IPS, and PSNS.
May be taken for graduate credit only by candidates for a Master of Arts degree in Education in secondary curriculum and instruction. (Formerly numbered Physical Science 422A-422B.)

GRADUATE COURSES

Refer to the Graduate Bulletin.



Nursing

In the College of Professional Studies

Agency Member of the National League for Nursing

Accredited by the California Board of Registered Nursing
and by the National League for Nursing

Faculty

Emeritus: Coveny, Nye, Sirovica, Thomas
Director: Wozniak
Professors: Black, Johnson, Moses, Salerno, Wozniak
Associate Professors: Flagg, Hines, Laiho, Slutzker, Verderber
Assistant Professors: Clerkin, Hansen, La Monica, Laws, Leslie, Mitchell, Moffett, Rehman, Roth, Wallace, Wong
Lecturers: Colwell, Lucas, Smith, Warren

Offered by Nursing

Major in nursing with the B.S. degree in applied arts and sciences

Standards for Admission

Admission to the University

In addition to the requirements for admission to the University as listed in the section of this catalog on "Graduation Requirements," the following criteria must be met for admission to the University as a nursing major:

1. **High School Course Requirements.** The following courses are required:
   a. One year English composition at junior/senior level.
   b. One year advanced algebra.
   c. One year chemistry with a laboratory.
   d. One year biology.
2. **Transfer Students.** Transfer students will be required to demonstrate the four high school course requirements or introductory college or university course work in the same disciplines.

First-time freshman and transfer student applicants requesting a nursing major will be ranked and evaluated on the basis of performance in required high school courses or introductory college or university course work in the same disciplines. Points will be granted each applicant up to a maximum of 16 with grades of A (4) or B (3). Those applicants who select nursing as a major and meet the high school requirements will be given priority for enrollment and advisement as nursing majors. First-time freshman and transfer student applicants accepted as nursing majors are subject to further screening to determine their eligibility to be admitted into the professional course work.

Admission to the Professional Program in Nursing

1. **Declaration of Major.** Only students who are declared nursing majors at SDSU will have their application considered.
2. **Prerequisite Courses.** The following courses and course grades are required for admission to the nursing program:
   a. Course grade requirement (C or better) in each required university course:
      Chemistry 100 and 100L
      Chemistry 130 and 130L
      Sociology 101
      Psychology 101
   b. Course grade requirement (B or better) in each of these required university courses:
      Zoology 108
      Biology 261

3. **Minimum Grade Point Average**
   Applicants must complete the six prerequisite courses with a minimum overall grade point average of 2.5. (NOTE: The minimum grade point average of the last three nursing classes admitted to Nursing has been 2.9 or better.)
4. **Writing Competency Requirement.** All students must demonstrate their writing competence on one of the following tests:
   a. By a score of 47 on the Standard Written English Test
   b. By a score of 20 on the American College Tests
   c. By a score of 47 on the Scholastic Aptitude Test

   Students who have not achieved the minimum score on the writing competency test must register in University Studies 151 prior to admission to the nursing program.
5. **Additional Point System.** Applicants requesting admission to the professional course work will be ranked and evaluated on the basis of a point system. A maximum of 94 points can be earned in meeting the prerequisite courses, writing competency, recognition of outstanding achievement, practical experience and bilingual ability requirements, and applicants will be ranked in accordance with points earned. In combination with points assigned earlier in the review process, a grand total of 110 points are possible. For specific additional point system allocation, consult the Nursing office.
6. **Health Requirement.** To meet the specific health requirements, a medical examination and immunizations must be completed prior to enrolling in the first nursing course. The medical examination is in addition to the medical required for admission to the University. For specific information concerning immunization series, consult the Nursing Office.
7. **Advanced Placement in Nursing.** Registered nurses from a diploma or an associate degree program, or any student with previous nursing education or clinical experience is eligible to be considered for advanced placement in the nursing major. Upon acceptance into the nursing program, the student may challenge by examination any one or more of the nursing courses. Students eligible for advanced placement should contact an adviser.
8. **Formal Application.** Application to the nursing program must be made during the semester that the student is completing prerequisite non-nursing courses (21 units). Obtain application form at the Nursing Office.

Special Instructions

1. **Change of Major.** Requests for change of major during the 1978-79 academic year will be granted only on a space available basis. Students must be admitted to the University as declared nursing majors.
2. **Second Baccalaureate Degree.** Students requesting a second baccalaureate degree with a major in nursing will be considered by Nursing during the 1978-79 academic year only on a space available basis.
3. **Full-Time Study.** Students enrolled in the nursing program are required to carry a full-time study load. Students with extenuating circumstances may petition the Student Progress Committee for special consideration.
4. **Liability Insurance and Transportation.** Students enrolled in the nursing program are required to provide their own professional liability insurance and transportation to off-campus clinical agencies.

Nursing Major

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

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

A minor is not required with this major.

Nursing majors are eligible to take the State Board Registered Nurse license examination after completing six semesters of the prescribed curriculum. Graduates are eligible to apply for the California Certificate of Public Health Nursing.

Nursing majors are advised to consult with the Nursing Office on a semester basis for program modification or policy revisions.

Preparation for the major. Upon acceptance into the program, Nursing 202, 204, 250, 252; Microbiology 210; Family Studies and Consumer Science 204; three units in personality development and three units in growth and development must be successfully completed before continuation in the upper division courses required for the major.

NOTE: A grade of C or better is required in all nursing or corequisite courses. No nursing course may be repeated more than once.

Progress in the nursing program is dependent upon completion of corequisite and nursing courses in the prescribed sequence as outlined below. While corequisite courses may be completed prior to the specified semester, students will not be permitted to progress to the next semester until both corequisite and nursing courses are completed at each semester.

Major. A minimum of 41 upper division units in nursing to include Nursing 306, 308, 310, 350, 354, 356, 412, 414, 450, and five units selected from Nursing 452 or 454.

Sequence of Courses in the Nursing Curriculum

First Year

First Semester	*Units*	*Second Semester*	*Units*
Chemistry 100, 100L	3	Chemistry 130, 130L	3
Zoology 108	4	Biology 261	5
Sociology 101	3	Psychology 101	3
* Basic Subject	3	** General Education	3
General Education	3	Physical Activities	1
Physical Activities	1		
	17		15

Second Year

First Semester	*Units*	*Second Semester*	*Units*
Microbiology 210	4	FSCS 204	3
Personality Development	3	Growth and Development	3
Nursing 202	5	Nursing 250	4
Nursing 204	3	Nursing 252	6
General Education	3		
	18		16

Third Year

First Semester	*Units*	*Second Semester*	*Units*
Marriage and Family	3	Nursing 350	3
Nursing 306	3	Nursing 354	5
Nursing 308	5	Nursing 356	5
Nursing 310	4	General Education	3
	15		16

Fourth Year

First Semester	*Units*	*Second Semester*	*Units*
Microbiology 370	3	Nursing 450	1
Nursing 412	5	Nursing 452 or 454	5
Nursing 414	5	General Education	9
General Education	3		
	16		15

* Completion of three units in English composition is necessary to be eligible to take the State Board examination.
** Course in oral communication recommended.

LOWER DIVISION COURSES

202. Nursing Science I (5) I, II

Two lectures and nine hours of laboratory.

Prerequisites: Admission to the nursing program. Satisfactory completion or concurrent registration in Microbiology 210; courses in personality development; and concurrent registration in Nursing 204.

Analysis of the nursing process and the role of the professional nurse in utilization of this process. Emphasis on determining and measuring variables relevant to assessment.

204. Nurse—Client Relationships (3) I, II

Prerequisite: Concurrent registration in Nursing 202.

Study of nurse—client communication and its application to the clinical practice of nursing. Emphasis on development of each student's ability to communicate in collaborative health team efforts and in patient care situations.

250. Nursing Science II (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Nursing 202, 204. Satisfactory completion or concurrent registration in Family Studies and Consumer Sciences 204; course in growth and development; and concurrent registration in Nursing 252.

Differentiation of assessment variables and their impact on diagnosis, planning and implementation of care. Laboratory includes experiences with clients having a variety of nursing diagnoses requiring determination of differential priorities in planning and implementing care.

252. Stress in the Health Continuum (6) I, II

Three lectures and nine hours of laboratory.

Prerequisite: Concurrent registration in Nursing 250.

Focus on psychological, social and biological stressors affecting man's health status and the modalities of nursing intervention which promote health. Emphasis on developmental and situational stressors commonly experienced in modern society and man's adaptive and maladaptive behavioral and biological responses from birth through senescence.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

Refer to Honors Program.

306. Nursing Science III (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Nursing 250, 252; satisfactory completion or concurrent registration in a course in marriage and family; concurrent registration in Nursing 308 and 310.

Analysis of the implementation of quality client care and consumer needs and rights. Concepts of qualitative and quantitative client care and exploration of the expected contribution of various health personnel.

308. Adult Health Nursing (5) I, II

Three lectures and six hours of laboratory.

Prerequisites: Nursing 250, 252; concurrent registration in Nursing 306 and 310.

Application of theories of stressors and/or biological responses specifically affecting the adult on the health-illness continuum. Laboratory focuses on the application of the nursing process in implementing preventive, supportive, and restorative therapeutic modalities which assist the adult client to reestablish, maintain, or develop new adaptive responses.

310. Psychosocial Nursing (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Concurrent registration in Nursing 306 and 308.

Theory and clinical laboratory in the application of the nursing process to the care of clients evidencing maladaptive responses to psychosocial stressors. Presentation of theories describing and explaining maladaptive behaviors and application of nursing interventions in a variety of treatment modalities.

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, 323 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. *(116.)* **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 practice 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.

350. Nursing Science IV (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Nursing 306, 308 and 310. Concurrent registration in Nursing 354 and 356.
Analysis of evaluation phase of nursing process as a form of documentation of qualitative care. Emphasis on development of critical elements, criteria, and conclusions in effecting objective evaluation of client care.

354. Maternal-Neonatal Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 356.
A family-centered focus encompassing adaptive and maladaptive responses to stressors in the maternity cycle and their effect on the neonate. Clinical laboratory focuses on the application of nursing theory and process in providing preventive, supportive and restorative care to mothers and neonates.

356. Child Health Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 354.
Stressors affecting the child on health-illness continuum. Nursing theory and laboratory focuses on application of nursing process in providing preventive, supportive and restorative therapeutic modalities in a variety of settings. Emphasis on the child in the family and the necessary intervention to promote adaptation of the child to attain, maintain or regain an optimum level of health.

412. Health Care Systems and Methods (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 350, 354 and 356; satisfactory completion or concurrent registration in Microbiology 370; and concurrent registration in Nursing 414.
Theories and methods of client and personnel management. Focus on the reciprocal effects of the professional nurse's preparation and role and emergent patterns of health care.

414. Community Health Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisite: Concurrent registration in Nursing 412.
Assessment and utilization of community health care concepts and delivery with emphasis on promotion of health, prevention of illness and individual and group teaching techniques. Consideration given to cultural aspects of health care.

450. Assertive Nursing (1) I, II
Two hours.
Prerequisites: Nursing 412, 414; concurrent registration in Nursing 452 or 454.
Subservient and assertive styles in professional practice and their impact on contemporary issues in health care systems.

452. Clinical Nursing in Complex Situations (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 412, 414; concurrent registration in Nursing 450.
Theory and selected laboratory experience in the care of clients in complex situations requiring intensive nursing care. Consideration will be given to student's clinical area of concentration.

454. Ambulatory Nursing in Complex Situations (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 412, 414; concurrent registration in Nursing 450.
Theory and selected laboratory experience in the care of ambulatory clients requiring specific or complex nursing care. Consideration will be given to the student's clinical area of concentration.

480. *(160.)* School Nursing (3)
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. (Formerly numbered Nursing 400.)

481A. *(165A.)* The School Nurse Practitioner (6) Irregular
Four lectures and six hours of laboratory.
Prerequisites: Bachelor's degree in Nursing; Nursing 480.
Primary health care of school age children. Emphasis on the physical assessment. (Formerly numbered Nursing 401A.)

481B. *(165B.)* The School Nurse Practitioner (4) Irregular
Two lectures and six hours of laboratory.
Prerequisite: Nursing 481A.
Theory and supervised practice of assessing the health-illness of children in the school system. (Formerly numbered Nursing 401B.)

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

Oceanography

Administered by the Dean of the College of Sciences

San Diego State University provides preparation for work in the oceans by offering degree programs in fundamental fields supplemented by marine-related course work and oceanographic experience. A minor in oceanography is offered by the Department of Geological Sciences. Interdisciplinary instructional and research activities are coordinated by the Center for Marine Studies, and more detailed information is available there. . Ocean-oriented courses and bachelor's degree programs are available in the departments of Biology, Botany, Chemistry, Civil and Mechanical Engineering, Geography, Geological Sciences, Microbiology, Natural Science, Physics and Zoology. Master's degree with emphasis on marine problems may be earned in these departments. The Ph.D. degree is offered in Chemistry, Ecology and Genetics jointly with the University of California. 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.

UPPER DIVISION COURSES

(Intended for Undergraduates)

320. *(100.)* **The Oceans (3) I, II**

Prerequisites: One introductory college course in a life science and one in a physical science.

Biological and physical aspects of the oceans and their significance to man; problems of modern oceanography.

320L. Oceanography Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Oceanography 320.

Laboratory elective to accompany Oceanography 320. Laboratory and field methods of study in the major areas of oceanography.

400. *(196.)* **Practical Oceanography (6) I, II Cr/NC**

Laboratory, field work, or on-the-job training by arrangement.

Prerequisites: Chemistry 200, 200L, 201, 201L; 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 notifed of selection by the tenth week of the semester preceding the desired interval because of ship berth limitations. Students will normally participate on extended cruises at sea and are advised not to enroll for other courses nor to make employment commitments during the semester.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

541. Oceanography (3) I, II

Prerequisites: Chemistry 200, 200L; Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.

Multidisciplinary examination of the physical, chemical, biological and geological aspects of the marine environment and the relationship of man with the sea. Intended for science majors only.

For additional courses in Oceanography see:

Biology 531. Biological Oceanography
Chemistry 501. Chemical Oceanography
Geological Sciences 540. Marine Geology
Geological Sciences 545. Descriptive Physical Oceanography
Geological Sciences 546. Theoretical Physical Oceanography
Geological Sciences 548. Coastal and Estuarine Physical Oceanography
Microbiology 560. Marine Microbiology
Zoology 510. Marine Invertebrate Zoology

Philosophy

In the College of Arts and Letters

Faculty

Chair: Lauer

Professors: Carella, Crawford, Howard, Koppelman, Lauer, McClurg, Nelson, O'Reilly, Rosenstein, Ruja, Shields, Snyder, Warren, Weissman

Associate Professors: Feenberg, Troxell

Assistant Professor: Weston

Lecturer: Marti

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 in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Nine lower division units in philosophy including Philosophy 120.

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

Major. A minimum of 24 upper division units in philosophy to include Philosophy 301 and either Philosophy 303, 502, and 504, or Philosophy 523, 525 and 528.

Philosophy Minor

The minor in philosophy consists of a minimum of 15 units in philosophy, 12 units of which must be in upper division courses. At least six units must be in one of the following groups:

History: Philosophy 301, 303, 336, 502, 504, 505A, 505B, 508, 509, 532 and 564.

Values: Philosophy 329, 334, 510, 512, 527, 528, 533, 535, 541, 542 and 596.

Knowledge and Reality: Philosophy 521, 522, 523, 525, 531, 537, 575 and 595.

Philosophy 301 is recommended.

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

LOWER DIVISION COURSES

101. *(1.)* **Introduction to Philosophy: Values (3) I, II**

Introduction to philosophical inquiry, with emphasis on problems of value. Each student is encouraged to think independently and formulate his own tentative conclusions.

102. *(2.)* **Introduction to Philosophy: Knowledge and Reality (3) I, II**

Introduction to philosophical inquiry with emphasis on problems of knowledge and reality. Each student is encouraged to think independently and formulate his own tentative conclusions.

103. *(3.)* **Historical Introduction to Philosophy (3) I, II**

Introduction to philosophical inquiry through study of the works of major philosophers in their historical contexts.

120. *(20.)* **Logic (3) I, II**

Introduction to deductive and inductive logic. Logic and language. Analysis of fallacies. Uses of logic in science and in daily life.

299. *(99.)* **Experimental Topics (1-4)**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

300. *(166.)* **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.

329. *(129.)* **Social Ethics (3)**
Prerequisite: Philosophy 101, 102 or 103.
Ethical issues of contemporary life. Individualism vs. collectivism; democracy vs. dictatorship; ethical problems arising in law, medicine, business, government and interpersonal relationships.

334. *(134.)* **Philosophy of Literature (3)**
Prerequisite: Six units of philosophy.
Study of literature of philosophical significance, and of philosophical problems of literature.

336. *(136.)* **Jewish Philosophy (3)**
Prerequisite: Three units of philosophy.
Outstanding men and movements, e.g., Biblical ethics and law; Philo of Alexandria, the rabbinical tradition, the Kabbala, Moses ben Maimon, Moses Mendelssohn and Martin Buber.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisites: Twelve upper division units in philosophy and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

502. *(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.

505A-505B. *(105A-105B.)* **Twentieth Century Philosophy (3-3)**
Prerequisite: Six units of philosophy.
Historical treatment of major philosophical issues, movements and figures in American and European philosophy. Semester I: Emphasis on Great Britain and the United States. Semester II: Emphasis on continental Europe.

508. *(108.)* **Existentialism (3)**
Prerequisite: Six units of philosophy.
The philosophical aspects of Existentialism. Major emphasis is on the diversity of thought within a common approach as this is shown in individual thinkers.

509. *(109.)* **Ordinary Language Analysis (3)**
Prerequisite: Six units of philosophy.
Foundations of linguistic philosophy with emphasis on achieving an awareness of the relationship between thinking and language.

510. *(110.)* **Philosophy of Law (3)**
Prerequisites: Three units of philosophy and three units of political science.
The nature of law and the logic of legal reasoning. An exploration of certain key legal concepts such as causation, responsibility, personality and property.

512. *(112.)* **Political Philosophy (3)**
Prerequisite: Philosophy 101, 102 or 103.
Selected aspects of the political structures within which we live, such as law, power, sovereignty, justice, liberty, welfare.

521. *(121.)* **Deductive Logic (3)**
Prerequisite: Philosophy 120.
Principles of inference for symbolic deductive systems; connectives, quantifiers, relations and sets. Interpretations of deductive systems in mathematics, science and ordinary language. Not open to students with credit in Mathematics 523.

522. *(122.)* **Inductive Logic (3)**
Prerequisite: Philosophy 120.
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.

525. *(125.)* **Metaphysics (3)**
Prerequisite: Six units of philosophy.
Prominent theories of reality, e.g., realism and nominalism, materialism and idealism, teleology and determinism.

527. *(127.)* **Values and Social Science (3)**
Prerequisite: Six units of philosophy.
Analysis and discussion of the nature of values and value-judgment with particular reference to the social sciences. Among relevant issues: the naturalistic fallacy, facts and values; authoritarianism, emotivism, objective relativism; the individual and the community.

528. *(128.)* **Theory of Ethics (3)**
Prerequisite: Six units of philosophy.
Significant and typical value theories and systems and the concrete problems such theories seek to explain. Emphasis will be on moral values.

531. *(131.)* **Philosophy of Language (3)**
Prerequisite: Six units of philosophy.
An introduction to theories of meaning for natural languages and formal systems; concepts of truth, synonymy and analyticity; related epistemological and ontological problems.

532. *(132.)* **Philosophy of History (3)**
Prerequisite: Six units of philosophy.
The nature of history and historical inquiry. As metaphysics: A study of theories of historical development. As methodology: History as science, truth and fact in history, historical objectivity, the purpose of history.

533. *(133.)* **Philosophy of Education (3)**
Prerequisite: Philosophy 101, 102 or 103.
Various philosophical viewpoints concerning education. The functions of education as conceived by major figures in the western philosophical tradition.

535. *(135.)* **Philosophy of Religion (3)**
Prerequisite: Six units of philosophy.
Philosophical examination of issues raised by the religious impulse in man.

537. *(137.)* **Philosophy of Science (3)**
Prerequisite: Six units of philosophy.
The basic concepts and methods underlying contemporary scientific thought. Contributions of the special sciences to a view of the universe as a whole.

541. *(141.)* **History of Aesthetics (3)**
Prerequisite: Philosophy 101, 102 or 103.
Major documents in the history of aesthetics.

542. *(142.)* **Philosophy of Art (3)**
Prerequisite: Six units of philosophy.
The nature of aesthetic experience. Principal contemporary theories of art in relation to actual artistic production and to the function of art in society.

564. *(164.)* **American Philosophy (3)**
Prerequisite: Six units of philosophy.
A systematic and critical study of the work of American philosophers from the Puritans through the Pragmatists. Major emphasis is placed on Peirce, James, Royce, Santayana, Dewey and Whitehead.

575. *(175.)* **A Major Philosopher (3)**
Prerequisite: Philosophy 301.
The writings of one major philosopher. May be repeated with new content. Maximum credit six units applicable to the major. Maximum credit six units applicable on a master's degree.

595. *(195.)* **Selected Topics (3)**
Prerequisite: Six units of philosophy.
A critical analysis of a major problem or movement in philosophy. May be repeated with new content. Maximum credit six units applicable toward the major in philosophy. Maximum credit six units for both 595 and 795 applicable on a master's degree.

596. *(196.)* **Topics in Asian Thought (3)**
Prerequisite: Six units of philosophy.
Selected philosophical themes, traditions or figures, e.g., substantialism and nonsubstantialism in Indian Thought, Chinese Buddhist Schools, Gandhi. Maximum credit six units with three units applicable on a master's degree.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Physical Education

In the College of Professional Studies

Faculty

Emeritus: Cave, Lockman, Schutte, Schwob, Scott, Shannon, Sportsman, Terry, Tollefsen
Chair: Wells
Professors: Andrus, Benton, Carter, Cullen, Fox, Howell, M., Kasch, Murphy, Olsen, A., Olsen, L., Phillips, Sucec, Ziegenfuss
Associate Professors: Barone, Broadbent, Franz, Friedman, Howell, R., Moore, Selder, Wells, Williamson, Willis
Assistant Professors: Aufsesser, Gutowski, Landis, Quinn, Simmons, Smith, Whitby, Wilhelm

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 in the section of this catalog on "Graduation Requirements."

Preparation for the major. Biology 362; Physical Education 141, 176, 190; Psychology 101; Zoology 108. (16 units.)

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

Major. A minimum of 24 upper division units in physical education to include 12 units from Physical Education 371, 376, 476, 560, 561, 570, 585 and 12 units selected with the approval of the adviser.

Physical Education Major

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

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

Emphasis in Athletic Training

Preparation for the major. Physical Education 141, 165, 176, 190; Chemistry 100, 100L, 130, 130L; Family Studies and Consumer Sciences 204; Psychology 101; Zoology 108. (24 units.) Recommended: Physics 107, 107L.

Major. A minimum of 37 upper division units to include Physical Education 345A, 345 I, 368, 369, 371, 476, 560, 561, 563, 565, 567, 570, 585; Biology 362. Recommended: Health Science and Safety 301, 574, 575.

Emphasis in Dance

Preparation for the major. Physical Education 132A, 133A-133B, 134A-134B, 135A-135B, 136A-136B, 153, 154, Zoology 108, Biology 362; and six units selected from the areas of art, drama, and music with the approval of the adviser in dance. (26 units.)

Major. A minimum of 33 upper division units to include Physical Education 450, 451, 452, 453, 454, 455, 550, 551, 552, 553, 556, 557, 560; and four units selected from Physical Education 341A, 341B, 345D, 345E, 345F, 456. In addition to course requirements, the student must be a member of the Choreographer's Ensemble and participate in a minimum of three semesters of dance programs. Substitution for such participation will require approval of the Dance Committee. This major does not meet the teaching credential requirements. Physical Education 398 (3 units), Supervised Field Experience (in an advanced dance area), may be substituted for Physical Education 453.

Physical Education Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Biology 362; Physical Education 141, 176, 190; Psychology 101; Zoology 108. (16 units.)

Major. A minimum of 35 upper division units to include Physical Education 371, 376, 380, 560, 561, 570, 585; two units from each of the following groups for a total of eight units: Physical fitness (345A); team sports (345L, 345M, 345N or 341C); individual sports (345 I, 345J); dance, gymnastics, or combatives (345D, 345E, 345F, 345G, 345H, 345-O, 341B); and six units from Physical Education 322, 331, 341 or 345.

Dance Minor

The minor in dance consists of a minimum of 24 units in physical education to include Physical Education 134A, 134B, 136A, 136B, 153, 154, Zoology 108, and Physical Education 450, 451, 454, 455, 550, 551.

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

Physical Education Minor

Sport Skills and Coaching Area: A minimum of 23 units to include Psychology 101; Physical Education 165, 176, 330, 345 I, 570; four units selected from the Physical Education 331 series; two units of Physical Education 398; and two units selected from Physical Education 345A, 345C, or 345L.

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

Types of Activity Courses

A health history record is required of each student entering the university. Adapted physical education classes to care for special needs are offered. The content of these courses is planned to give each student an opportunity to participate in many activities of carryover value, developmental nature and recreational interest. An opportunity is afforded students to participate in competitive sports in the extramural and intramural programs.

LOWER DIVISION COURSES

Courses offered for one unit credit meet two hours per week or equivalent. "A" signifies a beginning class, "B" intermediate.

101A. *(1A.)* **Physical Fitness and Figure Control (1)**

102A-102B. *(2A-2B.)* **Conditioning (1-1)**

103A-103B. *(3A-3B.)* **Jogging (1-1)**

104A-104B. *(4A-4B.)* **Weight Training (1-1)**

105. *(5A.)* **Individual Adaptives (1)**

Prerequisite: Consent of instructor. Individual exercise programs for those who are handicapped in some respect, or who have functional defects or deficiencies amenable to improvement through exercise. May be repeated for credit.

108A-108B. *(8A-8B.)* **Basketball (1-1)**

109A-109B. *(9A-9B.)* **Soccer (1-1)**

110A-110B. *(10A-10B.)* **Volleyball (1-1)**

111A-111B. *(11A-11B.)* **Softball (1-1)**

112A-112B. *(12A-12B.)* **Field Hockey (1-1)**

113A-113B. *(13A-13B.)* **Flag Football (1-1)**

114A-114B. *(14A-14B.)* **Wrestling (1-1)**

115A-115B. *(15A-15B.)* **Track and Field (1-1)**

116A-116B. *(16A-16B.)* **Golf (1-1)**

117A-117B. *(17A-17B.)* **Archery (1-1)**

118A-118B. *(18A-18B.)* **Tennis (1-1)**

119A-119B. *(19A-19B.)* **Bowling (1-1)**

120A-120B. *(20A-20B.)* **Badminton (1-1)**

121A-121B. *(21A-21B.)* **Handball (1-1)**

122A-122B. *(22A-22B.)* **Fencing (1-1)**

123A-123B. *(23A-23B.)* **Racquetball (1-1)**

124A-124B. *(24A-24B.)* **Sailing (1-1)**

Physical Education 124A is prerequisite to 124B.

125A-125B. *(25A-25B.)* **Men's Gymnastics Apparatus (1-1)**

126A. *(26A.)* **Rhythmic Gymnastics (1)**

127A-127B. *(27A-27B.)* **Women's Gymnastics Apparatus (1-1)**

128A-128B. *(28A-28B.)* **Ice Skating (1-1)**

129A-129B. *(29A-29B.)* **Swimming (1-1)**

130A-130B. *(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.

141. *(41.)* **Physical Education of Children (2)**

Four hours of activity.

Application of the principles of motor learning and muscular fitness to the elementary physical education activity program. Includes a practical field experience with elementary students.

145. *(45.)* **Dance (Men) (2)**

Four hours of activity.

Competency development in dance. Emphasis on skills, movements, facilities and organizational procedures in dance.

147A-147B. *(47A-47B.)* **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.

153. *(53.)* **Introduction to Dance (2)**

Dance as an art form with emphasis on the development of contemporary trends; American dance personalities and their contributions.

154. *(54.)* **Rhythmic Analysis Related to Movement (2)**

Music as related to movement; notation and simple music forms applied to all movement activities; percussion accompaniment; writing of percussion scores, music repertoire for dance.

165. Techniques in Athletic Training (2)

One lecture and three hours of laboratory.

Prerequisite: Zoology 108.

Athletic training techniques and emergency field care of athletic injuries. Theory and techniques of basic athletic first aid, emergency procedures, bandaging and taping.

176. Foundations of Physical Education (2)

Overview of discipline of physical education with a view toward development of a basic philosophy and background for entering profession. Required for all physical education majors and minors.

190. *(90.)* **Skill Competency in Physical Education (2) Cr/NC**
Four hours of activity.
Designed for potential physical education majors and minors as a prerequisite to all professional teaching method course offerings.
Proficiency tests will be given in each area commonly taught in secondary physical education.

UPPER DIVISION COURSES

(Intended for Undergraduates)

320. *(120.)* **Skin and Scuba Diving (2)**
One lecture and three hours of laboratory.
Prerequisites: Medical examination, waiver for hazardous procedures, pass swimming competency test.
Function and knowledge of underwater diving to include diving physiology, hyperbaric conditions, medical hazards, safety procedures associated with scuba diving, proper care and operation of equipment.

322. *(122.)* **Practicum: Life Saving and WSI (2)**
Four hours of activity.
Prerequisite: Pass swimming competency test.
Content designed to qualify expert swimmers in both American Red Cross Life Saving and Water Safety Instructor's Certification. Includes methods and materials for teaching all levels of swimming.

323. Instructor's Course in Swimming for the Handicapped (1)
Two hours of activity.
Prerequisite: Current WSI or successful completion of Physical Education 322.
To develop knowledge of various types of handicapping conditions, as well as how to adapt programs, methods and materials for these conditions. Red Cross certification (WSIH) is given upon satisfactory completion of course.

330. *(130.)* **Physical Welfare of the Athlete (3)**
Two lectures and two hours of activity.
Prevention, diagnosis and treatment of athletic injuries; the use of ergogenic aids; nutrition; the conditioning program, including basic knowledge of appropriate parameters—flexibility, strength, endurance and related areas.

331. *(131.)* **Practicum: Theory and Analysis of Coaching Competitive Sports (2)**
Four hours of activity.
Concentrated study to include mechanical analysis, tactics and strategy, scouting, officiating and rules, and daily-seasonal practice planning in one of the sports listed below.
- **A.** Basketball
- **B.** Football
- **C.** Baseball
- **D.** Track and Field (including Cross Country)
- **E.** Women's Field Sports
- **F.** Additional sports (offered on student demand) may be repeated with new content.

341. *(141.)* **Practicum: Physical Education Activities for Elementary Schools (2)**
Four hours of activity.
Prerequisite: Physical Education 141.
In-depth study of selected physical education activities for elementary school children. Includes teaching techniques, unit planning, progressions and resource materials.
- **A.** Movement exploration activities for children
- **B.** Rhythm and dance activities for children
- **C.** Ball and sports activities for children
- **D.** Track and field activities for children
- **E.** Gymnastic activities for children
- **F.** Perceptual motor activity

345. *(145.)* **Practicum: Physical Education Activities for Secondary Schools (2)**
Four hours of activity.
Prerequisite: Passing competency tests in each activity covered in section.
Selection and care of equipment, skill analysis, teaching progressions, evaluation techniques, organizational procedures and resource materials for selected activities as listed.
- **A.** Weight Training, Physical Fitness
- **B.** Track and Field
- **C.** Track and Field; Softball
- **D.** Folk Dance
- **E.** Square and Ballroom Dance
- **F.** Modern Dance
- **G.** Men's Gymnastics Apparatus
- **H.** Women's Gymnastics Apparatus
- **I.** Tennis, Badminton, Racquetball.
- **J.** Archery, Golf, Handball
- **K.** Speedball, Softball, Touch Football
- **L.** Volleyball, Basketball, Soccer
- **M.** Hockey, Soccer, Flag Football
- **N.** Volleyball, Basketball
- **O.** Combatives

352. *(152.)* **Workshop in Dance (1-2)**
Two hours per unit.
Choreographic techniques and skills with visiting master teachers; written report or project. Maximum credit four units.

362. *(162.)* **Exercise Physiology Laboratory (1)**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physical Education 561.
Laboratory experiences in the application of exercises and the analysis of the results.

364. *(164.)* **Kinesiology—Biomechanics Lab (1)**
Three hours of laboratory.
Prerequisites: Physical Education 560 and 563.
Experiments in application of kinesiology and biomechanics to human movement.

368. *(168.)* **Adapted and Special Physical Education Laboratory (1-4)**
Three hours of laboratory per unit.
Prerequisites: Credit or concurrent registration in Physical Education 567.
Supervised laboratory of practicum experience in adapted or special physical education programs. Maximum credit four units.

369. Practicum in Athletic Training (1-3)
Three hours of laboratory per unit.
Prerequisite: Physical Education 165.
Practical training and clinical applications of basic and advanced techniques of athletic training and sports medicine. Athletic first aid, emergency procedures, bandaging, taping, use of physical therapy modalities, and application of therapeutic exercises to be performed in actual athletic medicine clinics. Maximum credit six units.

371. *(171.)* **Physical Growth and Development (3)**
Principles of human growth; performance as affected by developmental levels and individual differences in structure and function.

376. Socio-Cultural Foundations of Physical Activity (3)
Prerequisite: Physical Education 176.
Integrated approach to understanding of historical, philosophical, and sociological forces shaping development of physical education and sport. (Formerly numbered Physical Education 175.)

380. *(180.)* **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)**

Two hours of activity per unit.

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. Maximum credit six units.

450. Dance Technique: Alignment (3)

Six hours of activity.

Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.

Basic modern dance skills with emphasis on alignment.

451. Dance Technique: Movement Patterns (3)

Six hours of activity.

Prerequisites: Physical Education 450 and 560.

Continuation of development of modern dance skill with emphasis on function of alignment and articulation of the extremities in motion.

452. Dance Technique: Complex Movement Patterns (3)

Six hours of activity.

Prerequisite: Physical Education 451.

Progressively difficult movement patterns based on previously developed skills with emphasis on elevation, rhythm, body design, and dynamic flow of movement.

453. Dance Technique: Performance Qualities (3)

Six hours of activity.

Prerequisite: Physical Education 452.

Advanced modern dance techniques based on skills developed in Physical Education 450 through Physical Education 452 with emphasis on performance qualities in projection, vitality, and executing.

454. Elementary Improvisation (1)

Two hours of activity.

Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.

Exploring improvisation through specific stimulus leading to the acquisition of basic improvisational skills.

455. Intermediate Improvisation (1)

Two hours of activity.

Prerequisite: Physical Education 454.

Practice in more complex arrangements of improvisation.

456. Dance Pedagogy (2)

Four hours of activity.

Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.

Teaching modern dance in the commercial studio environment.

476. Contemporary Socio-Cultural Aspects of Physical Activity (3)

Prerequisite: Physical Education 376.

Historical, anthropological and cultural factors influencing development of sport and physical education in America, and current sociological, philosophical, socio-psychological, and comparative factors influencing role and significance of sport and physical education in modern American society. (Formerly numbered Physical Education 375.)

496. Experimental Topics (1-4)

Refer to the catalog statement on Experimental Topics on page 116. 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 department chair.

Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

550. Choreography: Basic Elements (2)

Four hours of activity.

Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.

Using concepts of space, time, and energy to investigate and explore basic elements of choreography. Studies and compositions emphasizing solo and small group works.

551. Choreography: Large Groups (2)

Four hours of activity.

Prerequisite: Physical Education 550.

Introducing large group works, solo and small group work in organizing more complex arrangements of the basic elements of dance composition. Utilizing music and sound as aural contributions to choreography.

552. Choreography: Form and Content (2)

Four hours of activity.

Prerequisite: Physical Education 551.

Approaching dance as a fundamental means of communication. Recognizing the relationship between form and content.

553. Choreography: Recital (2)

Four hours of activity.

Prerequisite: Physical Education 552.

Choreography of solo and group works utilizing symbioltic relationship of movement, sound, lighting, costuming, and other interdisciplinary media. Presentation of a recital.

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.

557. Dance Criticism (2)

Prerequisite: Physical Education 556.

Artistic aspects of dance in general and specifically modern dance. Professional preparation and function of the dance critic.

560. *(160.)* **Applied Anatomy and Kinesiology (3)**

Prerequisites: Biology 362 and Zoology 108.

Arthrology, 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)**

Prerequisites: Biology 362 and Zoology 108.

Effects of physical activities on the physiological functions of the body.

562. Cardio-Pulmonary Laboratory (2)

One lecture and three hours of laboratory.

Prerequisites: Physical Education 362 and 561.

Cardio-pulmonary evaluation of human subjects for rehabilitative and preventive cardiology including electrocardiography, blood chemistry, ergometry, central and peripheral vascular assessment, body composition, and life-style change.

563. *(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.
Prevention and care of athletic injuries. Sports safety and effects of environment on health and welfare of the athlete. First aid, use of prescribed modalities.

567. Corrective and Orthopedic Physical Education (2)
Prerequisites: Physical Education 560 and 561.
Etiology, characteristics, and programs for children with corrective and/or physically handicapping conditions will be discussed. This will include evaluating and implementing prescribed activities for individuals with these types of conditions.

568. Special Physical Education (2)
Prerequisite: Physical Education 371 or Special Education 500.
Etiologies, characteristics, and education programs for mentally retarded, emotionally disturbed, learning disabled, blind and hearing impaired individuals. Specific programs and activities are discussed relevant to each of disabled groups mentioned.

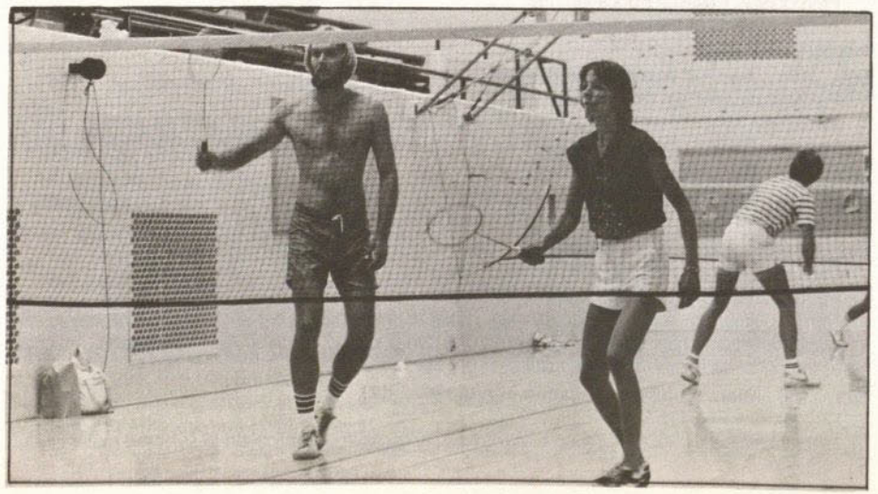
570. *(170.)* **Psychological Bases of Physical Education (3)**
Prerequisite: Psychology 101.
Psychological parameters related to physical performance and the acquisition of motor skills.

585. *(185.)* **Measurement and Evaluation in Physical Education (3)**
Two lectures and two hours of activity.
Elements of statistical techniques appropriate to physical education criteria for test selection; construction and evaluation of tests; and the administration of a testing program in physical education.

596. Selected Topics in Physical Education (1-3)
Selected topics in physical education. May be repeated with new content and approval of instructor. Maximum credit six units applicable on a bachelor's or master's degree.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Physics

In the College of Sciences

Faculty

Emeritus: Clark, Craig, Kalbfell, Moe, Wolter
Chair: Roeder
Professors: Garrison, Lilly, Morris, Nichols, Piserchio, Rehfuss, Roeder, Skolil, Smith, Snodgrass, Teasdale, Templin
Associate Professors: Burnett, Cottrell, Davis, Shore
Assistant Professor: Solomon
Lecturer: Shackelford

Offered by the Department

Master of Arts degree in physics.
Master of Science degree in physics.
Master of Science degree in radiological physics.
Major in chemical physics with the B.S. degree in applied arts and sciences.
Major in physics with the A.B. degree in liberal arts and sciences.
Major in physics with the B.S. degree in applied arts and sciences.
Single Subject teaching credential in physical sciences in the area of physics.
Minor in physics.

Chemical Physics Major

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

Preparation for the major. Chemistry 200, 200L, 201, 201L, or 204A-204B, 231, 231L and 251; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L. (43 units.)

Major. A minimum of 39 upper division units to include Chemistry 410A-410B, 431, 431L, 520A and 550; Mathematics 340A; Physics 311, 350A-350B, 354A-354B, 357 and 510.

Physics Major

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

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

A minor in mathematics is required. It should include Mathematics 150, 151, 152, 340A-340B, and three units from Mathematics 521A, 532 or 534A. Mathematics 302 is acceptable for students preparing for elementary or secondary teaching. Students planning graduate work in physics should take additional mathematics beyond these listed.

Preparation for the major. Chemistry 200, 200L, 201, 201L, or 204A-204B; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L. (35 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. Students should choose French, German or Russian. Refer to section of catalog on "Graduation Requirements."

Major. A minimum of 27 upper division units in physics and mathematics to include Physics 311, 350A-350B, 354A-354B, 357 and 400. The student should choose the remaining units with the guidance of the departmental adviser. For preparation for graduate work in physics, the student should choose from Physics 306, 408, 496, 498A, 498B, 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 in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Chemistry 200, 200L, 201, 201L, or 204A-204B; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L. (35 units.)

Major. A minimum of 39 upper division units in physics and mathematics to include Mathematics 340A-340B, Physics 311, 313, 350A-350B, 354A-354B, 357, 400, 498A, 498B, and six units of electives.

Physics

For the Single Subject Teaching Credential in Physical Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education for the A.B. degree in applied arts and sciences.

The requirements for the single subject teaching credential in physical sciences in the area of physics are the same as those listed for either the A.B. degree in liberal arts and sciences or the B.S. degree in applied arts and sciences. The department is currently applying for a waiver of the State Examination for the Teaching Credential in Physics.

Physics Minor

The minor in physics consists of a minimum of 15 units in physics, 11 units of which must be in upper division courses. The department requires that the upper division units used for the minor be selected from the courses in one of the areas listed below. Prerequisites: Physics 194A, 194B or 195 and 195L, 196 and 196L, 197 and 197L; Mathematics 122 or 152.

Classical and Modern Physics (appropriate for Mathematics, Chemistry, Astronomy, Engineering, Geology, Physical Sciences and all life sciences). Upper division courses selected from Physics 306, 311, 313, 350A, 350B, 354A, 354B, 357, 400, 408, 510, 532, 542, 552, 570.

Scientific Instrumentation (also appropriate for all science majors above except mathematics). Physics 311, 313 and 413 must be taken. One (more, if desired) additional course to be selected from Physics 415, 416, 418.

Radiation Physics. In lieu of the prerequisites listed above, student may substitute Physics 115A-115B or 124A-124B and 125A-125B, Mathematics 122 and 123 or 152. (Suitable for all majors, except mathematics; particularly recommended for life science majors.) Physics 302, 303, 311, 561, and three units of electives.

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

LOWER DIVISION COURSES

Maximum credit 15 units for any combination of Physics 107, 115A-115B, 124A-124B, 125A-125B, 195, 195L, 196, 196L, 197, 197L, or 198, 198L.

103. Physics for Poets (3)

Course in physics as natural philosophy. How physical theories grow and change through interaction with experiment.

107. *(5.)* **Introductory Physics (3) I, II**

Prerequisite: Concurrent registration in Physics 107L.

Some of the more important phenomena and concepts in physics with practical illustrations and applications. Not open to students with credit for Physics 115A-115B, 124A-124B, 195, 195L, 196, 196L, 197, 197L, or 198, 198L.

107L. Introductory Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Concurrent registration in Physics 107. Physics 107 and 107L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

109. Physics of Musical Sounds (3) I, II

Physiological properties of sound, the ear and its perception of sounds, the effects of acoustical environment, the behavior of musical instruments, and the various applications of electronics to the production, reproduction and compositions of music.

115A-115B. *(1A-1B.)* **Elementary Physics (4-4) I, II**

Two lectures, one discussion and three hours of laboratory.

Prerequisites: Two years of high school mathematics. Physics 115A is prerequisite to 115B. Not open to students who have had high school physics.

This course is for students in those liberal arts and preprofessional courses not requiring physics with calculus. Physics 115A is not open to students with credit in 124A or 195, 195L; 115B is not open to students with credit in 124B, 196, 196L, 197, 197L, or 198, 198L.

Foundations of wave motion, behavior of light, energy, mass, evolution of ideas concerning planetary motion. Emphasis on evolution of fundamental concepts.

124A-124B. *(2A-2B.)* **General Physics (3-3) I, II**

Prerequisite: Physics 124A is prerequisite to 124B. Recommended: For Physics 124A, concurrent registration in 125A; for Physics 124B, concurrent registration in 125B.

This course is for students in those liberal arts and preprofessional courses not requiring physics with calculus. Physics 124A is not open to students with credit in 115A or 195, 195L; 124B not open to students with credit in 115B, 196, 196L, 197, 197L, or 198, 198L.

125A-125B. *(3A-3B.)* **Physical Measurements (1-1) I, II**

Three hours of laboratory.

Prerequisite for 125A: Credit or concurrent registration in Physics 124A.

Prerequisite for 125B: Physics 125A and credit or concurrent registration in Physics 124B.

A laboratory course to accompany Physics 124A-124B and 194A-194B. Semester I: Properties of matter, mechanics, heat and sound. Semester II: Electricity, magnetism and light. Physics 125A is not open to students with credit in 115A or 195, 195L; 125B not open to students with credit in 115B, 196, 196L or 197, 197L.

149. *(11.)* **Special Topics in Physics (1-2) I, II**

Prerequisite: Credit or concurrent registration in Physics 115B, 124B, or 196, 196L; or credit in Physics 107, 107L.

Individual study and laboratory work in the area of the student's major interest. Each student will be assigned a member of the staff who will supervise his work.

194A-194B. Fundamentals of Physics (3-3) I, II

Prerequisite: Credit or concurrent registration in Mathematics 122 or 150.

Course provides a thorough basis in mechanics, heat, electricity, magnetism, optics, and modern physics in a two-semester calculus based sequence.

195. *(4A.)* **Principles of Physics (3) I, II**

Prerequisite: Credit or concurrent registration in Mathematics 150. Certain students may, with consent of the Department, substitute credit in Mathematics 122 for the indicated Mathematics courses.

This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics, wave motion, heat, electricity and light. (Formerly numbered Physics 195A.)

195L. Principles of Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Concurrent registration in Physics 195.

196. *(4B.)* **Principles of Physics (3) I, II**

Prerequisites: Physics 195, 195L and credit or concurrent registration in Mathematics 151. Concurrent registration in Physics 196L. Certain students may, with consent of the Department, substitute credit in Mathematics 122 for the indicated mathematics course. Engineering students may substitute Engineering Mechanics 220 for Physics 195, 195L.

This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics, wave motion, heat, electricity and light. (Formerly numbered Physics 195B.)

196L. Principles of Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Concurrent registration in Physics 196. Physics 196 and 196L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

197. *(4C.)* **Principles of Physics (3) I, II**

Prerequisites: Physics 196, 196L or 198, 198L, and credit or concurrent registration in Mathematics 152. Concurrent registration in Physics 197L. Certain students may, with consent of the Department, substitute credit in Mathematics 122 for the indicated mathematics course.

This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics, wave motion, heat, electricity and light. (Formerly numbered Physics 195C.)

197L. Principles of Physics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Concurrent registration in Physics 197. Physics 197 and 197L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

198. *(4E.)* **Principles of Physics for Engineers (3)**

Prerequisites: Completion of high school physics or equivalent and credit or concurrent registration in Engineering Mechanics 200. Concurrent registration in Physics 198L.

Designed to prepare the engineering student for Physics 197 without duplication of the material on mechanics present in the engineering curriculum. Open only to engineering majors. Not open to students with credit in Physics 195, 195L or 196, 196L. (Formerly numbered Physics 195E.)

198L. Principles of Physics for Engineers Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Concurrent registration in Physics 198. Physics 198 and 198L are taught together and a single grade will be given. A student will not receive credit for one course without the other.

215. *(73.)* **Introductory Electronics (3) I, II**

Two lectures and three hours of laboratory.

Prerequisites: Physics 115B, or 124B and 125B, or 196, 196L; and Mathematics 122.

Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 311.

299. *(99.)* **Experimental Topics (1-4)**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

Refer to Honors Program.

301. Energy and Conservation (3) I, II

Prerequisite: Completion of Basic Subjects and Foundations of Learning components of General Education.

Course devoted to the fundamental physical concepts underlying energy, its conversion, utilization and conservation. Not open to physics majors.

302. *(118.)* **Nuclear Energy (2)**

Prerequisite: Physics 107, 107L or 115B, or 124B and 125B, or 197, 197L.

Nuclear sources of energy, introduction to nuclear reactors, radiation problems associated with nuclear reactors and devices, plowshare, radioactivity in the environment.

303. *(121.)* **Radiation Physics (3)**

One lecture and six hours of laboratory.

Prerequisite: Physics 115B, or 124B and 125B.

X-rays, radioactivity, interaction of radiation with matter, and methods of measurement. May not be used in the physics major.

304. *(111.)* **Concepts in Modern Physics (3) I, II**

Prerequisite: Physics 107, 107L, 115B, or 124B.

Modern developments in physics for nonphysics majors, including relativity, introductory quantum theory, and atomic, nuclear and solid state physics.

306. *(106.)* **Optics (3)**

Prerequisite: Mathematics 340A.

Reflection, refraction, dispersion, interference, diffraction, double refraction and polarization, with applications to optical instruments, wave propagation, radiation, spectra and the nature of light.

307. *(107.)* **Optical Design (3)**

Prerequisite: Physics 197, 197L.

Ray tracing, aberrations, matrix methods, optical instrumentation.

311. *(103.)* **Electronics for Scientists (3) I, II**

Two lectures and three hours of laboratory.

Prerequisites: Physics 115B, or 124B and 125B, or 196, 196L; and Mathematics 122; and upper division standing in one of the physical or life sciences.

Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 215.

313. *(104.)* **Advanced Electronics (3) I, II**

Two lectures and three hours of laboratory.

Prerequisite: Physics 215 or 311.

Conventional and operational amplifiers, oscillators, pulse and digital electronics, with emphasis on their use in the modern physics laboratory.

315. *(123.)* **Methods of Electronic Instrumentation (2)**

Six hours of laboratory.

Prerequisite: Physics 115B, or 124B and 125B, or 196, 196L.

AC and DC circuits, diodes, transistors, operational amplifiers, digital electronics, and detection systems (including nuclear counting). Designed to introduce science majors to modern electronic instrumentation. May not be used in the physics major.

350A-350B. *(100A-100B.)* **Classical Physics (3-3) I, II**

Prerequisites: Physics 197, 197L and credit or concurrent registration in Mathematics 340A.

Semester I: Newtonian mechanics and wave motion. Semester II: Electrostatics and magnetostatics.

354A-354B. *(102A-102B.)* **Modern Physics (3-3) I, II**

Prerequisite: Physics 197, 197L. Physics 354A is prerequisite to 354B.

Semester I: Atomic and molecular physics, solid state physics, atomic spectroscopy and introductory quantum mechanics. Semester II: Kinetic theory, classical and quantum statistics, and thermal radiation.

357. *(116.)* **Advanced Physical Measurements (3)**

One lecture and six hours of laboratory.

Prerequisites: Physics 197, 197L and credit or concurrent registration in Physics 215 or 311.

A course stressing laboratory experiments and measurements chosen from the major areas of physics.

400. *(170.)* **Electromagnetic Theory (3) I, II**

Prerequisites: Mathematics 340B, Physics 350B and 354B.

Electrostatics and magnetostatics treated by vector methods; Maxwell's equations. Electromagnetic induction, radiation and wave propagation.

408. *(175.)* **Advanced Mechanics (3) I**

Prerequisites: Mathematics 340B and Physics 350B.

Special theory of relativity, generalized coordinates. Lagrangian and Hamiltonian formulations, normal coordinates, theory of vibrations and introduction to continuum mechanics.

413. *(163.)* **Electronic Instrumentation (2) I**

Six hours of laboratory.

Prerequisite: Physics 313.

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 197, 197L.

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 and concurrent registration in Mathematics 340B.
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. *(193.)* **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.

431A-431B. *(135A-135B.)* **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 (1-4) 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. *198A.* **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. *(198B.)* **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 to be arranged in each case. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

510. *(190.)* **Introductory Quantum Mechanics (3)**
Prerequisites: Mathematics 340B, Physics 350B and 354B.
The physical basis of the quantum theory and its mathematical formulation in terms of Schroedinger's wave equation.

532. *(180.)* **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)**
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.
Wave motion and its application to the production, transmission and reception of sound. Development of acoustic circuits using electroacoustic analogs.

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)**
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.

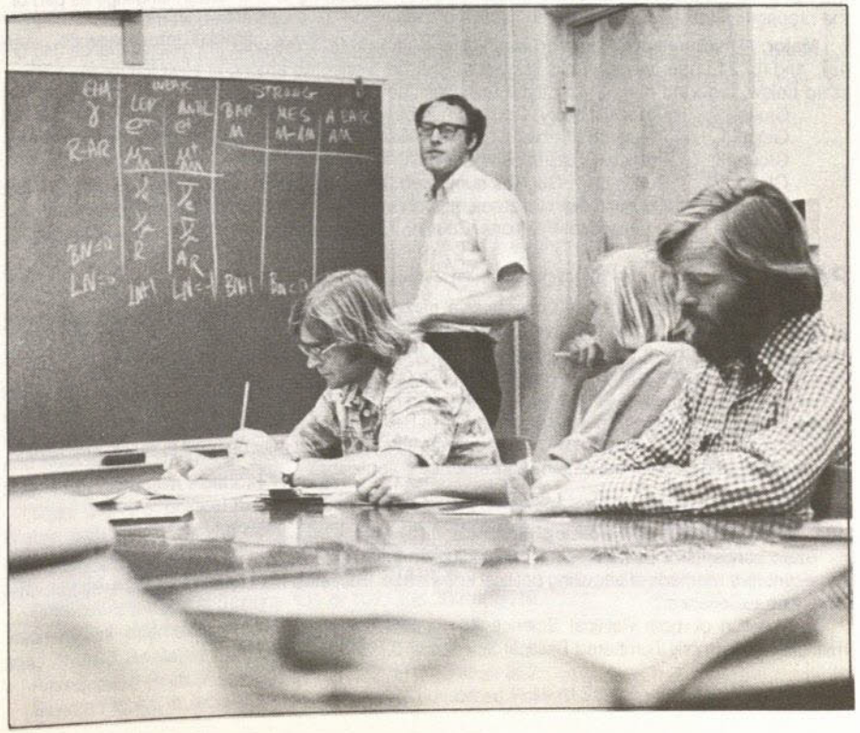
561. *(148.)* **Nuclear Physics Laboratory (3) II**
One lecture and six hours of laboratory.
Prerequisites: Physics 303 or 357, Mathematics 123 or 152.
Techniques and instrumentation for the detection, identification and measurement of the properties of nuclear radiations and particles, and their use in the study of nuclear reactions.

564. *(151.)* **Nuclear Physics (3)**
Prerequisite: Physics 510.
Nuclear Phenomena, theory of the nucleus, cosmic rays, and high-energy reactions of particles.

570. Relativity (3)
Prerequisites: Mathematics 149 or 520A, 531 or 340B, and Physics 350B and 354B.
Relative coordinates, Lorentz transformation, covariant formation of the laws of physics, applications of special relativity, introduction to curved space time, cosmology.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Political Science

In the College of Arts and Letters

Faculty

Emeritus: Generales, Leiffer
Chair: Nesvold
Professors: Andrain, Crain, Feierabend, Funston, Gripp, Hofstetter, Janssen, Johns, Kahng, Miles, Nesvold, Padgett, Schultze
Associate Professors: Anderson, Conniff, Cutter, Hobbs, Lewin, Loveman, Soule, Terrell
Assistant Professors: Fairlie, Jones, Keiser, Strand
Lecturer: Crowley

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 in the section of this catalog on "Graduation Requirements."

Students majoring in political science must complete a minor in another field to be approved by the chair of the major department.

Preparation for the major. Political Science 101, 102, 103 and three units of either statistics or logic. (12 units.)

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

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 301A to 313, and 514.
Group II.	Research Methods. Courses numbered 515A-515B.
Group III.	Politics. Courses numbered 320 to 344 and 522 to 543-S.
Group IV.	Public Law. Courses numbered 345 to 354 and 546 to 550.
Group V.	Comparative Government. Courses numbered 356 to 374 and 555 to 571.
Group VI.	International Relations. Courses numbered 375 to 394 and 577 and 579.

Political Science Minor

The minor in political science consists of a minimum of 18 units in political science to include Political Science 101, 102 or 103; twelve of the 18 units must be in upper division courses and at least nine of these units must be selected from one of the following subject matter areas:

Political Theory and Research Methods (Groups I and II)
Politics and Public Law (Groups III and IV)
Comparative Government and International Relations (Groups V and VI)

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

LOWER DIVISION COURSES

101. *(1.)* **Introduction to Political Science (3) I, II**
Basic concepts of political science including an introduction to the scope of the discipline and representative methods of acquiring political knowledge. Illustrative materials drawn primarily from the American experience.
Completion of both Political Science 101 and 102 will meet all requirements in American Institutions. (Formerly numbered Political Science 110.)

102. *(2.)* **Introduction to American Government and Politics (3) I, II**
The origin and development, structure and operation of the government of the United States, national, state and local.
Completion of both Political Science 101 and 102 will meet all requirements in American Institutions. Political Science 102 will meet the requirements in U.S. Constitution and California government. (Formerly numbered Political Science 120.)

103. *(3.)* **Introduction to Comparative Government (3) I, II**
Analytical models and techniques for examination of the problems of decision-making and control in various political systems. Emphasis on patterns of political action in various cultural contexts. (Formerly numbered Political Science 130.)

201. *(4.)* **Elementary Statistics for Political Science (3)**
Prerequisites: Political Science 101 and 102, and Mathematics 103 or qualification on mathematics placement examination.
Quantitative methods in political science. Tabular and graphic presentation, measures of central tendency, simple correlation and sampling techniques. Not open to students with credit for another course in statistics. (Formerly numbered Political Science 140.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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 (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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**
Prerequisites: Twelve upper division units in political science and consent of the instructor.
Individual study. Maximum credit six units.

Political Theory (Group I)

301A-301B. *(111A-111B.)* **Theory of the State (3-3)**
Prerequisite: Political Science 301A is prerequisite to 301B.
Development of political ideas from the Golden Age of Greece until the French Revolution. Relevance of theory to a critical understanding of concrete political and social problems involving power, freedom, equality, justice and action. 301A emphasizes Plato, Aristotle, Augustine, Aquinas, and Marsilius of Padua. 301B stresses major political theorists such as Machiavelli, Hobbes, Locke, and Rousseau. (Formerly numbered Political Science 501A-501B.)

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. *(106A.)* **Socialist Political Thought (3) I, II**
Prerequisites: Political Science 101 or 102, and 302 or 301B.
Socialist thought from an historical perspective.

304. *(106B.)* **Socialist Political Thought (3) I, II**
Prerequisites: Political Science 101 or 102, and 301B or 302.
Selected topics in socialist thought. (Formerly numbered Political Science 504.)

305. *(105.)* **American Political Thought (3) I, II**
The origin and development of American political ideas from colonial times to the present. (Formerly numbered Political Science 505.)

310. *(110.)* **Politics and the Arts (3) I, II**
Prerequisites: Political Science 101 and 102.
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.

313. *(113.)* **The Theory of Political Inquiry (3)**
Prerequisites: Political Science 101, 102 and 103.
Philosophical bases of science with reference to political science. Concepts, concept formation, theory building and verification. (Formerly numbered Political Science 513.)

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

514. *(114.)* **Problems in Political Theory (3)**
Prerequisite: Six upper division units in political theory.
Research methods in political theory; intensive development of selected issues.

Research Methods (Group II)

515A-515B. *(100A-100B.)* **Research Methods in Political Science (3-3) I, II**
Prerequisite: Political Science 201. Political Science 515A is prerequisite to 515B.
The research process, from research design through data processing, analysis and interpretation. Problems of application to election statistics, census data, roll-call records, sample survey data and biographical information.

Politics (Group III)

UPPER DIVISION COURSES

(Intended for Undergraduates)

320. *(115.)* **American Institutions (3) I, II**
The principles of the Constitution of the United States of America, and a survey of the political and social institutions which have developed under the Constitution. Meets the graduation requirement in the United States Constitution and California state and local government. When taken with Political Science 305, 321 or 522, will also meet requirements in American history, institutions and ideals. Not open to students with credit in Political Science 102.

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**
Prerequisites: Political Science 102.
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 102.
Communication as a political process; the effects of political communications on individuals and groups.

332. *(132.)* **Minority Political Thought and Politics in the United States (3) I, II**
Political attitudes, behavior and thought of selected minority groups.

334. Politics of the Environment (3) I, II
Analysis of political process as it shapes environmental policy in a world characterized by finite resources. Emphasis on expanding national and international claims made upon these resources.

335. *(130.)* **Government and Public Policy (3)**
Prerequisite: Political Science 102.
Theory and practice of process of formulating public policy, roles of administrators, legislators, courts, interest groups and political parties; public agencies and public interest, case studies in formulating public policies.

338. *(125.)* **The Legislative Process (3) I, II**
A detailed analysis of legislatures. Special attention will be devoted to the impact of dynamic factors on formal procedures.

340. *(128.)* **Internship in Politics (2-6) I, II, S**
Prerequisites: Three upper division units within Group III and consent of instructor. Students will be assigned selectively to functional areas of politics, such as political party headquarters, elective public offices and nonpartisan political groups for work under joint supervision of activity heads and the course instructor. Participation will include project and internship conferences.

344. *(131.)* **Special Problems in American Politics (3) I, II**
Prerequisites: Political Science 101 and 102 and three upper division units within Group III.
Intensive exploration of selected issues in the field of American politics.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

522. *(118.)* **Urban Politics (3)**
Prerequisite: Political Science 101 or 102.
The processes by which social conflicts in American urban areas are represented and regulated. Urban political culture; ecology; group development and activity; power structures; and reform movements are surveyed. The character of the urban political "problem" and proposed solutions are evaluated.

523. *(119.)* **Community Political Behavior (3)**
Prerequisite: Political Science 101 or 102.
The studies of structure of community power are summarized and critically evaluated. The issues of community conflict are treated both by case study and comparative methods. Examples are drawn primarily from American-urban experience.

530. *(120.)* **Political Parties (3) I, II**
Prerequisite: Political Science 102 or 320.
A critical analysis of the political party as a part of the process of government; party organization and activities; nominating and campaign methods; theories and functions of the party system; party responsibility. The function of the two-party system in American government.

531. *(126.)* **Political Groups and Movements (3) I, II**
Prerequisite: Political Science 101 or 102.
Pressure group activity, lobbies, mass movements; factors which explain origins and motivations of group behavior; votes, money, information, protest as political resources; theories of pluralism, power elite and mass society; class and ethnic politics.

536. *(124.)* **The American Presidency (3) I, II**
Prerequisites: Political Science 101 and 102.
Analysis of principal institutions, functions and problems of the presidency and federal executive branch. Attention given to presidential leadership, staffing, executive-legislative relations and policy formation.

537. *(129.)* **The Politics of Bureaucracy (3) I, II**
Prerequisites: Political Science 101 and 102.
An analysis of the bureaucracy as an actor in the political system.

Public Law (Group IV)

UPPER DIVISION COURSES

(Intended for Undergraduates)

345. *(136.)* **Constitutional Government (3) I, II**
Prerequisites: Political Science 101 and 102.
Constitutionalism as a concept of legal and political philosophy; foundations of American constitutionalism; origin and framing of the American Constitution; philosophy of the American Constitution; application of constitutional principles to contemporary political situations and problems.

348. *(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 101 and 102, and three upper division units within Group IV.
Intensive exploration of selected issues in the field of constitutional law.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

546. *(138.)* **Law and the Political System (3)**
Forces influencing the making of law; relationship between social and legal change; nature and limits of the judicial function.

547A-547B. *(139A-139B.)* **American Constitutional Law (3-3)**
Prerequisite: Political Science 547A is prerequisite to 547B.
Principles of American Constitutional law. Includes judicial review, the federal system, the separation of powers, the nature of selected Congressional powers, and the liberties protected by the constitution against national and state action. Meets the graduation requirement in the United States Constitution.

550. Jurisprudence (3) I, II
Prerequisite: Political Science 101 or 102 or three upper division units within Group IV.
Theoretical foundations of law; relationship between legal and political philosophy; development of law and legal systems.

Comparative Government (Group V)

UPPER DIVISION COURSES

(Intended for Undergraduates)

356. *(185.)* **Governments of Continental Europe (3) I, II**
The political systems of countries of western continental Europe. (Formerly numbered Political Science 556.)

357. *(180.)* **Government of England (3) II**
The structure and functioning of the English parliamentary system with emphasis on present-day political principles and parties. (Formerly numbered Political Science 557.)

359. *(181.)* **Government of the Soviet Union (3) I**
Theory and practice of government in the Soviet Union, with some attention to foreign affairs. (Formerly numbered Political Science 559.)

364. *(192.)* **Political Change in Contemporary Africa (3) II**
General pattern of nationalism in Africa south of the Sahara. Theories of social change and general features of contemporary African political development. (Formerly numbered Political Science 564.)

370. *(182.)* **Political Violence (3)**
Prerequisite: Political Science 101, 102 or 103.
Underlying conditions, expressions and consequences of violence within political systems.

372. Democracy and Mass Society (3)
Impact of contemporary world on processes and ideology of democracy in various national settings.

374. *(198.)* **Special Problems in Comparative Politics (3) I, II**
Prerequisites: Political Science 101, 102, 103 and three upper division units within Group V.
Intensive exploration of selected issues in the field of comparative politics.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

555. *(190.)* **Comparative Political Systems (3) I, II**
Prerequisite: Political Science 103.
An examination of selected political and governmental systems for purposes of comparative study and analysis to determine similarities, differences and general patterns and universals among political systems.

558. *(186.)* **Comparative Communist Governments (3) I, II**
The interrelations between the theory and practice of modern communism as found in representative communist systems.

561. *(191.)* **Governments and Politics of the Developing Areas (3) I, II**
Prerequisite: Political Science 101 or 103.
Internal political systems, governmental structures and the foreign policies of developing nations.

562. *(187.)* **Governments and Politics of the Far East (3)**
The internal political structure and foreign policies of China, Japan and Korea.

563. *(189.)* **Government and Politics of the Middle East (3)**
The governmental and political structures of representative states in the Middle East including Turkey, Israel and the Arab states.

566. *(194.)* **Political Change in Latin America (3)**
Prerequisite: Political Science 101 or 103.
General pattern of politics and political development in Latin America with an emphasis on those features which condition domestic and foreign policy making.

567. *(195.)* **Political Systems of Latin America (3)**
Prerequisite: Political Science 566.
Domestic and international politics of selected Latin American states.

568. *(184.)* **The Mexican Political System (3)**
Prerequisite: Political Science 101 or 103.
Principal factors in Mexican governmental decision making. Ideology, political groups, tactics of leaders and governmental structure.

571. *(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)

UPPER DIVISION COURSES

(Intended for Undergraduates)

375. *(170A-170B.)* **International Relations (3) I, II**
Political, economic, cultural and social forces responsible for various patterns of international conflict among nation states and other transnational actors. (Formerly numbered Political Science 375A-375B.)

376. *(172.)* **International Organization (3) I, II**
Prerequisites: Political Science 101 and 102.
International organization both as institutions and as processes, including the United Nations, regional organizations, multinational corporations, international stratification, development of international law, international integration and disintegration. (Formerly numbered Political Science 576.)

378. *(171.)* **The Conduct of American Foreign Relations (3) I**
The legal, administrative and political organizations by which American foreign policies are formulated and implemented.

381. *(176.)* **International Relations of the Developing Nations (3)**
Prerequisite: Six units of political science.
Cooperation and conflict between the developing nations and relations of such nations with the developed countries. (Formerly numbered Political Science 581.)

382. *(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. (Formerly numbered Political Science 582.)

390. *(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. (Formerly numbered Political Science 590.)

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 101, 102 and three upper division units within Group VI.
Intensive exploration of selected issues in the field of international politics.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Portuguese

In the College of Arts and Letters

Faculty
Chair: Segade
Assistant Professor: Silverman

Offered by the Department of Spanish and Portuguese Languages and Literatures

Minor in Portuguese.
Courses in Portuguese.
Major work in Portuguese is not offered.

Portuguese Minor

The minor in Portuguese consists of a minimum of 15 units in Portuguese, six units of which must be in upper division courses. Recommended: History 552A-552B.

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

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Portuguese may be counted as the equivalent of Portuguese 101; three years the equivalent of Portuguese 102; and four years the equivalent of Portuguese 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 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.

201. *(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. (Formerly numbered Portuguese 203.)

202. *(4.)* **Intermediate (4)**
Prerequisite: Portuguese 201.
Continuation of Portuguese 201. (Formerly numbered Portuguese 204.)

211. *(10.)* **Conversation (2)**
Prerequisite: Portuguese 102.
Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. (Formerly numbered Portuguese 210.)

212. *(11.)* **Conversation (2)**
Prerequisite: Portuguese 211.
Continuation of Portuguese 211. (Formerly numbered Portuguese 211.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

301. *(101A.)* **Advanced Oral and Written Composition (3)**
Prerequisite: Portuguese 202.
Oral and written composition in Portuguese, based on models from modern Portuguese and Brazilian literature. (Formerly numbered Portuguese 301A.)

302. *(101B.)* **Advanced Oral and Written Composition (3)**
Prerequisite: Portuguese 202.
Oral and written composition in Portuguese, based on models from Modern Portuguese and Brazilian literature. (Formerly numbered Portuguese 301B.)

485. *(185.)* **Selected Studies (3)**
Topics in Luso-Brazilian language, literature, culture and linguistics.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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.

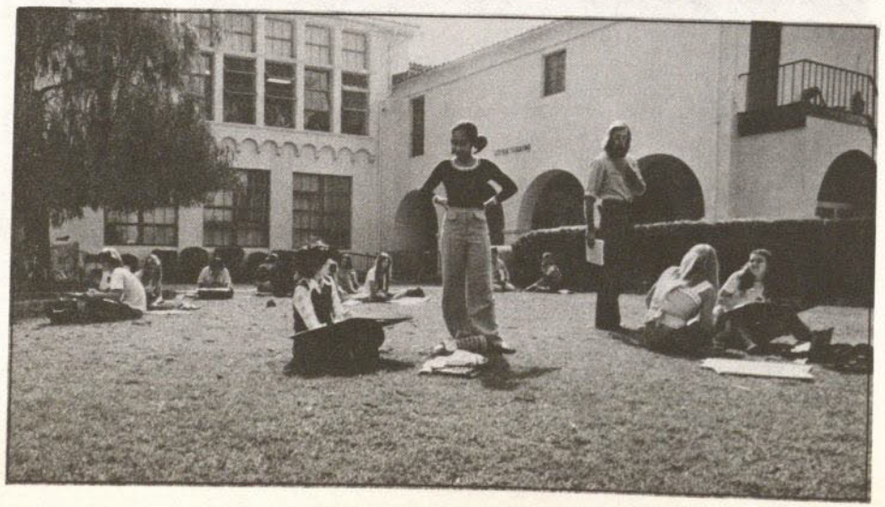
499. *(199.)* **Special Study (1-3) I, II**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

534. *(134.)* **Portuguese Literature (3)**
A study of important movements, authors and works in the literature of Portugal from its beginnings to the present.

535. *(135.)* **Brazilian Literature (3)**
A study of the important movements, authors and works of the literature of Brazil from the colonial period to modern times.



Psychology

In the College of Sciences

Faculty

Emeritus: Carlson, Kidwell, McCollom, Peiffer, Steinmetz, Treat, Turner, Voeks
Chair: Grossberg
Professors: Alf, Bryson, J., Dicken, Feierabend, Franzini, Gallo, Graf, Graham, Grossberg, Harari, Harrison, Hillix, Hunrichs, Kaplan, O., Karen, Kass, Kinnon, Koppman, Leckart, Leukel, Levine, McDonald, Mollenauer, O'Day, Parker, Penn, Plotnik, Radlow, Rodin, Sattler, Schulte, Segal, Sheposh, Stevens, Yaremko
Associate Professors: DeFran, Hornbeck, Kaplan, R., Litrownik, Lynn, Price, Psomas, Sand, Smith, Spinetta
Assistant Professors: Borges, Bryson, R., Fenson, Lee, McCordick, Saccuzzo, Scollay
Lecturers: Brown, Hillyard

Offered by the Department

Master of Arts degree in psychology.
Master of Science degree in psychology.
Major in psychology with the A.B. degree in liberal arts and sciences.
Minor in psychology.

Psychology Major

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

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

A minor is not required with this major.

Two plans are provided for the major in psychology: **Plan A** for those students who wish to extend their liberal arts education in the field of psychology; and **Plan B** for those students expecting to pursue the study of psychology beyond the A.B. degree.

Plan A

Plan A is for a nonprofessional major in psychology and is designed to provide the student with a greater understanding of human behavior as the emphasis in his liberal arts education. The recommended pattern of courses for this program is not designed to facilitate graduate and professional study in psychology.

Preparation for the major. Psychology 101, 210 and 260. (9 units.) Recommended courses in related fields: Six units in biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

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

Major. A minimum of 24 upper division units in psychology to include Psychology 330, 340, 350 and 351. It is expected that each student under Plan A will select, with the assistance of his adviser, a pattern of courses in line with his particular objectives in pursuing Plan A.

To facilitate the purpose of Plan A the following courses in other departments are recommended as electives: Biology 350, 549; Economics 330; and courses in family studies and consumer sciences.

Plan B

The purpose of Plan B is to facilitate the specific preparation of those students who wish to pursue graduate and professional preparation in clinical, industrial and personnel, social, and theoretical-experimental psychology.

Preparation for the major. Psychology 101, 210, 260, and 270. (12 units.) Recommended courses in related fields: Six units in biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

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

Major. A minimum of 24 upper division units in psychology to include Psychology 350, 405, 410; and one of the following: 411, 412, 413, 414, 415, 416, 417 or 418; and ten units selected from courses in consultation with the departmental adviser.

Psychology Minor

The minor in psychology consists of 21-26 units selected from one of the following areas:

Experimental: Psychology 101, 210 and 270 or equivalent; Mathematics 103; 14 units of upper division psychology to include Psychology 410 and three of the following: Psychology 316, 411, 414, 416, 417, 517, 587.

Industrial/Organization: Psychology 101 and 270 or equivalent; Mathematics 103; 12 units of upper division psychology to include Psychology 320, 405, and two of the following: Psychology 321, 322, 326, 342. (21-22 units.)

Personality and Social: Psychology 101, 210 and 260; 12 units of upper division psychology of which nine must be selected from Psychology 330, 340, 350 and 351. (21 units.)

Physiological: Psychology 101, 210, 260 and 270 or equivalent; Mathematics 103; 11 units of upper division psychology to include Psychology 410, 460* and either 413 or 561. (26 units.)

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

* Additional prerequisites are required for this course.

Approved Courses for Liberal Studies Majors (Group B).

Lower Division Courses: Psychology 101, 110, 210 and 260.
Upper Division Courses: Psychology 330, 340, 350, 351 and 454.

LOWER DIVISION COURSES

101. *(1.)* **Introductory Psychology (3) I, II**
Facts, principles, and concepts which are basic to understanding human behavior.

110. *(10.)* **The Evaluation of Psychological Literature (3)**
Designed to increase the nonpsychologist's ability to evaluate psychological and quasi-psychological writings. Topics include methods of generating information, concept of controlled observations, interpretation of data, pitfalls in decision making and aids to critical thinking. Practical experience in evaluation will be obtained through the criticism of current articles and other activities.

150. *(12.)* **Psychology of Individual Adjustment (3)**
Prerequisite: Psychology 101.
An examination and interpretation of the factors which go into the making of the person as he adapts himself to the social world about him. The development of the normal personality.

210. *(40.)* **Principles of Learning and Perception (3) I, II**
Prerequisite: Psychology 101.
The nature of psychological inquiry. Emphasis on principles and basic experimental data of learning and perception.

260. *(50.)* **Introduction to Physiological Psychology (3) I, II**
Prerequisite: Psychology 101.
Physiological mechanisms underlying the psychological phenomena of sensation, perception, emotion, motivation, learning and psychosomatic disorders.

270. *(70.)* **Statistical Methods in Psychology (3) I, II**
Prerequisites: Psychology 101, and Mathematics 103 or qualification on the mathematics placement examination.
Quantitative methods in psychology. Measures of central tendency and variability, graphic methods and percentiles, linear correlation, applications of the normal probability curve, chi-square, and an introduction to statistical inference.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301-S. *(180-S.)* **Contemporary Problems in Psychology (1) S**
Lectures open to the public.
A series of six weekly lectures by visiting psychologists on subjects related to current research problems. Reading and reports required of students enrolled for credit. Maximum credit three units.

316. Operant Behavior (3)
Prerequisite: Psychology 210.
Contingencies of reinforcement, stimulus control, response shaping, aversive control, and other basic principles of operant behavior applied to the understanding and modification of human behavior.

320. *(121.)* **Personnel and Industrial Psychology (3) I, II**
Prerequisites: Psychology 101, and 270 or statistics in another field.
Psychological principles applied to industrial problems of selection, placement and training.

321. *(123.)* **Organizational Psychology (3) I, II**
Prerequisite: Six units of psychology.
The interplay of men and organizations. Psychological literature of the individual and his motivation to work, working in groups, industrial organizations, communications and conflict in industrial organizations.

322. *(120.)* **Consumer Psychology (4)**
Two lectures and six hours of laboratory.
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.

326. *(133.)* **Principles of Personnel Interviewing (3)**
Prerequisite: Psychology 101.
Psychological factors in interviewing; interviewing techniques. Supervised practice in interviewing for purposes of personnel selection, appraisal and development.

330. *(106.)* **Developmental Psychology (3) I, II**
Prerequisite: Psychology 101.
The psychological development of the normal individual from conception through childhood, adolescence, maturity, and old age. Stress is laid upon the interdependence of the various periods of the individual's life. Not open to students with credit in Elementary Education 372 and Family Studies and Consumer Sciences 270.

335. *(107.)* **Psychology of Later Maturity (3) II**
Prerequisite: Psychology 101.
The psychological, physiological, and sociological factors influencing behavior in the later years of life.

340. *(145.)* **Social Psychology (3) I, II**
Prerequisite: Psychology 101.
The major problems and findings concerning group behavior and group membership, the socialization of the individual, and processes of social interaction. Not open to students with credit in Sociology 440.

342. *(122.)* **Public Opinion Measurement (3) I**
The history, methods and problems of public opinion and attitude measurement. Emphasis will be placed on the polling of consumers and voters. Students will be given field experience.

347. *(147.)* **Psychology of Contemporary Social Problems (3)**
Prerequisite: Psychology 101.
Discussion of social issues and problems of importance to the contemporary world, from the point of view of psychological theory, method and knowledge.

350. *(150.)* **Abnormal Psychology (3) I, II**
Prerequisite: Six units of psychology.
The causes, symptoms, and modification of behavior disorders with emphasis on neurosis, psychosis, and personality disorder.

351. *(131.)* **Psychology of Personality (3) I, II**
Prerequisite: Psychology 101.
Principles of personality functioning and adaptation.

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: Six upper division units in psychology to include one of the following: Psychology 330, 350, or 351.
Theory and review of research in the area of personality.

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.

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 three units of biology and Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of physiological psychology. Surgical and histological techniques; control of autonomic responses using biofeedback and computerized data acquisition; includes basic electronics for biological scientists.

414. *(114.)* **Experimental Psychology: Comparative (4)**
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of comparative psychology.

415. *(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.

452. *(152.)* **Introduction to Counseling and Therapy (3) I, II**
Two lectures and two hours of activity.
Prerequisites: Twelve upper division units in psychology to include Psychology 351 or 386 and 350.
A survey of theory, methods and research in psychological approaches to personality and behavior change. Practice in basic interviewing and critical analysis of interviews. Not open to students with credit in Psychology 650 or Counselor Education 660.

453. *(153.)* **Advanced Abnormal Psychology (3)**
Prerequisite: Psychology 350.
An intensive study and evaluation of research methodology and current literature concerning the neuroses, psychoses, aphasias, ataxia, mental defect, and psychopharmacology.

454. *(109.)* **Mental Deficiency (3) I, II**
Prerequisite: One of the following: Psychology 330, Elementary Education 362 and Secondary Education 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.

481. *(179.)* **Philosophical Issues in Psychology (3)**
Prerequisite: Twelve units of psychology.
Modern empiricism and the philosophy of science as related to issues in contemporary psychology.

484. *(174.)* **Theories of Perception (3)**
Prerequisite: Psychology 410.
Study of research and theory in the areas of sensation, perception, and attention.

496. *(100.)* **Selected Topics in Psychology (1-4)**
Prerequisite: Six units of psychology.
Intensive study in specific areas of psychology, topic to be announced in the class schedule. Maximum credit six units.

497. *(197.)* **Senior Project (1-3) I, II**
Prerequisites: Twelve units of psychology and consent of instructor.
An individual investigation and report on a research project. Maximum credit six units.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisite: Consent of department chair.
Individual study, including library or laboratory research and a written report. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

517. Psychology of Verbal Behavior and Learning (3)
Prerequisites: Psychology 210 and 270.
Analysis of linguistic and cognitive processes within the context of social behavior. (Formerly numbered Psychology 317.)

551. Clinical Psychology: Theory and Practice (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350, 405 and consent of instructor.
Clinical assessment, theory and practice of behavior change, and professional ethics. Not open to students with credit in Psychology 451 and 653.

561. *(141.)* **Neural Bases of Behavior (4)**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 260 or six units in the biological sciences, and consent of instructor.
Elements of neurology and psychobiology with emphasis on sensory, central, and motor mechanisms. (Formerly numbered Psychology 461.)

570. *(170.)* **Advanced Statistics (3) I, II**
Prerequisite: Psychology 270.
Further study of quantitative methods in psychology with emphasis on methods of correlation, chi-square, and contingency, and an introduction to the analysis of variance. (Formerly numbered Psychology 470.)

571. *(171.)* **Correlational Analysis (3)**
Prerequisites: Psychology 270 and consent of instructor.
Quantitative methods in psychology with emphasis on methods of correlation, multiple correlation, partial correlation, and factor analysis. Not open to students with credit in Psychology 471 and 771.

580. *(177.)* **History of Psychology (3) I, II**
Limited to psychology majors with senior standing or graduate students.
The historical background of modern psychology. Not open to students with credit in Psychology 480 and 680.

587. *(275.)* **Advanced Principles of Learning (3)**
Prerequisites: Psychology 210, 270 and consent of instructor.
The empirical data, basic principles and theoretical positions of major learning theorists. Not open to students with credit in Psychology 487 and 711.

596. Selected Topics in Psychology (3)
Prerequisite: Six units of psychology.
Intensive study in specific areas of psychology. Topic to be announced in the class schedule. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.

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
Chair: Kitchen
Professors: Bigger, Clapp, Gazell, Gilbreath, Gitchoff, Kitchen
Associate Professors: Boostrom, Hamilton
Assistant Professors: Corso, Gupta, Rea, Ross, Stock, Walshok

Offered by Public Administration and Urban Studies

Master of City Planning degree.
Master of Public Administration degree.
Master of Science degree in criminal justice administration.
Major in criminal justice administration with the B.S. degree in applied arts and sciences. (Refer to this section of the catalog on Criminal Justice Administration.)
Major in public administration with the A.B. degree in applied arts and sciences.
Minor in public administration.

Public Administration Major

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

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

A minor is not required with this major.

Preparation for the major. Political Science 102, Economics 101 and 102, one additional 3-unit social science course, Business Administration 210A-210B or 212, Business Administration 180, a course in statistics (3 units - may be taken in upper division), and Public Administration 220. (25 units.)

Major. A minimum of 36 upper division units to include Public Administration 301, 330, 341, 450, 310 or 312 or 315, 497 or 498; and additional upper division courses selected with approval of the departmental adviser, including a 3-unit course in statistics if not taken in the lower division. Within this program, students may elect to specialize in urban management. Interested students should seek guidance from an adviser in public administration.

Public Administration Minor

The minor in public administration consists of 24 units to include Political Science 102 and a course in statistics or Business Administration 180, Public Administration 301, 310 or 312 or 315, 330, 341, and two additional courses with the consent of a public administration adviser.

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

Certificate in Public Administration

This certificate is designed primarily for persons who hold administrative or managerial positions or for those who seek to prepare for such responsibilities. Previous academic experience is not a prerequisite; nor need the program be accompanied by work toward a degree. Candidacy will be established by the director of the program. The awarding of the certificate requires completion of an

approved pattern of eight courses with a minimum grade point average of 2.5 (C+).

For further information, consult the director, Public Administration Certificate Program.

The department's undergraduate courses fall into three main areas:

(1) ***Criminal justice.*** Most relevant are courses numbered Criminal Justice Administration 301, 310, 320, 321, 330 and 531.

(2) ***Public administration.*** Most relevant are courses numbered Public Administration 301, 305, 310, 312, 330, 340, 341, 450, 460, 462, 530, 531, 540, 570 and 580.

(3) ***Urban studies.*** Most relevant are courses numbered Public Administration 320, 510, 512 and 520.

LOWER DIVISION COURSES

220. Administrative Report Writing (3)

Study and practice of various methods used to develop effective writing skills applicable to communication in the public sector. This course will not satisfy the general education requirement in English composition.

299. *(99.)* **Experimental Topics (1-4)**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

Refer to the Honors Program.

301. *(140.)* **Concepts and Issues in Public Administration (3)**

Theory and practice of governmental administration in differing environments; role of administrators in public policy; issues facing administrators, techniques of administration.

305. *(141.)* **Studies in Public Administration (1-3) I, II**

Offered only in Extension.

Analysis of selected administrative processes and problems of governmental agencies, their legal and political relations to other agencies and to the public. May be repeated with new content with consent of instructor.

310. *(143.)* **Management of Urban Governments (3) I, II**

Problems of local units of government in the urban environment. Organization and function of local agencies. Emphasis on California.

312. *(142.)* **Management of State Governments (3) I, II**

Administrative and constitutional problems of state management in the American federal system. Emphasis on California.

315. *(153.)* **Management of the Federal Government (3) I, II**

Prerequisite: Public Administration 301.

Problems in the administration of the federal government: for example, leadership, specialization, unity of command, oversight.

320. *(160.)* **Principles of Planning (3) I, II**

An introduction to community planning: regional, county, and city. Consideration of the Master Plan, including its purposes, contents, and method of adoption.

330. *(144.)* **Public Personnel Administration (3) I, II**

Analysis of personnel problems. Supervision and management of public employees and public organizations in an age of change.

340. *(145.)* **Administrative Behavior (3) I**

Social, psychological, and behavioral theories of organization; concepts of administrative leadership; organization and the individual; emphasis on governmental organizations.

341. *(152.)* **Administrative Management (3) I, II**

Areas and problems of administrative research; methods of analyzing structures and procedures in organizations; planning and administration of programs; design of forms; job classification and salary surveys; preparation of administrative reports.

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.

450. *(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. (Formerly numbered Public Administration 550.)

460. *(147.)* **Administration and Public Policy Development (3) I, II**

Process of formulating public policy with emphasis on the role of public agencies.

462. *(135.)* **Selected Topics in Public Affairs (3)**

Selected topics in the administration of public policy and problems of public administrative organization. May be repeated with new content. Maximum credit six units.

463. Science, Technology and Public Policy (3) I, II

Scientific and technological innovations currently being introduced into public organizations and their impact on the public policy-making process, and effects of government regulations and policy on scientific and technological developments in society.

496. Experimental Topics (1-4)

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

497. *(197.)* **Investigation and Report (3) I, II**

Analysis of special topics. Admission by permission of instructor.

498. *(198.)* **Internship in Public Administration (2-6) I, II Cr/NC**

Prerequisites: Public Administration 301, 341 and all lower division required courses; credit or concurrent registration in Public Administration 330 or 340 and 450; senior standing and a "B" (3.0) average in the major.

Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences.

499. *(199.)* **Special Study (1-3) I, II**

Prerequisites: Twelve upper division units in public administration and consent of instructor.

Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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.

570. *(136.)* **Administrative Law (3) II**
Prerequisite: Public Administration 301.
The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action. (Formerly numbered Public Administration 470.)

580. *(149.)* **Comparative Public Administration (3) II**
Prerequisite: Public Administration 301.
Administrative organization and process of selected foreign and American governments. Analysis of the cultural basis of administrative systems.

GRADUATE COURSES

For graduate courses in Public Administration and Urban Studies and City Planning, refer to the Graduate Bulletin.

Recreation

In the College of Professional Studies

Faculty

Emeritus: Butler
Chair: Peterson
Professor: Hanson
Associate Professors: Duncan, Geba, Lamke, Peterson
Assistant Professors: Hutchinson, Namba
Lecturers: Dustin, Hatcher, Howat, Morse

Offered by the Department

Major in recreation administration with the A.B. degree in applied arts and sciences.
Minor in recreation.

Recreation Administration Major

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

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

The major in recreation administration may be planned with an emphasis in one of the following four areas: (1) Youth-Family Agency Leadership, (2) Outdoor Recreation, (3) Park and Recreation Management, or (4) Recreation Rehabilitation.

A minor is not required with this major.

Emphasis in Youth-Family Agency Leadership

Preparation for the major. Recreation 101, 104, 107, 110, 208, 284; Physical Education 141, 145; Psychology 101; Sociology 101. (28 units.)

Major. A minimum of 40 upper division units to include Recreation 340, 464, 465, and 484 or 498; Health Science and Safety 330; Industrial Arts 301; Journalism 480; Psychology 330; nine units selected from Psychology 340, 347, 351, 454; Sociology 513, 514, 525, 557; and eight units selected from Recreation 351, 485, 548, 549, 575; Art 387; Drama 310; Industrial Arts 402; Music 344, 345; Physical Education 322, 341C, 345D, 345 I, 345J.

Emphasis in Outdoor Recreation

Preparation for the major. Recreation 101, 104, 110, 205, 284; Biology 100, 100L, 130; Geography 101; Geological Sciences 100, 101; Zoology 150 or 160. (33 units.)

Major. A minimum of 36 upper division units to include Recreation 465, 485, 486, 575; Geography 370, 575; Health Science and Safety 330; Zoology 314; and 11 units selected from Anthropology 441; Biology 320, 528; Botany 312; Business Administration 350, 351; Journalism 480; Psychology 340; Recreation 484, 498, 548, 549; Zoology 430, 517, 518.

Emphasis in Park and Recreation Management

Preparation for the major. Recreation 101, 104, 107, 110, 284; Psychology 101; Sociology 101; six units selected from Art 101; Business Administration 210A, 290; English 100 or 101; Economics 100; Music 102; Physical Education 132A, 133A, 133B; Political Science 103; Recreation 208; Speech Communication 191. (27 units.)

Major. A minimum of 38 upper division units to include Recreation 340, 465, 484 or 498, 575; Journalism 480; Public Administration 301, 310; 12 units selected from Industrial Arts 301; Psychology 330; Public Administration 320, 330, 341, 450; Sociology 514, 525, 557; six units selected from Botany 312; Geography 370, 371, 575; Health Science and Safety 330; History 540; Recreation 350, 351, 485, 548, 549.

Emphasis in Recreation Rehabilitation

Preparation for the major. Recreation 101, 104, 107, 110, 208, 284; Business Administration 290; English 100 or 101; Physical Education 138; Psychology 101; Speech Communication 191; Zoology 108. (35 units.)

Major. A minimum of 42 upper division units to include Recreation 350, 351, 352, 452, 465, 498 (12 units); Health Science and Safety 330; Biology 362; and nine units selected from Recreation 340; Drama 310; Journalism 480; Music 344; Psychology 330, 335; Physical Education 322, 341A, 341B, 345D, 345E, 345F; Sociology 523, 527.

Recreation Minor

The minor in recreation consists of a minimum of 23 units in recreation to include Recreation 101, 104, 107, 110, 208, 340, 465, and three units selected from Recreation 351, 485, 548, 549, 575.

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

LOWER DIVISION COURSES

101. *(60.)* **Community Recreation (3) I, II**
Scope of community recreation; basic philosophy of leisure time agencies; organizations for youth; program planning; playground practices; basic systems of organizational and policy formation.

104. *(40.)* **Challenges of Leisure (3) I, II**
Study of leisure and its impact on contemporary life; issues affecting recreation in today's urbanized society.

107. *(70.)* **Recreation Leadership (3) I, II**
Two lectures and three hours of laboratory.
Program planning, principles of group leadership, conduct of social recreation, low organized games and special events, playground management.

110. *(80.)* **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.

205. Wilderness and the Leisure Experience (3) I, II
Use and abuse of natural resources for recreational purposes. Firsthand study of the effects of increased leisure on wilderness areas. Field experiences required.

208 Recreational Arts (3) I, II
Two lectures and three hours of laboratory.
Theory and practice in activity areas such as elementary handicrafts, puppetry, song leading, rhythmics, recreational dramatics and storytelling.

284. *(84.)* **Supervised Field Work (3) I, II Cr/NC**
Prerequisites: Credit or concurrent enrollment in Recreation 107 and 275 hours experience in recreation leadership.
Observation and participation in community recreation leadership. Practical experience in a variety of recreational settings. Minimum of one hour per week in class plus eight hours per week at an agency.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

340. *(140.)* **Conduct of Recreational Sports (2) I, II**
Two lectures plus outside practical experience in the conduct of recreational sports programs.
Organization of competition, community sports programs, administration of intramural athletics, and techniques of officiating.

350. *(150.)* **Scientific Foundations of Recreation Therapy (3) I, II**
Theoretical principles of therapy and prevention. Survey of medical and psychiatric pathology and terminology.

351. *(151.)* **Recreation for Special Populations (3) I, II**
Two lectures and three hours of laboratory.
Analysis of the sociopsychological aspects of special populations and their implications for leisure time pursuits. Field experience is included.

352. Professional Foundations of Recreation Therapy (3) I, II
Analysis of present day policies, programs, implementation and future aspects of professional principles of recreation therapy.

452. Clinical Methodology of Recreation Therapy (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Recreation 350, 351, 352.
Integration and application of clinical principles and therapeutic procedures. Emphasis on methodology and refinement of skills.

464. Private Agency Management (3) I, II
Prerequisite: Recreation 101.
Role of private-voluntary agencies in our society; fund raising; group work principles; interagency cooperation; working with committees, boards and volunteers.

465. *(165.)* **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.

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.

486. Interpretative Techniques in Outdoor Recreation (3) I, II
Concepts of interpretation. Role of the interpreter. Designing nature trails, exhibits and centers. Audiovisual aids to interpretation.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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) I, II, S Cr/NC**
Minimum of 20-40 laboratory hours per week.
Prerequisite: Fifteen units in recreation courses including Recreation 465.
Students will be assigned to 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. Maximum credit twelve units.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

548. *(148.)* **Aquatic Administration (3)**
Management of swimming pools, beaches, lakes and marinas; safety factors; legal requirements; health standards; facilities and programming. (Formerly numbered Recreation 448.)

549. *(149.)* **Camp Administration (3)**
Prerequisite: Recreation 110.
Operation of resident, day and travel camps. Staff management, health and safety, finances, food services, maintenance, planning and publicity. (Formerly numbered Recreation 449.)

575. *(175.)* **Management of Recreation Areas and Facilities (3) I, II**
Prerequisite: 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. (Formerly numbered Recreation 475.)

GRADUATE COURSES

Refer to the Graduate Bulletin.

Religious Studies

In the College of Arts and Letters

Faculty

Chair: Downing
Professors: Anderson, Friedman, Jordan
Associate Professors: Downing, Khalil, Sparks, Swyhart
Lecturers: Hamdoun, Huntsberry

Offered by the Department

Major in religious studies with the A.B. degree in liberal arts and sciences.

Teaching major in social science (emphasis in religious studies) for the single subject teaching credential. Refer to section on Social Science.

Minor in religious studies.

Religious Studies Major

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

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

A minor is not required with this major.

Preparation for the major. Religious Studies 101, 201; Philosophy 101 or 102. (9 units.)

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

Major. A minimum of 24 upper division units in religious studies to include either Religious Studies 301 or 305, at least three units from courses listed in Western Religious Traditions below, at least three units from Eastern Religious Traditions, at least three units from Religion and Culture, and Religious Studies 498. Six of the 24 upper division courses required for the major may be taken from those courses other than religious studies courses which are included in Religion and Culture below.

Western Religious Traditions: Religious Studies 310, 312, 314, 316, 318, 330, 340, 520, 522.

Eastern Religious Traditions: Religious Studies 501, 503, 506, 508.

Religion and Culture: Religious Studies 350, 351, 353, 360, 361, 363, 365, 524.

Religious Studies

For the Single Subject Teaching Credential in Social Science

For a description of the social science major for the single subject teaching credential with an emphasis in religious studies, refer to this section of the catalog under Social Science.

Religious Studies Minor

The minor in religious studies consists of a minimum of 15 units to include at least three lower division units in religious studies, and 12 units from one of the three areas listed below:

Western Religions: Religious Studies 301 or 305, 310, 312, 314, 316, 318, 330, 340, 342, 343, 520, 522.

Eastern Religions: Religious Studies 501, 503, 506, 508.

Religion and Culture: Religious Studies 350, 351, 353, 360, 361, 363, 365, 524.

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

LOWER DIVISION COURSES

101. *(20.)* **World Religions (3) I, II**
Major figures, attitudes and teachings of world religions. (Formerly numbered Religious Studies 100.)

201. Ways of Understanding Religion (3)
Examples of major approaches to study of religious phenomena, and central issues in methodology. (Formerly numbered Religious Studies 200.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(100A.)* **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.

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.

330. Topics in Judaism (3)
Prerequisites: Religious Studies 101, 201, 301.
Selected topics such as early Hebrew religion, medieval religious thought, mysticism, modern Judaism from the emancipation to the Holocaust, contemporary thought. May be repeated with different content for up to six units.

331. The Talmudic Period (3)
Background and development of Talmudic literature emphasizing the history of the literary process; the Mishnah and the Gamara; ethical and legal textual materials in translation.

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.
Chief data and major approaches in the study of individuals' religious behavior and experiences. Special attention to relevant problems in world religions and philosophical views of man.

351. *(130.)* **Theory and Practice of Worship (3)**
The symbolic structure of devotional performance.

353. The Human Dimension of Religion and Psychology (3) II
Prerequisite: Three units of religious studies.
The meeting of religion and psychology. Selected religious thinkers and selected psychologists and personality theorists from the psychoanalytic, behavioral and humanist traditions. May be repeated with new content. Maximum credit six units. (Formerly numbered Religious Studies 353A-353B.)

354. Religion and Society (3)
Prerequisite: Three units of religious studies.
Theological and religious interpretations of the social dimension of human existence. Critique of social science inquiry into traditional and contemporary forms of religious life.

360. *(131A.)* **Religion, Music and the Plastic Arts (3)**
The relations between religion, music, painting, sculpture and other visual arts in major cultural traditions.

361. *(131B.)* **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 101 or 201.
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 (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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 Western Religious Traditions, three units from Eastern Religious Traditions, and three units from Religion and Culture.
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**
Prerequisite: Twelve upper division units in religious studies.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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 201, 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 201, 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 201; and 360, 361, 501, 503, 506 or 508.
Oracular traditions of East and West, with special attention to the *I Ching* and the *Tarot.*

520. *(150.)* **Religious Consciousness in American Society (3)**
Prerequisite: Three units of religious studies.
Critical investigation of the traditions which have helped to shape religious pluralism within American society.

522. *(151.)* **Religion in America (3)**
Prerequisite: Religious Studies 520.
Selected topics in religion in America, such as Deism, transcendentalism, pragmatism, church-state relations, Jewish identity, etc. May be repeated with new content. Maximum credit six units.

524. Religion and Public Education (3)
Prerequisite: Valid teaching credential or enrollment in a credential program.
Examination of federal and state legislation and guidelines of boards of education affecting the teaching about religion in the public schools. Teaching materials and curriculum will be evaluated in the light of these contexts.

580. *(180.)* **A Major Figure (3) I, II**
Prerequisites: Religious Studies 101 or 201; 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 101 or 201, 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

Chair: Fetzer
Professors: Dukas, Fetzer, Kozlik

Offered by the Department of Germanic and Slavic Languages and Literatures

Master of Arts degree in Russian.
Major in Russian with the A.B. degree in liberal arts and sciences.
Teaching major in Russian for the single subject teaching credential in foreign languages.
Minor in Russian.

Russian Major

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

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

Students majoring in Russian must complete a minor in another field to be approved by the departmental adviser in Russian.

Preparation for the major. Russian 101, 102 (or 105 in lieu of 101 and 102), 201, 202, 211 and 212. (20 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 24 upper division units in Russian to include Russian 301, 302, 305A-305B; and 12 units in period literature, or six units in period literature and six units in Russian linguistics.

Russian Major

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in Russian is required for the degree.

Preparation for the major. Russian 101, 102 (or 105 in lieu of 101 and 102), 201, 202, 211, and 212. (20 units.)

Teaching major. A minimum of 30 upper division units in Russian to include 301, 302, 305A-305B, 570, 580, 581; six units of electives in Russian; and European Studies 330 or 331.

Proficiency Examination: Before taking a student teaching assignment in Russian, the candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of Germanic and Slavic Languages and Literatures. The candidate must consult with the chairman of the Department of Germanic and Slavic Languages and Literatures concerning this examination.

Russian Minor

The minor in Russian consists of a minimum of 15 units in Russian to include Russian 202 and six units of upper division courses.

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

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

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 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 Russian will not receive credit for taking lower division courses in Russian except with advance approval from the department.

101. *(1.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
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. Primarily for credential candidates in Russian.

201. *(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. (Formerly numbered Russian 203.)

202. *(4.)* **Intermediate (4) II**
Prerequisite: Russian 201.
Continuation of Russian 201. (Formerly numbered Russian 204.)

211. *(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. (Formerly numbered Russian 210.)

212. *(11.)* **Conversation (2) II**
Prerequisite: Russian 201 or 211, or four years of high school Russian.
Continuation of Russian 211. (Formerly numbered Russian 211.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101A.)* **Advanced Grammar and Composition (3)**
Prerequisites: Russian 202 and 212.
Advanced grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered Russian 301A.)

302. *(101B.)* **Advanced Grammar and Composition (3)**
Prerequisites: Russian 202 and 212.
Advanced grammar and stylistics; intensive writing practice; reports based on outside reading. (Formerly numbered Russian 301B.)

305A-305B. *(102A-102B.)* **Survey of Russian Literature (3-3)**
Russian literature from its beginnings, with emphasis on the nineteenth and twentieth centuries. (Formerly numbered Russian 311A-311B.)

395. Selected Slavics (3)
One of the non-Russian Slavic languages or literatures selected for intensive study.
Maximum credit six units in each language.

495. *(185.)* **Topics in Russian Literature (3)**
Topics in Russian 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.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisites: Fifteen upper division units in the major with an average of B (3.0) or better and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

555A-555B. *(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.

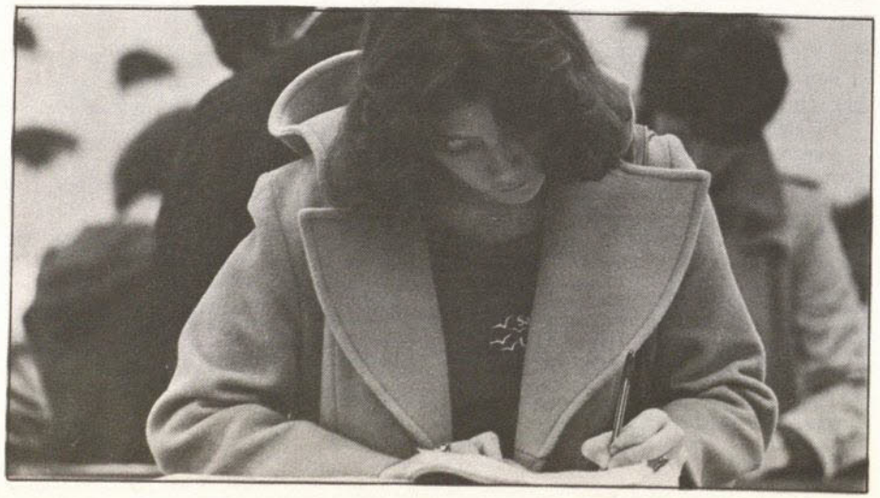
570. Slavic Linguistics (3)
Prerequisite: Russian 202 and 212.
Structural and comparative Slavic linguistics.

580. *(130.)* **Russian Syntax and Stylistics (3)**
Prerequisite: Russian 301 and 302.
The structure of contemporary Russian.

581. *(131.)* **Russian Phonetics and Morphology (3)**
Prerequisite: Russian 202 and 212.
The sounds and forms of contemporary Russian.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Social Science

In the College of Arts and Letters

Faculty

Social Science is administered through the Social Science Committee, composed of faculty members from the Departments of Anthropology, Economics, Geography, History, Political Science and Sociology.

Social Science Major

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

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

Preparation for the major. 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 101, 102; (2) Economics 101 and 102, or 100 (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 101, 102, 103; (6) Sociology 101, 110; (7) Mexican-American Studies 110A-110B, 115, 120A-120B. Social Science 101 may be substituted for one of the three-unit courses except in the area of upper division concentration. Statistics courses taken in a social science department may not be used in fulfillment of that department's six-unit sequence.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."
Spanish is recommended for those planning to work in this part of the United States.

Major. A minimum of 30 upper division units to include 15 units in one of the departments listed above; six units in each of two other departments or social science courses; three units in a fourth field. Courses covering four fields must be completed. Social Science 580 (Topics) may be substituted for the three-unit course in the fourth field. It cannot be used in the concentration area or in the second or third fields.
A maximum of six units in one of the following fields may be selected from the courses listed: Mexican-American Studies 302, 303, 304, 305, 306, 320, 376, 390A-390B, 480, 483; Psychology 320, 321, 322, 330, 340, 342, 347, 350, 351, 452, 453, 454, 455; Religious Studies 301, 305, 312, 314, 316, 318, 330, 340, 351, 353A-353B, 360, 361, 363, 365, 501, 503, 520, 522, 580. The lower division prerequisites required for any of the above courses in psychology and religious studies will count in the maximum total of six units allowed.

Emphasis in Africa and the Middle East

The adviser for this emphasis is Dr. Issa J. Khalil, Department of Religious Studies.

Preparation for the major. History 105A-105B, Humanities 157 and/or 158, and three to six units selected from Anthropology 101, 102; Comparative Literature 270A, 270B, 272A; Economics 101, 102; Geography 101, 102; and Humanities 130, 131. (15 units.) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements ***per se*** for the completion of the major.

Foreign Language Requirement. Arabic 101, 202, 303 and 304 or French 101, 102 and 201 or Hebrew 101, 102 and 201 or Portuguese 101, 102 and 201. An equivalent level of competency in any other language judged appropriate by the Committee on Africa and the Middle East is acceptable. Competency will be determined by examination.
A minor is not required with the major. Students in this major may wish to consider a minor in Jewish Studies.

Major. A minimum of 30 upper division units, selected with the consent of the adviser, to include at least 15 units in anthropology, economics, geography, history, political science or religious studies, or a combination of 15 units in art, comparative literature and religious studies. ***Required courses:*** Anthropology 449 or 474 or 479; Economics 469; Geography 330 or 335; six units from History 573A, 573B, 574, 575A and 575B; and Political Science 563 or 564. In addition, the following courses are recommended: Anthropology 350, 424, 426, 429, 522; Art 566, 568, 569, 570; Comparative Literature 535; Economics 365, 489; History 505, 539A-539B; Political Science 561, 581; Religious Studies 312, 330, 340.

Emphasis in Environment

The adviser for this emphasis is Dr. Warren A. Johnson, Department of Geography.

Preparation for the major. Biology 100 and 100L, Chemistry 101A; a six-unit sequence in each of three of the following fields: (1) anthropology, (2) economics, (3) geography, (4) history, (5) political science, and (6) sociology. (25 units.) Courses recommended for these sequences are as follows: Anthropology 101 and 102, Economics 101 and 102, Geography 101 and 102, History 105A-105B or 115A-115B, Political Science 101 and 102, Sociology 101 and 110. Additional recommended courses include Chemistry 101B, Geological Sciences 100 and 101.

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

Major. A minimum of 30 upper division units to include 12 units selected from Economics 453 or 458, Geography 370 or 371, Political Science 325 or 523; and 18 units selected from Anthropology 426, 427, 428, 531; Economics 320, 321, 401, 452, 489; Geography 354, 358, 555, 559, 570, 573, 574, 575, 576; History 540; Political Science 321, 334, 338; Sociology 440, 550, 557. Recommended: Biology 351 or 420.

Social Science Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the 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. Mathematics 119, Psychology 270 or other statistics course offered by a social science department; a six-unit sequence in each of three fields to be selected from the following: (1) Anthropology 101, 102; (2) Economics 101 and 102, or 100 (for students not using economics as a field of concentration); (3) Geography 101, 102; (4) History 105A-105B, 110A-110B, 115A-115B; (5) Mexican-American Studies 110A-110B, 115, 120A-120B; (6) Political Science 101, 102, 103; (7) Psychology 101, and 110 or 210; (8) Religious Studies 101 and 201; (9) Sociology 101, 110. Social Science 101 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. Three college semesters of one foreign language, preferably Spanish, are required.

Major. A minimum of 30 upper division units to include 15 units in one of the fields listed above; six units in each of two other departments; three units in a fourth field. Courses covering four fields must be completed. Social Science 580 (Topics) may be substituted for the three-unit course in this fourth field. It cannot be used in the concentration area or in the second or third fields.

Students concentrating in Mexican-American Studies must select courses from Mexican-American Studies 302, 303, 304, 305, 306, 320, 376, 390A-390B, 470, 480, 483; students concentrating in psychology must select courses from Psychology 320, 321, 322, 330, 340, 342, 347, 350, 351, 452, 453, 454 and 455.

Students concentrating in religious studies must include Religious Studies 524 plus 12 units from Religious Studies 301, 305, 312, 314, 316, 318, 330, 340, 351, 353A-353B, 360, 361, 363, 365, 501, 503, 520, 522, 580. (Religious Studies 310 is not a prerequisite for courses used in the social science credential program.)

Students with a 15-unit concentration in Mexican-American studies, psychology or religious studies must take the remaining 12 lower division units and 15 upper division units in anthropology, economics, geography, history, political science or sociology. All other students may not take more than six units total, including lower division prerequisites and upper division courses in the major, from among the Mexican-American studies, psychology or religious studies courses designated above.

A methods course in a department within the credential concentration areas or in the Department of Secondary Education (414F) is highly recommended.

Students majoring in health science who wish a single subject teaching credential in social science should refer to the section on health science and safety.

Credential requirement. In order to satisfy requirements for the social science credential, students must complete the scope and content framework requirements. Contact a social science adviser for list of approved courses.

LOWER DIVISION COURSE

101. Logic of the Social Science (3)

Introduction to the process of evaluation, conceptualization and development of methods common to anthropology, economics, history, geography, political science and sociology. Problems in the use of evidence, forming of hypotheses, implementation of statistics and organization of research through models. (Formerly numbered Social Science 158.)

UPPER DIVISION COURSE

(Intended for Undergraduates)

498. Senior Seminar (3)

Advanced reading and independent research on selected topic integrating at least two of the social science disciplines. Usually taught by two instructors representing two of the six social science disciplines of anthropology, economics, geography, history, political science and sociology.

UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

580. Topics (3)

Special topics appropriate to an interdisciplinary approach. Reading, observation and evaluation of research material and current scholarship in topics under consideration. Wherever possible taught by team of instructors representing two of six social science disciplines of anthropology, economics, geography, history, political science and sociology. Maximum credit six units. Social Science 580 can be used only as the three-unit course in the fourth field.

GRADUATE COURSES

Refer to the Graduate Bulletin.

School of Social Work

The undergraduate and graduate programs of the School of Social Work are accredited by the Commission on Accreditation of the Council on Social Work Education.

Faculty

Dean: Butler

Associate Dean: Haworth

Emeritus: Baily, Morgan, Watson, Witte

Professors: Griffin, Haworth (Associate Dean), Ishikawa, Kahn, Kelley, Kukkonen, Lee, Markus (distinguished visiting professor), Maxwell, Ontell, Perlmutter, Reichert, Stanford, Stumpf

Associate Professors: Anderson, Butler (Dean), Clary, Davis, Guidry, Herman, Pepper, Perry, Riehman, Sardinas, Sprague, Valle

Assistant Professors: Ajemian, Cohen, Raymer, Siman, Sucato

Lecturers: Adams, Ahrons, Chambers, Decker, Dunkle, Ernst, James, Jones, Mahoney, Ortiz, Rehm, Ruby, Rumelhart, Spielberg, Taubman, Terrell, Toseland

Appointments Under Grants from Outside Funds. Lecturers: Kenny, Lockery, Logan, Martinez

Offered by the School of Social Work

Major in social welfare with the A.B. degree in liberal arts and sciences.
Major in social welfare with the A.B. degree in applied arts and sciences.
Minor in social welfare.
Master of Social Work

Programs and Objectives

The School of Social Work offers a two-year graduate curriculum leading to the Master of Social Work degree under approval granted by the Board of Trustees of The California State University and Colleges in May 1963. The curriculum was developed in close cooperation with the Council on Social Work Education and was fully accredited by its Accreditation Commission in June 1966.

In addition to the undergraduate and graduate degree programs, the School maintains a Continuing Education Program in Social Work and the Center on Aging. The School of Social Work is committed to ethnic and cultural diversity in its student body, its faculty, the populations it serves and the unique concerns on which it focuses.

The objectives of the School of Social Work at San Diego State University are to prepare students with the essential knowledge, philosophy and basic skills for their responsible practice in the profession of social work. In order to achieve these objectives, the School will assist students to develop a philosophy which recognizes individual human welfare as the purpose and goal of social policy; to acquire attitudes and values that will permit the development and maintenance of professional relationships and professional standards; to develop the discipline and self-awareness essential to the professional social worker; to attain a level of competence necessary for professional practice; to acquire knowledge in methods of research in social work; and to accept responsibility for the continued development of their competence in the practice of social work.

Social Welfare Major

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

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

A minor is not required with this major.

The primary educational objective of this major is preparation for beginning professional social work practice. In addition, this major serves broad educational purposes based on 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 102; six units selected from economics; Sociology 101; Psychology 101; Social Welfare 110, 120. (21 units.) Recommended: Biology 100 and 100L.

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

Major (Undergraduate): A minimum of 45 upper division units, in a prescribed pattern to include Social Welfare 350, 360A-360B, 370A-370B, 381, 382, 482A-482B, 483A-483B, 489A-489B, 490A-490B.

Recommended: Biology 362 and 462L, Psychology 330, Sociology 422, and courses from anthropology, literature, history, philosophy, political science, economics, psychology and sociology. Students should consult with their adviser in social welfare for selection and arrangement of courses.

Social Welfare Minor

The minor in social welfare consists of 24 units, twelve of which must be in upper division courses to include Social Welfare 110, 120; Sociology 101, Psychology 101; and in the upper division Social Welfare 360A, 370A, 381, 496 or 499.

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

LOWER DIVISION COURSES IN SOCIAL WELFARE

110. Human Societies and Social Problems (3) I, II

Perspectives on problems of human societies and their relation to contemporary social problems and issues. Emphasis on distributive problems and forms of stratification. Not open to students with credit in Sociology 110 or Mexican-American Studies 110A-110B.

120. *(80.)* **Explorations in Human Services (3) I, II**

Two lectures and three hours of field work.

Orientation to the field of social welfare. Readings, class discussions and participation in social welfare activities on campus and in the community. Work as a volunteer in the agency is required in a variety of field settings. Scheduling is flexible.

130. *(30.)* **Marriage and Contemporary Human Relations (3) I, II**

Developing understanding and ability to evaluate various concepts, attitudes and value systems as they relate to marriage and other contemporary human relationships. Assist students in acquiring the abilities to develop and sustain interpersonal relationships. This course not open to students with credit in Family Studies and Consumer Sciences 135.

299. *(99.)* **Experimental Topics (1-4) Cr/NC**

Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES IN SOCIAL WELFARE

(Intended for Undergraduates)

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

Refer to Honors Program.

May be repeated with new content. Maximum credit six units.

350. Cultural Pluralism (3) I, II

Understanding of the American society as a culturally pluralistic social process and an understanding of social work as a culturally directed profession with emphasis on the concept of cultural identities created by one's values, ideologies, knowledge and behavior.

351. Perspectives on Life in Urban Communities (3) I, II

Characteristics and processes of contemporary urban communities as they shape the life-styles of people. Urban communities examined in terms of their functional and dysfunctional capacities for meeting human needs.

360A. *(100A.)* **Perspectives on Human Behavior (3) I, II**

Prerequisites: Psychology 101 and Sociology 101.

Interdisciplinary, comparative, and critical approach to explanatory theories of human behavior. Focus on interrelatedness of factors that affect the nature and quality of human life with linkage to the social welfare of individuals, families and communities.

360B. *(100B.)* **Perspectives on Behavioral and Social Change (3) I, II**
Change mechanisms affecting individuals, families, and communities. Course is interdisciplinary and comparative, encouraging examination of situational contexts giving rise to the need for change, and methods employed to alter behavior or social systems.

370A. *(180A.)* **Social Policies and Social Issues (3) I, II**
Prerequisites: Social Welfare 110 or Sociology 110 or Mexican-American Studies 110A-110B; Social Welfare 120.
Major social forces and institutions as they relate to and determine social policy emphasizing social welfare services in an industrialized society.

370B. *(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.)* **Seminar in Basic Skills in Social Work Practice (3) I, II**
Prerequisite: Junior standing.
Helping skills in social work practice make use of assessment and interviewing theory. Addresses written, verbal interpersonal skills with individuals, small groups and communities with regard to assessment in social work practice.

382. Seminar in Intermediate Skill Development for Social Workers (3) I, II
Prerequisite: Social Welfare 381.
Students are expected to participate in simulation of social work practice situations, activities and skills. Presentation of research and theory will be interwoven with structured classroom experiences. Design of intervention strategies is emphasized.

482A-482B. *(182A-182B.)* **Social Work Practice (3-3) I, II**
Prerequisites: Social Welfare 360B, 370B, 381 and a 2.0 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 interventive techniques of social work practice with individuals, families, groups and communities.

483A-483B. *(183A-183B.)* **Integrating Seminar (3-3) I, II**
Prerequisites: Social Welfare 360B and 370B and a 2.0 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 (3-9, 3-9) I, II**
Prerequisites: Social Welfare 360B and 370B; arrangement in prior semester with Undergraduate Field Coordinator; and a 2.0 grade point average in all junior level courses required in the social welfare major. Concurrent registration in Social Welfare 482A and 483A for 489A; concurrent registration in Social Welfare 482B and 483B for 489B.
A minimum of twelve units in Social Welfare 489A-489B (sixteen hours per week for two semesters or equivalent in the senior year) of practice field assignments in selected social welfare agencies or settings. Three units by permission of Chairman of Department.

490A-490B. *(187.)* **Methods of Social Work Research (3-3) I, II**
Prerequisite: Social Welfare 360B and 370B.
Definition and purpose of research in social welfare and social work. Formulation of research problems, selecting a design and methodology; techniques of collecting, organizing, interpreting and analyzing data.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

497. *(197.)* **Investigation and Report (3) I, II**
Prerequisite: Consent of instructor.
Analysis of special topics in social welfare.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

520. Seminar in Contemporary Issues and the American Family (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing in other programs of study and unclassified standing with the consent of the dean.
Explores and analyzes a myriad of areas within the context of change of the family as a social institution. The family is viewed systemically. Such factors as industrialization, cybernetics and the changing nature of the marital bond are included.

530. Seminar in History of Social Work (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with consent of the dean.
Development of social welfare institutions as a function of industrial society in America. Historical trends in politics, economics, migration, and life styles are examined in relation to the development of social institutions for responding to human need including the development of the profession of social work.

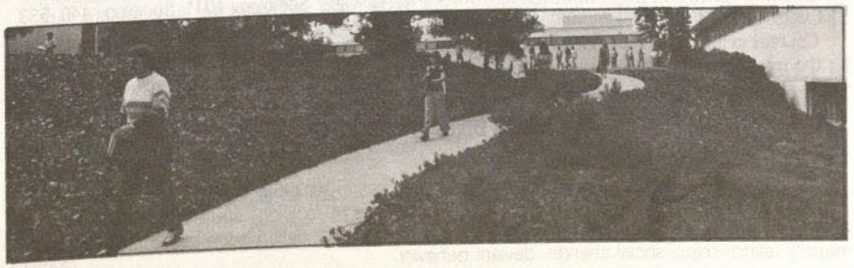
540. Seminar in Social Effects of the Legal Process (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with consent of the dean.
Structure and functions of law as it bears upon such groups as defendants in criminal prosecutions, recipients of welfare programs, conservatees in mental health hearings, children in juvenile court dependency proceedings. The legal conflicts social workers may encounter between their ethics and their duties to clients and agency.

550. Seminar in Administration and Decision Making in Human Service (3)
Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with consent of the dean.
Relationship between the development of social policy and its actual implementation through program development and delivery of human services. Administrative actions including decision making, communication with regulatory and legislative bodies, and budget development are considered in the ways that policy is shaped and reflected through social programs.

596. Experimental Topics (1-4)
Selected topics in social work and social welfare. Maximum credit six units.

GRADUATE COURSES IN SOCIAL WORK

Refer to the Graduate Bulletin.



Sociology

In the College of Arts and Letters

Faculty

Emeritus: Barnhart, Kirby, Klapp, Milne, Somerville
Chair: Johnson
Professors: Daniels, DeLora, J.R., DeLora, J.S., El-Assal, Gillette, Johnson, Mouratides, Schulze, Sorensen, Wendling, Winslow
Associate Professors: Bloomberg, Buck, Chandler, Cottrell, Emerick, Kennedy, Scheck, Werner
Assistant Professors: Barclay, Gay, Hohm, Ima, Kirkpatrick, Kolodij, Preston, Robinson, Sanders, Schmidt, Stephenson, Weeks, Wood
Lecturer: Clanton

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 in the section of this catalog on "Graduation Requirements."

Students majoring in sociology must complete a minor in another field.

Preparation for the major. Sociology 101, 110 and 201. (9 units.)

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

Major. A minimum of 24 upper division units in sociology to include three units in theory (400, 401 or 403); three units in research methods (460, 464 or 465); three units in Social Psychology 440; and three units in Social Organization (404, 422, 424 or 432).

Sociology Minor

The minor in sociology consists of 15-21 units, twelve of which must be upper division units, nine of which must be in one of the following areas (exclusive of prerequisites):

Theory and Methods: Prerequisites: Sociology 101*, 201. Sociology 400, 401, 403, 405, 460, 464, 465, 563.

Power Relations and Inequality: Prerequisites: Sociology 101*, 422, 440. Sociology 424, 512, 525, 533, 537, 546, 547, 557. (Sociology 422 is prerequisite to 537; Sociology 440 is prerequisite to 546.)

Social Change: Prerequisites: Sociology 101*. Sociology 404, 506, 508, 519, 546, 547, 550, 557. (Sociology 440 is prerequisite to 546.)

Deviance and Criminology: Prerequisites: Sociology 101*. Sociology 440, 510, 512, 513, 514, 523.

Health and Illness: Prerequisites: Sociology 101*. Sociology 510, 523, 526, 527, 528, 534, 550.

Sociology of Organizations and Institutions: Prerequisites: Sociology 101*. Sociology 422, 432, 440, 520, 521, 538, 539, 548. (Sociology 440 is prerequisite to 548.)

Social Interaction and Intimate Relations: Prerequisites: Sociology 101*. Sociology 440, 533, 534, 535, 536, 548. (Sociology 440 is prerequisite to 548.)

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

* Unless waived by the department.

LOWER DIVISION COURSES

101. *(1.)* **Introductory Sociology (3)**
This course is prerequisite to all upper division courses in sociology.
Basic Theoretical perspectives, concepts, and methods of sociology applied to analysis of social issues and processes. Selected topics include, e.g., social stratification, social organization, minority-majority relationships, social change, deviant behavior.

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.

164. *(64.)* **Sociological Analysis (3)**
Prerequisite: Sociology 101.
Development and use of fundamental procedures of sociological investigation.

201. *(60.)* **Elementary Social Statistics (3)**
Prerequisites: Sociology 101 and Mathematics 103.
Analysis and presentation of elementary materials in the fields of sociology and social work. Tabular and graphic presentation, analysis of frequency distribution, trends, simple correlation, sampling and reliability techniques. Not open to students with credit or concurrent registration in another course in statistics. (Formerly numbered Sociology 160.)

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

400. *(100.)* **History of Social Thought (3)**
Prerequisite: Sociology 101.
Development of social thought prior to the appearance of sociology as a distinct scientific discipline. Major emphasis on European contributions.

401. *(101.)* **Classical Sociological Theory (3)**
Prerequisite: Sociology 101.
Theories of the major early European and American sociologists, including Marx, Weber, Durkheim, Pareto, Cooley, Mead and others.

403. *(103.)* **Contemporary Sociological Theory (3)**
Prerequisite: Sociology 101.
Types and trends of contemporary sociological theory. Selected theoretical works.

404. *(104.)* **Social Change (3)**
Prerequisite: Sociology 101.
Social change at the interpersonal, institutional and societal levels in a comparative perspective. Detailed analysis of modernization.

405. Sociological Laboratory II (1)
Three hours of laboratory.
Prerequisite: Must be taken in conjunction with a three-unit upper division course.
The application of experimental, quantitative and qualitative methods to sociological problems and/or the use of experimental, social simulation teaching techniques.

406. Science, Technology and Social Dynamics (3)
Science and technology in social change. Case studies from preindustrial and early industrial societies. Effect of science and technology on contemporary social organization in developing and developed nations and implications for future.

422. *(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 201.
The use of parametric and nonparametric techniques in the analysis of social research data; including analysis of variance; covariance; multiple and partial correlational techniques.

464. *(164.)* **Survey and Experimental Research Methods (3)**
Prerequisite: Sociology 201.
Examination of the research process from research design through data processing, analysis and interpretation. Emphasis on quantitative research techniques including sample surveys, questionnaire construction, scaling techniques and experimental designs.

465. Qualitative Research Methods (3)
Prerequisite: Sociology 201.
Examination of field research methods including interviewing, observation, participant observation and case studies. Problems in research design, gaining and maintaining rapport, and analysis and interpretation of data.

496. Experimental Topics (1-4)
Prerequisite: Consent of the instructor.
Refer to the catalog statement on experimental topics on page 116. 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.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

506. Modernization of Traditional Societies (3)
Prerequisite: Sociology 101.
Examines theories of social change relative to industrialization and urbanization of preindustrial societies. Comparative study of institutional and social-psychological consequences of industrialization, utilizing historical and contemporary study of macrosocial change.

508. Sociology of the Future (3)
Prerequisite: Sociology 101.
Examines sociological aspects of alternative futures and the role of contemporary behavior in creating those futures. Analysis of projections in selected areas such as family, technology, work and leisure.

510. *(110.)* **Sociology of Deviance (3)**
Prerequisite: Sociology 101.
Survey of many alleged abnormal phenomena in society as seen in society today in various forms of individual, family, community and world disorganization, such as crime, prostitution, extreme alcoholism, migratory workers, divorce, revolution, war, etc.

511. *(111.)* **Current Topics in Sociology (3)**
Prerequisite: Sociology 101.
Selected specialized, controversial or currently relevant topics in sociology. Maximum opportunity provided for student initiative in determining course content and procedures. May be repeated with new content. Maximum credit six units.

512. *(112.)* **Sociology of Conflict (3)**
Prerequisite: Sociology 101.
Conflict as a social process: background, forms and consequences at the interpersonal, intergroup, class and international levels from a sociological frame of reference. Major theories of social conflict.

513. *(113.)* **Criminology and Penology (3)**
Prerequisite: Sociology 101.
The extent and characteristics of crime; consideration of physical, mental, economic and sociological causes of crime; study of methods of penal discipline, prison labor, parole and probation; programs of prevention.

514. *(114.)* **Juvenile Delinquency (3)**
Prerequisite: Sociology 101.
The nature and extent of delinquency; the causative factors involved; methods of control and prevention, with special attention to the protective and remedial measures offered by the school, home, juvenile court, correctional institutions and camps, probation and parole, and recreational agencies.

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 organization, occupational socialization, problems of identity and role conflict.

523. *(123.)* **The Sociology of Mental Illness (3)**
Prerequisite: Sociology 101.
The social definition, ecology and control of mental illness across various societies. The implications of social differentiation, stratification and urbanization upon the incidence, prevalence and control of mental illness and the use of these empirical problems for sociological research.

525. *(125.)* **Minority Group Relations (3)**
Prerequisite: Sociology 101.
Theories of ethnic prejudice. Analysis of racial and ethnic discrimination. Analytical inquiry into sources of friction and causes of conflict between majority and minority groups.

526. *(126.)* **Medical Sociology (3)**
Prerequisite: Sociology 101.
A sociological analysis of health and medical institutions. Cultural factors in conceptions of disease, health and healing. Social structure of medical facilities and the role of personnel in such institutions. Relation of illness to income, housing and other socioeconomic factors. Not open to students with credit in Health 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. *(137.)* Political Sociology (3)
Prerequisite: Sociology 422.
Social organization of political processes. Power and authority, social class, primary groups, collective behavior, social change and other sociological factors considered in their relationships to political processes.

538. *(138.)* Sociology of Religion (3)
Prerequisite: Sociology 101. Recommended: Sociology 401 and 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)
Prerequisite: Sociology 101.
Social organization of education, teaching as a profession. Class, ethnic and other social factors affecting the educational process. Educational institutions and the community.

545. *(145.)* Sociology of Mass Communication (3)
Prerequisite: Sociology 101. Recommended: Sociology 440 and 546.
Sociological analysis of the processes and effects of mass communications in different social systems, their functions and dysfunctions and their relationships to other social institutions.

546. *(146.)* Collective Behavior (3)
Prerequisite: Sociology 440.
The basic processes of social behavior in masses and groups, including crowd behavior, fads, fashions, crazes, panics, rumors; sects and cults; heroes and scapegoats; social movements; effects of mass communication.

547. *(147.)* Sociology of Social Movements (3)
Prerequisite: Sociology 101. Recommended: Sociology 422 and 545.
Revolutionary and reform movements in relationship to the larger society. Conditions leading to development of social movements, emergence of leadership, ideologies, strategies, recruitment of members and social consequences, case studies in depth.

548. *(148.)* Small Groups (3)
Prerequisite: Sociology 440.
Processes, morale and organization of small groups; their role in society and institutions such as industry, military, recreation and education; recent studies and methods of research.

550. *(150.)* Population Problems (3)
Prerequisite: Sociology 101.
Study of population variables including births, deaths and migration. Comparative analysis of theories, methods and techniques used in the study of population and ecological problems, processes and relationships.

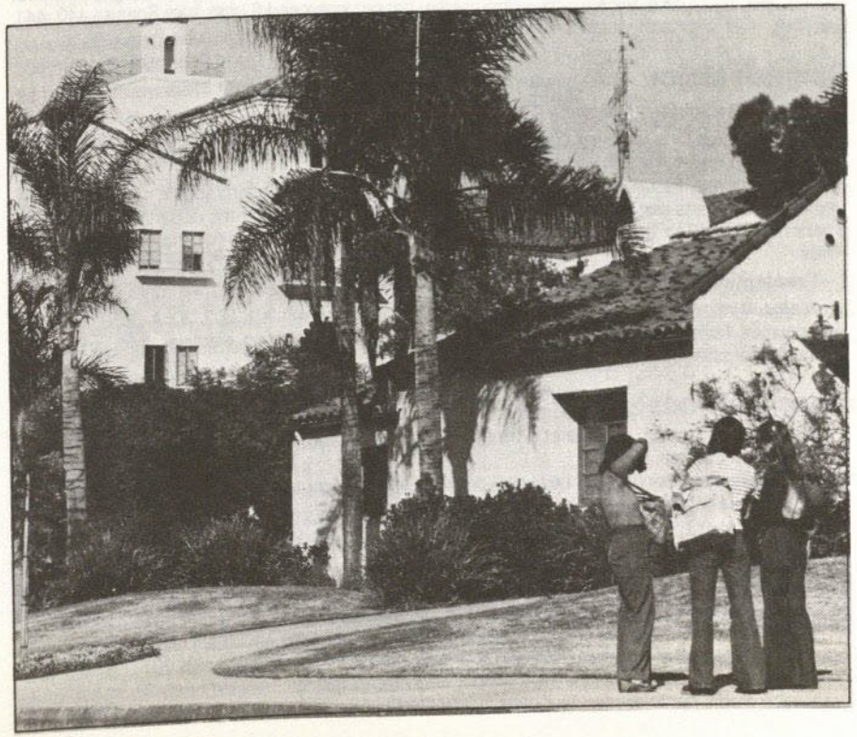
557. *(157.)* Urban Sociology (3)
Prerequisite: Sociology 101.
The structure and function of the modern city; types of neighborhoods; forms of recreation; social forces in a metropolitan area; types of urban personalities and groups; rural-urban conflicts of culture. Practical field studies required.

563. The Logic of Sociological Inquiry (3)
Prerequisite: Sociology 201.
Systematic overview and analysis of explanation in the social sciences and history with emphasis on sociology. Problems of applying the natural scientific method to the social sciences, interpretation of meaning and objectivity.

597. *(197.)* Investigation and Report (3) I, II
Prerequisite: Fifteen units in sociology and consent of instructor.
Analysis of special topics in sociology. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.



Spanish

In the College of Arts and Letters

Faculty

Emeritus: Baker, Brown, Sender
Chair: Segade
Professors: Barrera, Case, Christensen, Head, Lemus, Segade, Walsh
Associate Professors: Jimenez-Vera, O'Brien, Santalo, Talamantes, Weeter
Assistant Professors: Silverman, Young

Offered by the Department of Spanish and Portuguese Languages and Literatures

Master of Arts degree in Spanish.
Major in Spanish with the A.B. degree in liberal arts and sciences.
Teaching major in Spanish for the single subject teaching credential in foreign languages.
Minor in Spanish.

Spanish Major

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

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

Students majoring in Spanish must complete a minor in another field approved by the departmental adviser in Spanish.

Preparation for the major. Spanish 101, 102, 201, 202, 211, and 212. (20 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Major. A minimum of 24 upper division units in Spanish to include Spanish 301, 302, 305A-305B, and 12 units of upper division electives in Spanish, but not to exceed 3 units from Spanish 440, 441, and 442.

Spanish Major

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in Spanish is required for the degree; students seeking the credential only are not required to complete a minor.

Preparation for the major. Spanish 101, 102, 201, 202, 211 and 212. (20 units.)

Major. A minimum of 30 upper division units to include Spanish 301, 302, 305A-305B, 490, 548; two courses from 440, 441, or 442; and six units of upper division electives from any of the departmental offerings.

Spanish Minor

The minor in Spanish consists of a minimum of 15 units in Spanish, six units of which must be in upper division courses.

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

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Spanish may be counted as the equivalent of Spanish 101; three years the equivalent of Spanish 102; and four years the equivalent of Spanish 201. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work. Students entering San Diego State University with five or six years of high school Spanish may enroll in Spanish 202; the department recommends, however, that they take Spanish 301.

LOWER DIVISION COURSES

Native speakers of Spanish from foreign countries will not receive credit for taking lower division courses in Spanish, except with advance approval from the department.

101. *(1.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Pronunciation, oral practice, readings on Spanish culture and civilization, minimum essentials of grammar. Not open to students who have completed three years of high school Spanish.

102. *(2.)* **Elementary (4) I, II**
Four lectures and one hour of laboratory.
Prerequisite: Spanish 101 or two years of high school Spanish.
Continuation of Spanish 101. Not open to students who have completed four years of high school Spanish.

201. *(3.)* **Intermediate (4) I, II**
Prerequisite: Spanish 102 or three years of high school Spanish.
A practical application of the fundamental principles of grammar. Reading in Spanish of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Special sections available for the Spanish speaking. (Formerly numbered Spanish 203.)

202. *(4.)* **Intermediate (4) I, II**
Prerequisite: Spanish 201 or four years of high school Spanish.
Continuation of Spanish 201. Special sections available for the Spanish speaking. (Formerly numbered Spanish 204.)

211. *(10.)* **Conversation and Writing (2)**
Prerequisite: Spanish 102 or three years of high school Spanish.
Emphasis on the spoken language with a modicum of writing practice; practical vocabulary and useful phrases; conversation on assigned social, cultural or literary topics at an intermediate level; all class discussion conducted in Spanish. Not open to students with credit for Spanish 211-Y. (Formerly numbered Spanish 210.)

211-Y. Intermediate Conversation and Writing in Mexico (3)
Prerequisite: Spanish 102 or three years of high school Spanish.
Emphasis on the spoken language with a modicum of writing practice; practical vocabulary and useful phrases; conversation on assigned social, cultural or literary topics at an intermediate level; all class discussion conducted in Spanish; course arranged in tour fashion in Mexico during winter interim or pre-summer period. Not open to students with credit for Spanish 211. (Formerly numbered Spanish 210-Y.)

212. *(11.)* **Writing and Conversation (2)**
Prerequisite: Spanish 201 and 211 or four years of high school Spanish.
Emphasis on the written language with supporting practice in the spoken language; directed written composition on social, cultural or literary topics with stress on clarity and thoroughness of thought; all class discussion conducted in Spanish. (Formerly numbered Spanish 211.)

223. *(23.)* **Introduction to Literature (3)**
Prerequisites: Spanish 202 and 212.
Selected readings from Peninsular and Latin American prose. Oral and written reports and class discussions. Course conducted in Spanish.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101A.)* **Advanced Conversation and Writing (3)**
Prerequisite: Spanish 211 and 212, or five years of high school Spanish or near native-level proficiency.
Emphasis on the spoken language with supporting practice in the written language; conversation on assigned social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish. Not open to students with credit for Spanish 301-Y.

301-Y. Advanced Conversation and Writing in Mexico (3)
Prerequisite: Spanish 211 or 211-Y and 212, or five years of high school Spanish or near native-level proficiency.
Emphasis on the spoken language with supporting practice in the written language; conversation on assigned social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish; course arranged in tour fashion in Mexico during winter interim or pre-summer period. Not open to students with credit for Spanish 301.

302. *(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.

305A-305B. *(102A-102B.)* **Survey Course in Spanish Literature (3-3)**
Prerequisite: Spanish 202.
Important movements, authors and works in Spanish literature from the Middle Ages to the present. (Formerly numbered Spanish 311A-311B.)

306A-306B. *(104A-104B.)* **Survey of Spanish-American Literature (3-3)**
Prerequisites: Spanish 202 and 212.
Reading from representative Spanish-American authors during colonial, revolutionary and modern periods. (Formerly numbered Spanish 312A-312B.)

440. *(140.)* **Spanish Civilization (3)**
Prerequisites: Spanish 202 and 212 (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 202 and 212 (except at the Imperial Valley Campus).
Spanish-American cultures, with emphasis on literature, philosophy and the arts. Not open to students with credit in Latin American Studies 341.

442. *(142.)* **Mexican Civilization (3)**
Prerequisites: Spanish 202 and 212.
The major currents and characteristics of Mexican culture, as expressed through the centuries in literature, philosophy and the arts. Not open to students with credit in Latin American Studies 346.

490. *(190.)* **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.

499. *(199.)* **Special Study (1-3) I, II**
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in Spanish available in any given semester.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

510A-510B. *(105A-105B.)* **Modern Spanish Drama (3-3)**
Prerequisites: Spanish 202 and 212.
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 202 and 212.
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 202 and 212.
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 202 and 212.
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 202 and 212.
Literature of Argentina, Paraguay and Uruguay from colonial period to present.

530. *(110.)* **Nineteenth Century Spanish Novel and Short Story (3)**
Prerequisites: Spanish 202 and 212.
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 202 and 212.
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 202 and 212.
The development of the novel and short story in Spain since 1936.

548. *(149.)* **Spanish Linguistics (3)**
Prerequisites: Spanish 202 and 212.
Structural, historical and applied Spanish linguistics.

549. *(150.)* **Phonetics and Phonemics (3) II**
Prerequisites: Spanish 202 and 212 with a grade of C or better.
The sounds of Spanish and of the Spanish phonemic systems, with special attention to the problems involved in the teaching of Spanish pronunciation to English-speaking students.

550. Golden Age Literature I (3)
Prerequisites: Spanish 202 and 212.
Major writers and works, concentrating on prose and lyric poetry.

560. Golden Age Literature II (3)
Prerequisites: Spanish 202 and 212.
Major writers and works, concentrating on drama.

570. *(170.)* **Spanish-American Poetry (3)**
Prerequisites: Spanish 202 and 212.
Spanish-American poetry of the 19th and 20th centuries.

571. *(171.)* **Spanish-American Short Story (3)**
Prerequisites: Spanish 202 and 212.
Principal Spanish-American short story writers.

572. *(172.)* **Spanish-American Theatre (3)**
Prerequisites: Spanish 202 and 212.
Principal Spanish-American dramatists and movements.

580. *(180.)* **Modern Spanish Poetry (3)**
Prerequisites: Spanish 202 and 212.
Spanish poetry of the 19th and 20th centuries.

596. Selected Studies in Spanish (3-6)
Prerequisites: Spanish 301 and 302.
Topics in Spanish or Spanish-American language, literature, culture and linguistics. Maximum credit six units.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Speech Communication

In the College of Professional Studies

Faculty

Emeritus: Ackley
Chair: King
Professors: Adams, Benjamin, King, Mills, Samovar
Associate Professors: Sanders, Weitzel
Lecturer: Gaske

Offered by the Department

Master of Arts degree in speech communication.
Major in speech communication with the A.B. degree in applied arts and sciences.
Teaching major in speech communication for the single subject teaching credential in English/Speech.
Minor in speech communication.
The Speech Communication Department conducts a number of activities such as the Forensics Program and the Readers Theater Program as performance laboratories. These activities are an extension of classroom instruction, and credit may be allowed upon approval by the instructor in charge.

Speech Communication Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Speech Communication 105, 111A, 135, 160, and three units of electives. (15 units.)

Major. A minimum of 27 upper division units to include Speech Communication 350, 535 and 592; three units selected from Speech Communication 362, 391, 392 and 508; and 15 units selected from 300—500-numbered Speech Communication courses. No more than nine units from the following Speech Communication courses: 300, 301, 309, 361, 400, 496, 499.

Speech Communication Major

For the Single Subject Teaching Credential in English/Speech

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the 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, 160, 191. (18 units.)

Major. A minimum of 24 upper division units in speech communication to include Speech Communication 362, 391, 392, 508, 530; 537 or 354; and six units selected from any combination of Speech Communication 301, 309 (intercollegiate forensics experience), 361 and 400.

Credential requirements. Eighteen units to include:
(A) Language: 3 to 6 units from Linguistics 101, 520, 524 or 550.
(B) Literature: 6 to 9 units from English 250, 260A-260B, or other literature courses approved by the Speech Communication Department Chairman.
(C) Composition: 6 to 9 units from English 200 and 500; Journalism 120 or 320; University Studies 150.

Speech Communication Minor

The minor in speech communication consists of a minimum of 24 units to include 12 units selected from Speech Communication 104, 111A, 135, 160 and 191; and 12 units of electives most appropriate to the student's major selected in consultation with the department chairman from the following areas:

Communication History: Speech Communication 350, 354, 380, 540 and 589.
Communication Forms: Speech Communication 309, 362, 391, 392 and 508.
Communication Relationships: Speech Communication 406, 475, 530, 535, 537 and 592.
Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

103. *(3.)* **Oral Communication (3) I, II**
Training in fundamental processes of oral expression; method of obtaining and organizing material; outlining; principles of attention and delivery; practice in construction and delivery of various forms of speeches. Speech Communication 103 recommended in general education. Not open to students with credit for Mexican-American studies 111A.

104. *(4.)* **Public Speaking (3) I, II**
Practice in extemporaneous speaking on subjects of current interest, both national and local, with stress on organization and delivery. Speech Communication 103 or 104 recommended in general education. Not open to students with credit for Mexican-American studies 111A.

105. *(5.)* **Introduction to Speech Communication (3) I, II**
Investigation of the status of the discipline and analysis of interrelationships among varied specialties within the field. Intended for students who are either considering or who are committed to a speech communication major or minor.

111A. *(11A.)* **Fundamentals of Interpretation (3) I, II**
Literature and principles of its oral presentation by the interpreter.

111B. *(11B.)* **Intermediate Interpretation (3)**
Prerequisite: Speech Communication 111A.
Theory and practice of oral interpretation with emphasis on vocal performance, physical performance, and other aspects of delivery. Practice through recording and live presentation of readings, group speaking, and readers theater. Outside activity required.

135. *(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.
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**
Role of group discussion in a democratic society. Principles and methods of group discussion in problem-solving and learning situations. Practice in dealing with questions of policy and controversial issues. Development of skills in discussion preparation, participation and leadership.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

301. *(101.)* **Management of Speech Activities (1) I, II**
Two hours of activity.
Planning, preparation, management and supervision of speech tournaments and other interscholastic activities under the supervision of the speech communication staff. Maximum credit two units.

309. *(109.)* **Workshop in Speech (1-3)**
Study of some problems in speech communication. Maximum credit six units.

350. *(150.)* **Classical Rhetorical Theory to 1700 (3)**
Rhetorical theories from their origins to the Renaissance. Emphasis on the theories of Plato, Isocrates, Aristotle, Cicero and Quintilian, and the application of principles to rhetorical discourse.

354. *(154.)* **Contemporary Rhetorical Theory and Criticism (3) I, II**
Prerequisite: Speech Communication 350.
Emphasis on rhetorical criticism and contemporary developments since the Renaissance. The theories of Blair, Campbell, Whately, Richards, Weaver, Burke and others investigated as systems of rhetorical criticism and sources of principles of rhetorical discourse.

361. *(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 theory of group formation, interaction, procedures and leadership.

392. *(192A.)* **Advanced Public Speaking (3) I**
Prerequisite: Speech Communication 104.
The preparation and delivery of longer speeches. Study of classic models of public address.

400. *(100.)* **Contemporary Forensics Problems (2) I, II Cr/NC**
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. Maximum credit eight units.

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.

475. *(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. (Formerly numbered Speech Communication 575.)

496. *(198.)* **Selected Topics in Speech Communication (1-4) I, II**
Prerequisite: Twelve units in speech communication.
A specialized study of selected topics from the areas of speech communication. May be repeated with new content. Maximum credit six units.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

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 artists 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 Communica-tion 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.

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 103 or 104.
Persuasion with emphasis on psychological principles. Research project on a significant problem.

GRADUATE COURSES

Refer to the Graduate Bulletin.

Speech Pathology and Audiology

In the College of 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
Chair: Kopp
Professors: Kopp, Nichols, Riedman, Thile
Associate Professor: Allen
Assistant Professors: Gould, Novak, Williams, Wood

Offered by the Department of Communicative Disorders

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.

Speech Pathology and Audiology Major

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

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

A minor is not required with the major.

Preparation for the major. Mathematics 103 (or qualification on the mathematics placement examination); Natural Science 102A; Psychology 101, 260 and 270; Speech Communication 103 or 104; Speech Pathology and Audiology 104, 105 and 106. (26-27 units.)

Major. A minimum of 24 upper division units in speech pathology and audiology selected with the approval of the adviser, to include Speech Pathology and Audiology 320, 321 and 340.

Speech Pathology and Audiology Minor

The minor in speech pathology and audiology consists of 23 units in speech pathology and audiology to include Speech Pathology and Audiology 104, 105, 106, 320, 321, 323, 340, 322 or 550.

Prerequisites for the minor include Natural Science 102A, Psychology 101 and 260. (10 units.)

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

Specialist Credential: Communicatively Handicapped (Ryan Bill)

The Specialist Credential for the Communicatively Handicapped prepares students for an emphasis in one or more of the following areas of handicap:

Deaf and Severely Hard of Hearing
Deaf—Blind
Severe Language Handicapped (including aphasia)
Speech and Hearing

The Specialist Credential for the Communicatively Handicapped specifies a sequence of speech pathology and audiology courses plus a sequence of education courses. This credential incorporates a standard classroom teaching credential for the communicatively handicapped and may be pursued in conjunction with the multiple subjects teaching credential or with the single subject teaching credential. Students may choose to: (1) major in liberal studies (offered by the School of Education) in conjunction with specified speech pathology and audiology courses; (2) pursue a departmental major; complete specified prerequisites for the School of Education; pass the National Teacher Examination prior to entering the School of Education curriculum. Consult the department office for further information.

Rehabilitative Services Credentials (Ryan Bill)

Assembly Bill 3150 provides for rehabilitative services credentials for the following areas:

Language, Speech and Hearing
Audiology
Severe Language Handicapped

The department is in the process of developing specific sequences for each of the above areas. This credential program will not require the professional course sequence from the School of Education.

LOWER DIVISION COURSES

104. *(4.)* **Voice and Articulation (3) I, II**
Vocal and articulatory dynamics as bases of standard and nonstandard oral language patterns. Practice in recognition and recall of such patterns. Introduction to use of the International Phonetic Alphabet in broad transcription.

105. *(5.)* **Introduction to Audiology (2) I, II**
Prerequisite: Credit or concurrent registration in Natural Science 102A.
Audiology in diagnosis and rehabilitation of hearing impairment, medical practice, hearing conservation and research. Includes physics of sound, decibel, and ear anatomy as applied to fundamentals of audiologic assessment and tuning fork tests. Fifteen hours of observation required.

106. *(6.)* **Communicative Disorders (3) I, II**
Orientation to the field of speech pathology and audiology. Survey of communicative disorders, covering all areas of exceptionality. Normal growth and development as it relates to speech and language. Fifteen hours of observation or project required. Waiver of this course is permitted only upon satisfactory passage of a competency examination.

107. *(7.)* **Management of Clinical Activities (1) I, II Cr/NC**
Assisting in the operations of the speech and hearing clinic. Maximum credit two units.

108. *(8.)* **Oral Communication Laboratory (1) I, II Cr/NC**
Two hours of laboratory.
Individual laboratory training on specific speech problems. Student chosen through testing by Department of Speech Pathology and Audiology.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

305. *(105.)* **Speech and Language Development and Communication Disorders (3) I, II**
Normal development of speech and language. Identification, prevention and remediation of speech, hearing and language disorders. Five hours of observation required. Not open to speech pathology and audiology majors.

320. *(120.)* **Phonetics (3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Speech Pathology and Audiology 104.
Auditory, kinesthetic and visual analysis of the sounds of the English language, including regional and foreign dialect and disordered speech. Competency in I.P.A. broad transcription and introduction to narrow transcription.

321. *(123.)* **Anatomy and Physiology of Speech (3) I, II**
Two lectures and three hours of laboratory.
Prerequisite: Psychology 260 or Zoology 108.
Anatomy and physiology of the speech-related structures of the head, neck and thorax. Laboratory exercises and demonstrations using charts, models, histological materials and cadavers. (Formerly numbered Speech Pathology and Audiology 323.)

322. *(122.)* **Functional Communication Disorders (3) I, II**
Prerequisite: Speech Pathology and Audiology 323.
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. *(121.)* **Organic Communication Disorders (3) I, II**
Prerequisites: Speech Pathology and Audiology 106 and 321; competency examination.
Study of speech and language disorders of organic etiology. Survey of aphasia, cerebral palsy, cleft palate and voice disorders, including study of multiple-handicapped child. Fifteen hours of observation required per semester. Project required. (Formerly numbered Speech Pathology and Audiology 321.)

324. *(124.)* **Methods of Speech Pathology (3) I, II**
Prerequisites: Speech Pathology and Audiology 320 and 323.
Application of theories of learning to techniques in treatment of specific speech and language disorders with emphasis on problems of articulation, voice, and foreign dialect. Demonstrations.

325. Field Work in Speech, Hearing and Language (1-3) I, II Cr/NC
Two hours for each unit of credit.
Prerequisite: Departmental approval.
Field observation and participation under supervision with small groups or with individuals who have speech, hearing or language impairment. Maximum credit three units.

326. *(126.)* **Clinical Practice in Speech Pathology (1) I, II, S**
Three hours of laboratory.
Prerequisites: Speech Pathology and Audiology 320, 324, and three upper division units in speech pathology and audiology. Admission is based on passage of a competency examination prior to enrollment and departmental approval.
Supervised practice with representative speech problems. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for Speech Pathology and Audiology 326, 345, 346, and 626. One unit represents 26 hours of direct clinical practice. Qualified transfer students must enroll in at least one unit of 326 prior to 626.

340. *(140.)* **Audiometry: Principles (3) I, II**
Prerequisites: Speech Pathology and Audiology 105 and Psychology 260.
Anatomy and physiology of the human ear, theories of hearing, transmission, measurement of sound, medical aspects, pathology and surgery of the ear, survey of current audiometric techniques and diagnostic implications of basic test battery.

341. *(141.)* **Techniques of Audiometry (1-3) I, II**
Three hours of laboratory per unit.
Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 340.
Provides the laboratory experience necessary for the California School Audiometrist Certificate when taken concurrently with Speech Pathology and Audiology 340. Provides five hours screenings for ASHA credit. May be used to duplicate classic auditory experiments when taken in conjunction with Speech Pathology and Audiology 543, 547, 640, 644, or 649. (Formerly numbered Speech Pathology and Audiology 342.)

342. *(141.)* **Audiometry: Application (3) I, II**
Two lectures and two hours of activity.
Prerequisite: Speech Pathology and Audiology 340.
Speech testing, masking, tests for nonorganic and for sensorineural hearing loss. (Formerly numbered Speech Pathology and Audiology 341.)

345. *(145.)* **Clinical Practice in Audiologic Assessment (1) I, II, S**
Three hours of laboratory.
Prerequisite: Speech Pathology and Audiology 341.
Supervised procedures with pure tone, speech, and special audiologic testing. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for 326, 345, and 346. One unit represents 26 hours of direct clinical practice.

346. *(146.)* **Clinical Practice with Hard of Hearing (1) I, II, S**
Three hours of laboratory.
Prerequisites: Speech Pathology and Audiology 326 and 551.
Supervised practice with hard of hearing clients. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for 326, 345, and 346. One unit represents 26 hours of direct clinical practice.

356. *(157.)* **Clinical Practice with the Deaf (1) I, II**
Three hours of laboratory.
Prerequisites: Concurrent registration in Speech Pathology and Audiology 552 and 553. Admission to clinical practicum includes successful completion of competency examination.
Supervised therapy with representative deaf problems in the San Diego State University Speech and Hearing Clinic. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit six units for Speech Pathology and Audiology 356, 357 and 656.

357. *(156.)* **Field Work with the Deaf (1-2) I, II Cr/NC**
Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 550.
Field observation and participation under supervision with small groups of hearing impaired youngsters. Maximum combined credit six units for Speech Pathology and Audiology 356, 357 and 656.

358. *(158.)* **Manual Communication for the Hearing Impaired (2) I, II Cr/NC**
Prerequisites: Demonstrated professional need and consent of instructor.
Structure, vocabulary and syntax of manual communication including the development of competencies in manual communication and in the use of manual communication as a method of teaching the hearing impaired.

390. *(190.)* **Workshop in Speech Pathology and Audiology (1-3) I, II**
Study of some problem in speech pathology or audiology. Maximum credit six units.

433. *(133.)* **Clinical Practice in Public Schools (4) I, II Cr/NC**
Prerequisites: Speech Pathology and Audiology 529, four units of practica, and postbaccalaureate standing. Prior to admission applicants must receive departmental approval.
Clinical practice in elementary or secondary schools or community colleges in speech pathology and audiology. One hundred twenty hours practicum required. Applies only toward Restricted Credential, Speech and Hearing Specialist or for the Certificate of Clinical Competency in Speech Pathology.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

527. *(127.)* **Diagnostic Methods in Speech Pathology (3) I, II**
Prerequisites: Speech Pathology and Audiology 320, 323, and 340, and credit or concurrent registration in Speech Pathology and Audiology 326.
Principles and procedures in the assessment and prognosis of communication disorders to include delayed speech and mental retardation. Case histories, testing, interviewing, and clinical reporting. Child, parent, and teacher counseling.

528. *(128.)* **Diagnostic Practicum in Speech Pathology (3) I, II**
One lecture and six hours of laboratory.
Prerequisite: Speech Pathology and Audiology 527 and passage of a competency examination.
Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment.

529. *(129.)* **Orientation to Public School Practicum (3) I, II**
Prerequisites: Speech Pathology and Audiology 324 and 527. Minimum of 50 hours of supervised clinical practicum. Prior to admission, applicants must receive departmental approval.
Goals, materials and procedures for organizing and administering speech, language and hearing programs in the school. Fifteen hours of observation and fifteen hours of screening required. Should be taken the semester before Speech Pathology and Audiology 433 or Special Education 480E (severe oral language or speech and hearing emphases). (Formerly numbered Speech Pathology and Audiology 329.)

530. *(130-S.)* **Family Communication Dynamics (3)**
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.
Systematic study of the design features of language as they relate to communication behavior. The primary focus is the role of language structure in disordered communication.

532. *(132.)* **Assessment of Language Disorders (3) I, II**
Prerequisite: Speech Pathology and Audiology 531.
Techniques of language assessment, including administration and evaluation of particular diagnostic tests. Organic implications in auditory perceptual problems. Discussions and demonstrations. Project required.

539. Neuropathologies of Speech, Hearing and Language (3) II
Prerequisites: Speech Pathology and Audiology 321 and 340. Recommended: Speech Pathology and Audiology 323.
Research and theory concerning the nature, etiologies and principles of treatment of disorders of speech, hearing and language resulting from pathologies of the nervous system.

543. *(143.)* **Hearing Amplification (1 or 3) I**
Prerequisites: Module I: Speech Pathology and Audiology 340. Module II: Speech Pathology and Audiology 342.
Module I includes hearing aid components, functions, trouble shooting and client orientation to amplification (1 unit). Module II includes hearing aid evaluations, fittings, and electroacoustical hearing aid analysis (2 units). Students may elect Module I (1 unit) or Modules I and II (3 units).

547. *(147.)* **Hearing Conservation (3) II**
Prerequisite: Speech Pathology and Audiology 341.
Noise measurement, analysis and reduction and its effects on hearing and communication. Damage risk criteria and methods of hearing protection.

550. *(150.)* **Problems of Deafness (3) I**
Educational programs, services and resources for hearing impaired; historical background, philosophy, sociological and psychological problems.

551. *(151.)* **Speech Reading and Auditory Training (3) I, II**
Prerequisites: Speech Pathology and Audiology 320 and 340.
Theory and methods of speech reading; auditory rehabilitation methods including survey of amplification systems. Fifteen hours of observation in program for deaf, severely hard of hearing.

552. *(152.)* **Articulation Disorders and Methods (3) II**
Prerequisites: Speech Pathology and Audiology 321 and 551.
Significant theories and research in prevention and remediation of articulatory disorders. Includes emphases on speech habilitation of hearing impaired, cognitive and motor processing.

553. *(153.)* **Language Disorders and Methods (3) I, II**
Prerequisites: Speech Pathology and Audiology 531 and 551.
Significant theories and research in language development and remediation. Includes emphasis on application to hearing impaired individuals.

596. *(198.)* **Selected Topics in Speech Pathology and Audiology (1-4) I, II**
Prerequisite: Twelve units in speech pathology and audiology.
Specialized study of selected topics from the area of speech pathology and audiology. Maximum credit six units. Maximum credit three units applicable on a master's degree.

GRADUATE COURSES Refer to the Graduate Bulletin.

Study Skills

Refer to section on University Studies.

Telecommunications and Film

In the College of Professional Studies

Faculty

Chair: Jones
Professors: Anderson, Jameson, Johnson, Jones, Lee, Madsen, Steen, Wylie
Associate Professors: Heighton, Martin, Meador, Misiorowski
Assistant Professor: McKee

Offered by the Department

Master of Arts degree in radio-television.
Major in radio-television, with the A.B. degree in applied arts and sciences.
Major in radio-television, with the B.S. degree in applied arts and sciences.
Major in drama, with emphasis in design for television. *See* Drama.
Minor in radio-television.

Radio-Television Major

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

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

The A.B. degree is designed for students interested in developing a more liberal education as they develop competency in, and understanding of, radio, television and film. The A.B. degree permits flexible programs utilizing courses in and out of the department which will prepare students in such broad areas as design for television and film, media communications theory, broadcast advertising, instructional radio and television, and the like.

A minor is required with this major.

Preparation for the major. Telecommunications and Film 100, 110, 120, 121, 122, 123, and 160. (21 units.)

Major. A minimum of 24 upper division units in telecommunications and film to include Telecommunications and Film 500 or 505 and 21 units of electives selected with the approval of the department. No more than 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 in the section of this catalog on "Graduation Requirements."

The B.S. degree is designed to prepare students for professions in radio, television and film or for occupations where extensive knowledge of these media is required.

A minor is not required with this major.

Preparation for the major. Telecommunications and Film 100, 110, 120, 121, 122, 123, and 160. Telecommunications and Film 260 is required for students selecting the film sequence; 280 is required for the TV production sequence; 260 or 280 is required for students selecting 501 in the management sequence. (21-24 units.)

Major. A minimum of 36 upper division units to include a core professional sequence, a minimum of six units in an allied professional sequence, and six to twelve units of electives as required.

Core Professional Sequences.

TV Production: Telecommunications and Film 500 or 505, 501, 510, 520, 550, 580 and 581. (22 units.)

Management: Telecommunications and Film 310, 500, 501 or 530, 505, 540, and Psychology 342. (18 units.)

Film: Telecommunications and Film 501, 510, 520, 550, 560, 561 and 562 or 563. (22 units.)

Allied Professional Sequences. (Courses taken in Core Professional Sequences cannot be counted toward the Allied Professional Sequence.)

Advertising: Telecommunications and Film 540, 541, Business Administration 370, 373, Journalism 460, 466, 480, and Psychology 322.

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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.
Education: Telecommunications and Film 570, Education 383, Educational Technology and Librarianship 540, 541, 544, and Elementary Education 362, 372.
Industrial Arts: Industrial Arts 361, 462, 563.
Information Systems: Business Administration 380, 385, 480, 482.
International Media: Telecommunications and Film 363, 590, and Journalism 505.
Law and Government: Telecommunications and Film 505, Journalism 502, Political Science 335, 546, 547A-547B.
Management: Telecommunications and Film 500, Business Administration 350, 351, 352, 453.
Mass Communication: Journalism 500, 508, Psychology 342, Sociology 545, 546, and Speech Communication 535.
News: Telecommunications and Film 310, 505, and Journalism 474, 475, 502.
Performance: Telecommunications and Film 390, 391, Drama 431, 432, and Speech Communication 508.
Playwriting: Telecommunications and Film 510, Drama 420, English 527, 581.
Research Methods: Psychology 322, 342, 405, Journalism 509, Sociology 460, 464.
Scene Design: Telecommunications and Film 450, 550, Drama 440, 448.

Radio-Television Minor

The minor in radio-television consists of a minimum of 15-24 units, 12 units of which must be in upper division. The minor is a focused pattern of courses selected with the approval of the departmental adviser for minors. Areas include:

Film as Art and Communication: Telecommunications and Film 160, 363, 562, 563, and three units of electives.

Broadcast Station Practices: Telecommunications and Film 100, 500, 505, 530, and 540.

Performance: Telecommunications and Film 390, 391, 520; Drama 130; Speech Communication 111A.

Educational Telecommunications: Telecommunications and Film 100, 315, 320-S or 370, 570, and three to six units of electives.

Obtaining courses to fulfill this minor is not easy because of the high demand for courses and limited laboratory facilities.

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

LOWER DIVISION COURSES

100. *(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 setting of American broadcasting and the organization of commercial and educational radio and television stations.

110. *(10.)* **Broadcast Writing (3) I, II**
Prerequisite: Successful completion of the University's writing competency requirement.
Theory and practice in writing materials for oral presentation. Problems of timing and pacing, conversational expression and word color.

120. Staging and Art for Television and Film (3) I, II
Two lectures and more than three hours of activity.
Prerequisite: Limited to telecommunications and film majors.
Aesthetic considerations and technical practices in staging, lighting, and graphics for television and film. Practical experience in university sponsored productions.

121. *(30.)* **Audio Production (3) I, II**
Two lectures and more than three hours of activity.
Prerequisite: Limited to telecommunications and film majors.
Theory of audio production, use of basic audio equipment, and basic sound production. Practical experience in University sponsored productions. (Formerly numbered Telecommunications and Film 130.)

122. Still and Motion Picture Photography (3) I, II
Two lectures and more than three hours of activity.
Prerequisite: Limited to telecommunications and film majors.
Basic film equipment and its use in preparation of photographic materials for film and TV production. Practical experience in University sponsored productions.

123. Video Production (3) I, II
Two lectures and more than three hours of activity.
Prerequisite: Limited to telecommunications and film majors.
Television control room, studio, and auxiliary equipment and their use in production of programs. Practical experience in University sponsored productions.

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.

260. *(162.)* **Film Techniques (3) I, II**
Two lectures and three hours of activity.
Prerequisites: Telecommunications and Film 110, 120, 121, 122, 123, with average grade of 2.0 or better.
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. (Formerly numbered Telecommunications and Film 460.)

280. *(83.)* **Television Production and Directing (3) I, II**
Two lectures and more than three hours of activity.
Prerequisites: Telecommunications and Film 110, 120, 121, 122, 123, 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 (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

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

310. *(112.)* **Radio and Television News Writing and Editing (3) I, II**
Gathering, writing and editing news in special forms required by radio and television. This course not open to students with credit in Journalism 470.

315. *(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**
Explorations 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 and drama courses which will include 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 more than 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 more than 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.

495. *(195.)* **Workshop in Broadcasting (1-3) I, II**
Study of some problem in radio, television or film. Maximum credit six units.
A. Special Projects.
B. Internships or Field Experience Cr/NC.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

500. *(101.)* **Broadcast Management (3) I, II**
Prerequisite: Telecommunications and Film 100.
Administration and organization of radio and television, including radio and television as advertising media, broadcasting research, station organization, promotion and sales, and current developments in radio and television as mass media.

501. Business Aspects of Television and Film Production (3) I, II
Prerequisites: Telecommunications and Film 260 or 280. Normally taken concurrently with Telecommunications and Film 560 or 581.
Financing, preproduction planning, and postproduction of television and film.

505. *(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. *(110.)* **Script Writing for Broadcasting and Film (3) I, II**
Prerequisites: Telecommunications and Film 260 or 280, and successful completion of the University's writing competency requirement.
Development of a single program and series ideas. Scripting of dramatic original and adaptation forms, and the documentary.

520. *(180.)* **Directing Television and Film Drama (3) I, II**
Two lectures and more than three hours of activity.
Planned for prospective directors of plays for television and film. The student will become acquainted with principles, procedures and methods. Practical experience in University-sponsored productions.

530. *(130.)* **Radio Programing (3) II**
Two lectures and more than three hours of scheduled activity.
Prerequisites: Telecommunications and Film 100 and 121.
Formats, policies, production practices and research in modern programing. 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 121, 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.
Prerequisites: Telecommunications and Film 120, 122, 123.
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.

560. *(168A.)* **Film Production (3) I, II**
One lecture and more than six hours of activity. Practical experience in University-sponsored productions.
Prerequisites: Telecommunications and Film 260, 510, and 520.
Advanced practicum in film production. Cameras, lighting, design, sound techniques for super-8 and 16mm productions. (Formerly numbered Telecommunications and Film 560A.)

561. *(168B.)* **Film Direction (3) I, II**
Two lectures and more than three hours of activity.
Prerequisites: Telecommunications and Film 501, 550, and 560.
Studio and location work in the preparation of dramatic and nondramatic films. Practical experience in University-sponsored productions. (Formerly numbered Telecommunications and Film 560B.)

562. *(164.)* **Documentary and Propaganda Film (3) I**
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. *(160.)* **Film Classics (3) I, II**
Prerequisite: Upper division standing.
Viewing and analysis of those American and foreign theatrical films, particularly of the sound era, which represent milestones in the development of the cinema. May be repeated with new content. Maximum credit six units.

565. *(165.)* **Animated Film Techniques (3) I, II**
Two lectures and more than three hours of activity.
Screening of representative examples and production of a filmograph or animated motion picture. Practical experience in University-sponsored productions.

570. *(170.)* **Educational Telecommunications (3) I**
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. *(183.)* **Advanced Programing and Development for Television (3) I, II**
One lecture and more than six hours of activity.
Prerequisites: Telecommunications and Film 280, 510, and consent of instructor.
The development of program ideas into formats for television productions of all types. Practical experience in developing and producing programs for University-sponsored productions.

581. *(184.)* **Advanced Television Directing (3) I, II**
One lecture and more than six hours of activity.
Prerequisites: Telecommunications and Film 100, 280, 520 and consent of instructor.
Presentational techniques and individual projects in the direction and production of television programs. Practical experience in University-sponsored productions.

590. *(108.)* **International Broadcasting (3) II**
Prerequisite: Telecommunications and Film 500 or 505.
Comparative study of broadcasting in various world areas; economic, social and political determinants of broadcasting patterns.

596. *(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. (Formerly numbered Telecommunications and Film 496.)

GRADUATE COURSES

Refer to the Graduate Bulletin.

University Studies

The University offers a number of courses which are not part of a regular departmental curriculum. They provide students with opportunities for achieving academic credit through experimental and nontraditional course work and through courses designed to improve the academic capabilities of students.

General Courses

LOWER DIVISION COURSES

142. Exploring the University (1) Cr/NC
A five-week mini-course to prepare new students academically and ease the transition into the university through instruction in the principles of effective learning, clear thinking, and disciplined study. An orientation to the general nature of higher education and the opportunities it offers for learning.

200. *(99.)* **Selected Activities (1-3) Cr/NC**
Prerequisites: Twelve units of college credit and a minimum grade point average of 2.0.
Supervised experience in college or community activities.
Students interested in enrolling in University Studies 200 should contact the University College Office for information. Applications must be submitted to the University College Office prior to the end of the first week of classes. These courses may not be used to satisfy course requirements for the major or minor. No combination of University Studies 200 and 400 in excess of six units may be counted for credit on a bachelor's degree program.

201. Use of the Library (2) I, II
Resources and facilities of San Diego State University Library including interpretation and use of its principal information retrieval mechanisms.

UPPER DIVISION COURSE

(Intended for Undergraduates)

400. *(199.)* **Selected Activities (1-3) Cr/NC**
Prerequisite: A minimum grade point average of 2.0.
Supervised experience in college and/or community activities.
Students interested in enrolling in University Studies 400 should contact the University College Office for information. Applications must be submitted to the University College Office prior to the end of the first week of classes. These courses may not be used to satisfy course requirements for the major or minor. No combination of University Studies 200 and 400 in excess of six units may be counted for credit on a bachelor's degree program.

Innovative Courses

The University Curriculum Committee sponsors University Studies courses (250, 350, 550) among which are interdisciplinary courses and courses characterized by new methods of teaching and learning. These courses are proposed by faculty or by students acting through a faculty sponsor. After receiving approval from the departments and deans, proposals for such courses are submitted to the University Curriculum Committee, which is authorized to grant up to four semesters' approval subject to periodic review. Questions about individual courses should be directed to the department or departments listed immediately after the University Studies number (250, 350, 550) in the Class Schedule; general inquiries about University Studies courses (250, 350, 550) as a whole should be directed to the chair of the University Curriculum Committee.

Students interested in enrolling in University Studies 250, 350 or 550 should contact the faculty adviser of the department(s) offering the course for further details. Decisions with regard to such matters as course prerequisites, application of the course to the student's major, grading policies, and locations will be made by the relevant departments.

250. Innovative Approaches to Teaching and Learning (1-6)
350. Innovative Approaches to Teaching and Learning (1-6)
550. Innovative Approaches to Teaching and Learning (1-6)

University Studies
Courses in Study Skills

Faculty

Chair: Basile

Associate Professors: Basile, Crafts, Denman

Lecturers: Albanese, Hallahan, Johns, Johnson, M., Johnson, P., Kuhlman, Lee, Linthicum, McWilliams, Miller, Muilenberg, Padilla, Potts, Sweedler, Sykes

Offered by the Study Skills Center

Courses in reading, writing and learning skills.

Major or minor work in study skills is not offered.

LOWER DIVISION COURSES

The Study Skills Center, located in Library East, offers courses and individual assistance to all students at any university level, including bilingual and international students, who wish to improve reading, writing or other skills, or obtain help with study problems or writing projects. Course work leading to satisfaction of the graduation requirement in writing competency is offered in the Center.

Study skills courses may not be used to satisfy general education requirements and no more than six units may be applied towards a bachelor's degree.

100. English Fundamentals (3) I, II Cr/NC

Practical grammar — including usage, sentence structure, syntax, punctuation and rhetoric.

111. *(R.)* Reading Development (3) I, II Cr/NC

Two lectures and three hours of laboratory.

Improvement of individual reading effectiveness: speed and comprehension, reading for the main idea, skimming, scanning, and word power.

131. Fundamentals of English for International or Bilingual Students (3) I, II Cr/NC

A first course in English intended to develop speaking and listening abilities and elementary reading and writing skills. Satisfactory completion of this course qualifies a student to take Study Skills 132, or, at the discretion of the instructor, Study Skills 133. (Formerly numbered English 1X.)

132. English for International or Bilingual Students (3) I, II Cr/NC

One lecture and four hours of laboratory.

Intermediate course in English with emphasis on the listening, reading, and writing skills necessary for academic study. Satisfactory completion of this course qualifies a student to take Study Skills 133. (Formerly numbered English 1Y.)

133. English for International or Bilingual Students (3) I, II Cr/NC

Advanced listening, reading, writing and research skills. Use of study materials from several academic disciplines; writing of a short research paper in the student's area of interest. (Formerly numbered English 1Z.)

141. Mini-Course: Selected Topics (1) Cr/NC

Assorted short courses which will meet three hours a week for five weeks and will cover a variety of academic skills through intensive lectures and laboratory work.

Suggested topics: Research paper, communication skills, research tools, vocabulary development, learning skills, spelling, grammar, and speed reading.

143. Adjunct Writing: Selected Topics (1) Cr/NC

Instruction in basic writing skills required of a particular discipline. Writing assignments in this course will be coordinated with those from designated lower division courses in selected disciplines; students will learn to refine papers for mechanics, rhetoric, and style within the context of the specified discipline.

150. *(W.)* Writing Development (3) I, II Cr/NC

One lecture and four hours of laboratory.

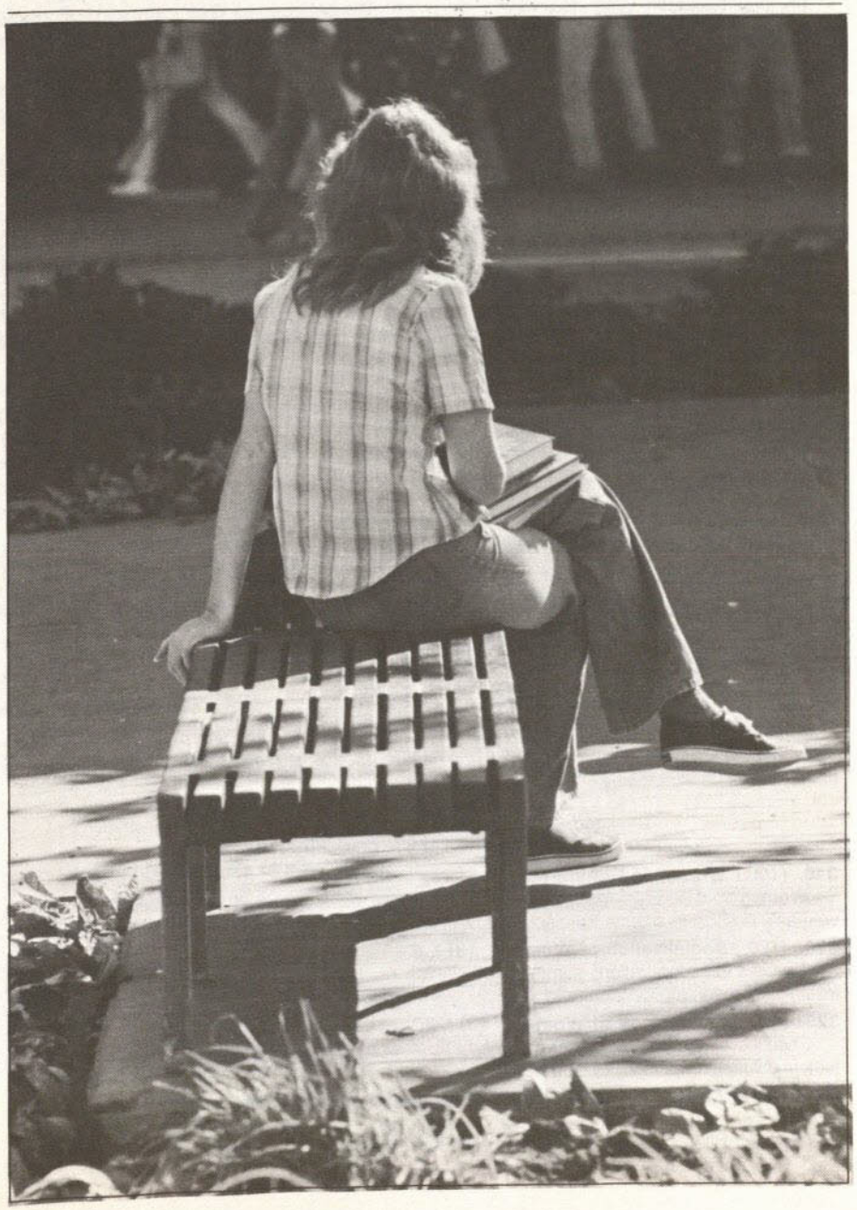
Instruction in basic writing skills, supervised practice, and frequent individual conferences. Open to students at any level of college work. (Satisfies writing competency requirement.) (Formerly numbered Study Skills 101.)

151. Technical Writing (3) Cr/NC

A comprehensive course in preparing and writing technical papers and reports. Emphasis on style, organization and techniques used in composing scientific and technical communications. Analysis of technical publications and the variety of methods used in compiling data and presenting graphic material.

299. *(99.)* Experimental Topics (1-3) Cr/NC

Refer to the catalog statement on Experimental Topics on page 116.



Women's Studies

Administered by the Dean of the College of Arts and Letters

Faculty

Chair: Boxer
Associate Professor: Boxer
Assistant Professors: Huckle, Rotella, Watson
Lecturer: Freundl

Offered by Women's Studies

Minor in women's studies.
Courses in women's studies.
Major work in women's studies is not offered.

Women's Studies Minor

The minor in women's studies consists of 18 units to include Women's Studies 101 or 330; the remaining 15 units should include at least one course from three of the following groups. *Group A:* Experience of women in cultures or eras distinct from our own—Women's Studies 310, 340, 341A-341B; *Group B:* Biological and sociological determinants of women's personality and behavior—Women's Studies 320, 325, 360; *Group C:* Artistic expressions by and about women—Women's Studies 351, 352, 353; *Group D:* Participation of women in public affairs and impact of political philosophies, public institutions and public policy on women's lives—Women's Studies 370, 380, 390.

Students planning graduate work in women's studies should include Women's Studies 595.

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

LOWER DIVISION COURSES

101. *(10.)* **Introduction to Women's Studies (3) I, II**
Overview of the women's movement and women's studies program with emphasis on the relationship between students' personal experiences and their cultural context. (Formerly numbered Women's Studies 110.)

201. Sexism and the Social Sciences (3) I, II
Images of women and men and their roles in society viewed through a feminist critique of conventional, biased concepts and modes of thought in disciplines dealing with human interaction; also proposing alternative strategies for research.

299. *(99.)* **Experimental Topics (1-4)**
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

310. *(100.)* **Women in Comparative Cultures (3) I, II**
Women from an anthropological perspective; social, economic, legal and ideological aspects of women's position in selected preindustrial or transitional compared with industrial societies.

320. *(120.)* **Socialization of Women (3) I, II**
Theories of socialization; summary of studies on the impact of formal and informal social institutions on female development.

325. *(125.)* **Psychology of Women (3) I, II**
Theories of the psychological development of women; investigation of biological and cultural factors influencing personality and behavior.

330. *(130A-130B.)* **Contemporary Issues in the Liberation of Women (3) I, II**
Intensive study of the contemporary women's movement; feminist views of political, economic and social institutions which affect women's lives. Not open to students with credit in Women's Studies 101. (Formerly numbered Women's Studies 330A-330B.)

340. *(140.)* **Women in History (3) I**
Social, cultural, economic, political and intellectual aspects of women's history in Western civilization, with emphasis on impact of modernization on women's roles in family and society.

341A-341B. *(141A-141B.)* **Women in American History (3-3)**
Survey of the social, cultural, economic, political and intellectual history of women in America. Semester I: From colonization to 1860; Semester II: 1860 to present.

351. *(151.)* **Women in the Arts (3)**
Images of women in society as reflected in the plastic, graphic and performing arts; artistic contribution of women. May be repeated with new content. Maximum credit six units.

352. *(150A.)* **Women in Literature (3) I**
Definitions of women in society as reflected in literature and literary criticism. (Formerly numbered Women's Studies 350A.)

353. *(150B.)* **Women Writers (3) II**
Women writers as literary artists and social critics. (Formerly numbered Women's Studies 350B.)

360. *(160.)* **Human Sexuality (3)**
Biological criteria in sex role determination; the relationship of sexual mores and customs to a person's self-concept of sexuality; the relevance of current scientific investigations of the psychophysiology of human sexual response.

370. *(170.)* **Women and the Law (3) I, II**
Legal factors affecting women in employment, education, health and welfare, property ownership and criminal justice, including investigation of public policy issues which affect women's lives.

380. *(180.)* **Women and Political Systems (3) II**
Analysis of the place of women in various political theories, political and economic systems, and the processes which determine political power.

390. *(190.)* **Women and Education (3)**
The educational process and female role socialization; research into personnel policies and curriculum. New learning methods and environments, e.g., women's studies programs, child care centers, and "free" schools.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

498. *(198.)* **Field Experience (3) I, II**
Prerequisite: One upper division course in women's studies.
Observation and analysis of public and private agencies in the San Diego area which deal primarily with women.

499. Special Study (1-3)
Prerequisites: Three upper division units in women's studies and consent of the chair and instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSE

(Also Acceptable for Advanced Degrees)

595. Seminar in Women's Studies (3)
Prerequisites: Six upper division units in women's studies.
Directed research in women's studies. Field of investigation will vary with instructor. Methods of investigation, development of bibliography, presentation of paper based on original research. (Formerly numbered Women's Studies 495.)

Zoology

In the College of Sciences

Faculty

Emeritus: Crouch, Harwood, Kaston, Norland
Chair: Atkins
Professors: Atkins, Bohnsack, Carpenter, Chen, Cohn, Collier, Dexter, Estes, Etheridge, Huffman, Hunsaker, McLean, Monroe, Olson, Wilson
Associate Professors: Cooper, Krekorian, Plymale
Assistant Professors: Avila, Novacek
Lecturers: Graham, Mahr, Metten

Offered by the Department

Master of Arts degree in biology with an emphasis in zoology.
Master of Science degree in biology with an emphasis in zoology.
Major in zoology with the A.B. degree in liberal arts and sciences.
Major in zoology with the B.S. degree in applied arts and sciences.
Single subject teaching credential in life sciences in the area of zoology.
Minor in zoology.

Zoology Major

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

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

A minor is not required with this major.

Preparation for the major. Biology 215; Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L or 231, 231L; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. It is recommended that students select French, German or Russian to satisfy this requirement. Refer to section of catalog on "Graduation Requirements."

Major. A minimum of 24 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503; and 12 units of zoology selected from 400- or 500-level courses at least two of which must include a laboratory.

Zoology Major

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

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

A minor is not required with this major.

Preparation for the major. Biology 215; Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L or 231, 231L; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Major. A minimum of 36 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503; plus a minimum of 16 units of zoology consisting of no less than 3 courses at the 500-level, at least two of which must include a laboratory. Remaining units to be selected in consultation with a departmental adviser; up to eight upper division units may be chosen from chemistry, geology, mathematics, physics, or other area relevant to the student's interests.

Zoology Major

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the School of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Candidates for the single subject teaching credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

Preparation for the major. Biology 215; Botany 200; Chemistry 200, 200L, 201, 201L, and either 230, 230L or 231, 231L; Mathematics 121 and 122, or 150; Physics 125A-125B and 194A-194B; Zoology 200. (38-39 units.)

Major. A minimum of 36 upper division units to include Biology 400 and either Biology 411, 430, 501, or Biology 411, 502, 503; Microbiology 310; plus a minimum of 12 upper division units of zoology to include any two of Zoology 503, 506, 510, 521, 540 or 570; and five units of electives selected in consultation with the Life Sciences Teaching Credential Adviser.

Zoology Minor

The zoology minor is intended to provide recognition for a reasonable amount of study in zoology and related fields by students majoring in other subjects. The minor consists of 20 units in the biological sciences to include Botany 200, Zoology 200, and 12 units in the upper division, at least seven of which must be in zoology.

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

LOWER DIVISION COURSES

Students who declared a major in Biology, Botany, or Zoology prior to the 1978-79 academic year may substitute:

Biology 100 and 100L for the prerequisites of Botany 200 and Zoology 200 now listed for 400- and 500-level biological science courses;

Physics 115A-115B or 124A-124B and 125A-125B or 195, 195L, 196, 196L, 197, 197L for the prerequisites of Physics 125A-125B and 194A-194B now listed for 400- and 500-level biological science courses;

Biology 411 for Biology 520 as listed in older catalogs; Biology 502 for Biology 560 as listed in older catalogs; Biology 503 for Biology 540 as listed in older catalogs. Biology 430 may not be substituted for Biology 540 and 560.

100. Evolution and Diversity of Animals (3)
Animal adaptation and diversity and their relationship to the development of evolutionary theory.

100L. Evolution and Diversity of Animals Laboratory (1)
Prerequisite: Credit or concurrent registration in Zoology 100.
Laboratory course on evolution and diversity of animals involving field trips and laboratory investigations.

108. *(8.)* Human Anatomy (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: An introductory course in high school biology or zoology.
Gross and microscopic anatomy of the organ system of the human body.

150. *(50.)* 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. **This course will be offered for the last time in 1978-79.**

160. *(60.)* Vertebrate Zoology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
An introductory course in the biology of the vertebrates with emphasis on the vertebrate organism as a whole: anatomy, physiology, development and evolution. **This course will be offered for the last time in 1978-79.**

200. Introduction to Zoology (4)
Three lectures and three hours of laboratory.
Prerequisites: Botany 200 and credit or concurrent registration in Biology 215.
Zoology for life sciences major. Animal diversity and evolution; development, morphology and functioning of animal organ systems; activities and behavior patterns of animals; role of animals in human affairs.

299. *(99.)* Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

UPPER DIVISION COURSES

(Intended for Undergraduates)

300. *(166.)* **Honors Course (1-3)**
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.

340. Sociobiology (3) I, II
Prerequisites: Anthropology 102 or Biology 100 or Psychology 101.
Biological bases of social behavior with emphasis on evolution, cooperation, and adaptive significance of social behavior. Not open to biological sciences majors.

430. *(120.)* **Insects and Human Welfare (3) I, II**
Prerequisites: Biology 100, 100L or Botany 100.
The role of insects in global ecosystems with emphasis on medical and economic aspects, adaptations of insects for these roles, and analysis of current problems and tactics in pest management. (Formerly numbered Zoology 330.)

490. *(190.)* **Senior Investigation and Report in Invertebrate Zoology (2)**
Prerequisite: Consent of instructor.
Investigation and reports on the current literature of invertebrate zoology.

496. Experimental Topics (1-4)
Refer to the catalog statement on Experimental Topics on page 116. 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.)* **Methods of Investigation (2) I, II**
One discussion and three additional hours to be arranged.
Prerequisite: Consent of instructor.
Selection and design of individual research in zoology; oral and written reports. Maximum credit four units for Zoology 498 or a combination of this course with Biology or Microbiology 495.

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

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

503. *(103.)* **Embryology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

506. *(106.)* **Comparative Anatomy of the Vertebrates (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Dissection, study and comparison of organ systems of representative vertebrates.

508. *(108.)* **Histology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200. Recommended: Microbiology 310 or Zoology 108.
Descriptive microscopic anatomy of cells, tissues and organs of mammals with special emphasis on humans.

510. *(112.)* **Marine Invertebrate Zoology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Biology 411.
Ecology, morphology, behavior and physiology of marine invertebrates. Frequent field trips to local marine environments.

515. *(115.)* **Ichthyology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Identification, systematics, evolution, structure, physiology, behavior and ecology of fishes.

516. *(116.)* **Herpetology (4)**
Two lectures and six hours of laboratory.
Prerequisites: Zoology 200 and consent of instructor.
The origin, evolution, distribution and systematics of amphibians and reptiles of the world.

517. *(117.)* **Ornithology (4)**
Two lectures, six hours of laboratory or field excursions, and a field project.
Prerequisites: Zoology 200 and consent of instructor.
The study and identification of birds, especially those of the Pacific Coast and the San Diego region.

518. *(118.)* **Mammalogy (4) II**
Two lectures and six hours of laboratory.
Prerequisites: Zoology 200 and either Zoology 506 or consent of instructor.
The evolution, systematics, distribution and ecology of mammals of the world.

521. *(121.)* **General Entomology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Structure, physiology, natural history and classification of insects.

522. *(122.)* **Special Topics in Entomology (3-4)**
Two lectures and three hours of laboratory.
Prerequisite: Zoology 521.
Treatment of some aspect of entomology, such as biological control, microbial control or forest entomology, not covered in regularly scheduled courses. Maximum credit nine units. Maximum credit six units applicable on a master's degree.
Format of course to vary according to the nature of the selected topics.
A. Lecture course.
B. Lecture and laboratory course.

523. *(123.)* **Immature Insects (3)**
Two lectures and three hours of laboratory.
Prerequisite: Zoology 521.
Collection, preservation, identification and biological study of the immature stages of the different insect orders. Course designed to meet the needs of students specializing in invertebrate zoology, agricultural and medical entomology, parasitology, and systematics.

524. *(124.)* **Insect Ecology (3)**
Prerequisites: Biology 411 and Zoology 521.
Ecological principles as applied to insects, including consideration of crop ecosystems in relation to insect and mite outbreaks.

525. *(125.)* **Economic Entomology (4) II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 521.
Course designed for students of entomology or agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Quarantine measures are also studied.

526. *(126.)* **Medical Entomology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Zoology 200 or Microbiology 310. Zoology 521 required for students in entomology.
The role of insects and other arthropods in the transmission and causation of human diseases and the important diseases of domesticated animals.

527. Biological Control (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 521.
Theory and implementation of biological control of arthropods and weeds. Emphasis on role of natural enemies, including insect pathogens, in the regulation of pest populations. Recommended for students specializing in entomology, botany or applied ecology.

528. *(131.)* **Insect Physiology (4) I**
Two lectures and six hours of laboratory.
Prerequisites: Zoology 521 or an upper division course in physiology, and Chemistry 230, 230L or 231, 231L.
Description, theory and experimental analysis of all major physiological processes in insects.

530. *(130.)* **Advanced Invertebrate Zoology (3)**
One lecture and six hours of laboratory.
Prerequisite: Zoology 200.
Selected topics in advanced invertebrate zoology. May be repeated with new content. Maximum credit six units.

535. *(128.)* **Parasitology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200 or Microbiology 310.
Study of animal parasites with special reference to those of man. Laboratory including identification of important parasites of man, and collection and preservation of local forms.

540. *(140.)* **Physiological Zoology (4) I, II**
Three lectures and three hours of laboratory.
Prerequisite: Zoology 200.
A comparative and evolutionary study of the functions of organ systems and their environmental significance.

555. *(155.)* **Principles of Taxonomy, Systematics and Phylogeny (4)**
Two lectures and six hours of laboratory.
Prerequisite: Any one of the following: Zoology 200; Botany 501, 502, 503.
Basis for the classification of organisms. Modern concepts and their application in zoology. Specific problems in laboratory and field.

560. *(160.)* **Lower Vertebrate Paleontology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of nonmammalian vertebrates, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included.

561. *(161.)* **Mammalian Paleontology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of mammals, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included. Zoology 561 need not follow in sequence with Zoology 560.

570. *(170.)* **Animal Behavior (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Biology 215; Zoology 200 or Psychology 210 and 260 for psychology majors.
Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of behavior.

571. Hormonal Aspects of Behavior (3)
Prerequisites: Biology 430 or 502, or Zoology 540.
Chemoregulatory mechanisms operating within multicellular organisms will be discussed; the structural and chemical components of regulatory systems will be examined in terms of their behavioral effects on the organism.

580. Aquaculture (3)
Prerequisites: Biology 411 or 501, plus either Zoology 200 or 506.
Principles and practices of the farming of aquatic organisms.

GRADUATE COURSES

Refer to the Graduate Bulletin.

ADDENDA

Faculty and Administration

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Faculty and Administration 1977 — 1978

COLBOURN, TREVOR (1973) ..... Acting President, Professor of History
A.B. (Hons), London; M.A., College of William and Mary; A.M., Oh.D., Johns Hopkins University.

ABBOTT, MITCHEL T. (1964) ..... Professor of Chemistry
B.Sc., Ph.D., University of California, Los Angeles.

ABBOTT, PATRICK L. (1971) ..... Professor of Geology
B.S., San Diego State University; M.A., Ph.D., University of Texas at Austin.

ACKERLY, ROBERT S., JR. (1963) ..... Professor of Secondary Education
A.B., College of Wooster; A.M., Colgate University; Ed.D., Indiana University.

ACOSTA, EDMUNDO O. (1977) ..... Lecturer in Economics
A.B., Rice University; M.A., Washington University.

ADAMS, ELSIE B. (1971) ..... Associate Dean, College of Arts and Letters; Professor of English
B.S., M.A., Ph.D., University of Oklahoma.

ADAMS, JAMES P. (1976) ..... Lecturer in Social Work
A.B., Tougaloo College; M.S.W., S.U.N.Y., Stony Brook.

ADAMS, WILLIAM J. (1955) ..... Professor of Speech Communication
B.S., McMurry College; M.A., Northwestern University; Ph.D., Stanford University.

AHRONS, CONSTANCE R. (1977) ..... Lecturer in Social Work
A.B., Upsala College; M.S.S.W., Ph.D., University of Wisconsin, Madison.

AJEMIAN, JAMES A. (1970) ..... Assistant Professor of Social Work
A.B., Harvard College; M.S., Columbia University; Ph.D., University of Michigan.

ALEXANDER, JAMES V. (1967) ..... Associate Professor of Botany
A.B., San Diego State University; M.S., Ph.D., University of California.

ALF, EDWARD F., JR. (1963) ..... Professor of Psychology
A.B., San Diego State University; Ph.D., University of Washington.

ALLEN, ELIZABETH J. (1971) ..... Associate Professor of Speech, Pathology and Audiology
A.B., Seattle Pacific College; M.A., Ph.D., Louisiana State University.

ALIOTTI, NICHOLAS C. (1977) ..... Associate Professor of Counselor Education
M.A., University of Minnesota, Minneapolis; University of Georgie, Athens.

ALMOND, FRANK W. (1968) ..... Professor of Music
A.B., M.A., San Diego State University; Ph.D., Florida State University.

ALTAMURA, NICHOLAS C. (1967) ..... Assistant Professor of Secondary Education
B.S., Ithaca College; M.Ed., University of Arizona; Ph.D., Arizona State University.

ALVARADO, ELIZABETH R. (1974) ..... Counselor
A.B., California State; M.S., San Diego State University.

AMBLE, KJELL (1962) ..... Professor of Drama
A.B., Denison University; M.A., Ph.D., Northwestern University.

ANDERES, EUGENE A. (1968) ..... Associate Professor of Microbiology
A.B., M.S., San Diego State University; Ph.D., Oregon State University.

ANDERSON, ALLAN W. (1962) ..... Professor of Religious Studies
A.B., Washington Missionary College; M.A., Trinity College; Ph.D., Columbia University.

ANDERSON, DWIGHT G. (1969) ..... Associate Professor of Political Science
A.B., University of Montana; M.A., Ph.D., University of California, Berkeley.

ANDERSON, ERNEST F. (1971) (Under contract 1969-70) ..... Assistant Dean for Student Affairs, School of Social Work; Associate Professor of Social Work
A.B., California State University, Los Angeles; M.S.W., San Diego State University; D.S.W., University of Southern California.

ANDERSON, EVANS L. (1954) ..... Professor of Elementary Education
A.B., Gustavus Adolphus College; M.A., University of Minnesota; Ed.D., University of Denver.

ANDERSON, GRAYDON K. (1949) ..... Professor of Economics
A.B., Willamette University; Ph.D., University of Wisconsin.

ANDERSON, HAYES L. (1966) ..... Professor of Telecommunications and Film
A.B., Oregon State University; M.A., Ph.D., Michigan State University.

ANDERSON, NANCY (1972) ..... Psychometrist
A.B., M.S., San Diego State University.

ANDERSON, PAUL V. (1954) ..... Professor of Music
B.M., 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.

ANDRAIN, CHARLES F. (1964) ..... Professor of Political Science
A.B., Whittier College; M.A., Ph.D., University of California.

ANDRUS, RUTH (1962) ..... Professor of Physical Education
B.S., Utah State University; M.S., University of Oregon; Ph.D., State University of Iowa.

ANGIONE, RONALD J. (1969) ..... Associate Professor of Astronomy
A.B., M.S., San Diego State University; Ph.D., University of Texas.

ANINGER, THOMAS (1967) ..... Assistant Professor of English
A.B., M.A., Ph.D., University of California, Los Angeles.

ANNAS, ALICIA M. (1970) ..... Associate Professor of Drama
A.B., University of Detroit; M.F.A., University of Texas.

ANTHONY, SALLY M. (1965) ..... Professor of Secondary Education
A.B., University of California, Los Angeles; Ed.M., Ed.D., Rutgers University.

APPLEBY, ANDREW B. (1973) ..... Associate Professor of History
A.B., Ph.D., University of California, Los Angeles.

APPLEBY, JOYCE O. (1967) ..... Professor of History
A.B., Stanford University; M.A., University of California, Santa Barbara; Ph.D., Claremont Graduate School.

ARCHER, ELLIS C. (1956) ..... Professor of Information Systems
B.S., Northwestern State College; M.S., University of Kansas; Ed.D., Stanford University.

ARCINIEGA, 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.

ASSAF, NANCY C. (1976) ..... Assistant Librarian
A.B., University of Colorado; M.A. (L.S.), University of Denver.

ATCHISON, THOMAS J. (1965) ..... 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
A.B., M.Sc., University of British Columbia; Ph.D., Oregon State University.

AUFSESSER, PETER M. (1975) ..... Assistant Professor of Physical Education
B.S., Springfield College; Ed.M., State University of New York, Buffalo; Ph.D., University of Maryland.

AUSTIN, JOAN F. (1970) ..... Associate Professor of Art
A.B., California State University, Long Beach; M.F.A., Cranbrook Academy of Art.

AVILA, VERNON L. (1973) ..... Assistant Professor of Zoology
B.S., University of New Mexico; M.A., Northern Arizona University; Ph.D., University of Colorado.

AWBREY, FRANK T. (1964) ..... Associate Professor of Biology
A.B., University of California, Riverside; M.A., Ph.D., University of Texas.

AYALA, MARTA B. (1977) ..... Assistant Librarian, Imperial Valley Campus
B.S., University of Minnesota, Minneapolis; M.S., University of Arizona.

AYALA, REYNALDO (1969) ..... Acting Assistant Dean for Student Affairs; Associate Professor of Geography, Imperial Valley
A.B., University of Minnesota; M.A., Ph.D., Southern Illinois University.

BAASE, SARA (Mrs.) (1972) ..... Assistant Professor of Mathematics
A.B., New York University; M.A., Ph.D., University of California, Berkeley.

BABILOT, GEORGE (1956) ..... Professor of Economics
A.B., Hastings College; M.A., University of Nebraska; Ph.D., University of Oregon.

BACON, ELIZABETH A. (1975) ..... Director of Disabled Students Services
A.B., M.S., San Jose State.

BAER, ADELA S. (1962) ..... Professor of Biology
B.S., University of Illinois; Ph.D., University of California.

BAILEY, ALLAN R. (1968) ..... 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
A.B., M.A., Central Washington State College; Ed.D., University of Missouri.

BAKER, DOUGLAS L. (1952, except 1953) ..... Professor of Elementary Education
A.B., Lynchburg College; M.S., Ed.D., University of Southern California.

BAKER, JAMES R. (1956, except 1961-62) ..... Professor of English
A.B., M.A., Ph.D., University of Denver.

BAKER, KEEFE L. (1965) ..... Professor of Art
B.F.A., University of Colorado; M.F.A., State University of Iowa.

BAKER, WILLIAM S. (1973) ..... Associate Medical Director, M.D., Health Services
B.S., University of Detroit; M.D., Wayne University.

BALDWIN, ELMER D. (1963) ..... Professor of Education, Imperial Valley Campus
A.B., College of the Pacific; M.A., University of Connecticut; Ed.D., Washington State University.

BALL, JOSEPH W. (1975) ..... Assistant Professor of Anthropology
A.B., Fordham University; M.A. University of Wisconsin.

BANKS, JAMES H. (1976) ..... Assistant Professor of Civil Engineering
B.E., Vanderbilt University; M.S., Ph.D., University of California, Berkeley.

BARAL, DAVID P. (1976) ..... Assistant Professor of Bilingual Education, Imperial Valley
A.B., Ripon College; A.M., Stanford University; Ph.D., University of Arizona.

BARBER, WILLIAM F. (1959) ..... Associate Dean for Graduate Studies, School of Business Administration; Professor of Marketing
B.B.A., M.B.A., Ph.D., University of Washington.

BARCKLEY, ROBERT E. (1955) ..... Professor of Economics
B.S., University of North Dakota; M.S., Columbia University; Ph.D., University of Illinois.

BARCLAY, A. BERNICE (Mrs.) (1962) ..... Associate Librarian
A.B., San Diego State University; M.A.L.S., University of Denver.

BARCLAY, WILLIAM J., JR. (1977) ..... Assistant Professor of Sociology
A.B., University of North Carolina, Chapel Hill; M.A., Cornell University; Ph.D., Michigan State University.

BARNES, ALFRED C., JR. (1968) ..... Associate Professor of Health Science and Safety
A.B., M.A., Arizona State University; H.S.D., Indiana University.

BARNETT, CAROL A. (1971) ..... Assistant Professor of Biology
A.B., Hendrix College; M.S., University of Arkansas Medical Center; Ph.D., University of Texas.

BARONE, JOAN F. (1960) ..... Associate Professor of Physical Education
B.S., Sargent College, Boston University; M.S., Springfield College, Massachusetts.

BARRERA, ERNESTO M. (1969) ..... Professor of Spanish
Doctor en Leyes, University of Cartagena, Colombia; M.A., Ph.D., University of Southern California.

BARTEL, BRADLEY N. (1975) ..... Assistant Professor of Anthropology
A.B., Brooklyn College; Ph.D., University of Missouri.

BARTHOLOMEW, FRANCIS M., JR. (1967) ... Assistant Professor of History
A.B., University of California; M.A., Ph.D., Princeton University.

BASILE, DONALD D. (1976) ... Director and Associate Professor, Study Skills Center
B.S., Xavier; M.Ed., University of Illinois; Ed.D., West Virginia.

BAXTER, WILLIAM L. (1963) ... Professor of Microbiology
A.B., Ph.D., University of California, Los Angeles.

BEARMAN, DAVID L. (1974) ... M.D., Director of Health Services
B.S., University of Wisconsin; M.D., University of Washington.

BEATTY, JAMES R. (1973) ... Associate Professor of Management
A.B., Franklin College; M.S., Indiana State University; Ph.D., University of Northern Colorado.

BECKER, GEORGE J. (1969) ... Associate Professor of Elementary Education
A.B., St. Peter's College; M.A., Fordham University; Ph.D., New School for Social Research.

BECKER, GERALD A. (1958) ... Professor of Mathematics
A.B., M.S., Ph.D., State University of Iowa.

BECKLUND, LESTER A. (1967) ... Professor of Secondary Education
B.S., M.Ed., Ph.D., University of Minnesota.

BEDORE, ROBERT L. (1959) ... Professor of Mechanical Engineering
B.S.M.E., M.S.M.E., Purdue University. Registered Professional Mechanical Engineer.

BEE, CLIFFORD P. (1969) ... Professor of Secondary Education
A.B., M.A., Western Michigan University; Ph.D., Michigan State University.

BEHM, ROBERT J. (1975) ... Assistant Professor of Secondary Education
B.S., United States Merchant Marine Academy; M.S., Ph.D., University of Washington.

BELASCO, JAMES A. (1971) ... Professor of Management
B.S., Cornell University; M.B.A., Hofstra University; Ph.D., Cornell University.

BELCH, MICHAEL A. (1976) ... Assistant Professor of Marketing
B.S., Penn State University; M.B.A., Drexel University.

BELCHER, DAVID W. (1957) ... Professor of Management
B.B.A., M.A., Ph.D., University of Minnesota.

BELLINGHIERE, JOSEPH J. (1973) ... Assistant Professor of Drama
A.B., Creighton University; M.A., Humboldt State University; Ph.D., Florida State University.

BENDER, STEPHEN J. (1970) ... Professor of Health Science and Safety
B.S., Brockport State University; M.S., H.S.D., Indiana University.

BENJAMIN, ROBERT L. (1953) ... Professor of Speech Communication
A.B., University of California; M.S., Ph.D., University of Wisconsin.

BENNETT, LARRY E. (1970) ... Professor of Chemistry
B.S., San Diego State University; Ph.D., Stanford University.

BENSON, JACKSON J. (1966) ... Professor of English
A.B., Stanford University; M.A., San Francisco State University; Ph.D., University of Southern California.

BENTON, CARL W. (1948) ... Professor of Physical Education
B.S., University of California, Los Angeles; M.S., Ed.D., University of Southern California.

BERG, MARLOW J. (1970) ... Professor of Elementary Education
B.S., M.A., Ph.D., University of Minnesota.

BERG, ROBERT V. (1963) ... Professor of Art
B.S., Moorhead State College, Minnesota; M.F.A., University of Minnesota.

BERGE, DENNIS E. (1963) ... Professor of History
A.B., M.A., San Diego State University; Ph.D., University of California.

BERRY, RICHARD W. (1961) ... Professor of Geology
B.S.E.M., Lafayette College; M.A., Ph.D., Washington University.

BERTINE, KATHE (1973) ... Associate Professor of Geology
A.B., Vassar College; M.A., M.Ph., Ph.D., Yale University.

BIGELOW, MARYBELLE S. (Mrs. K. G.) (1956) ... Professor of Art
A.B., M.A., University of California, Los Angeles; additional graduate study, Teachers College, Columbia University, and University of California.

BIGGER, W. RICHARD (1952) ... Professor of Public Administration and Urban Studies
A.B., M.A., University of Wisconsin; Ph.D., University of California, Los Angeles.

BIGGS, MILLARD R. (1958) ... Associate Dean, College of Professional Studies; Professor of Music
B.M., Youngstown University; M.F.A., Ohio University; Ph.D., University of Iowa.

BIRCH, AILEEN J. (Mrs. C. E.) (1949) ... Assistant Professor of Elementary Education
A.B., M.A., San Diego State University.

BLACK, BARBARA B. (1970) ... Professor of Nursing
R.N., E. W. Sparrow Hospital School of Nursing; B.S., University of Minnesota; M.S., Indiana University.

BLANC, SAM S. (1966) ... Professor of Elementary Education
A.B., Colorado State College; M.A., Ed.D., University of Denver.

BLICK, JAMES D. (1966) ... Associate Professor of Geography
A.B., M.A., Ph.D., University of California, Los Angeles.

BLOCK, RUSSELL L. (1969) ... Associate Professor of Finance
A.B., San Diego State University; J.D., University of California.

BLOOMBERG, WARNER (1973) ... Associate Professor of Sociology
A.B., M.A., Ph.D., University of Chicago.

BLYTH, JOHN D. (1957) ... Professor of Music
B.M., M.M., Illinois Wesleyan University; Ed.D., Teachers College, Columbia University.

BOE, ALFRED F. (1968) ... Assistant Professor of English
A.B., M.A., Ph.D., University of Arizona.

BOHNSACK, KURT K. (1956) ... Professor of Zoology
B.S., Ohio University; M.S., Ph.D., University of Michigan.

BONEY, ELAINE E. (1963) ... Professor of German
A.B., University of Kansas; M.A., University of Wisconsin; Ph.D., University of Texas.

BOOSTROM, RONALD L. (1971) ... Associate Professor of Public Administration and Urban Studies
A.B., California State University, Long Beach; Master of Criminology, University of California, Berkeley; Doctor of Criminology, University of California, Berkeley.

BORGES, MARILYN A. (1974) ... Assistant Professor of Psychology
A.B., University of Hawaii; M.A., Ohio Wesleyan University; Ph.D., University of California, San Diego.

BORKAT, ROBERTA F. (Mrs. F.) (1969) ... Associate Professor of English
A.B., Cornell University; Ph.D., University of California, San Diego.

BOSKIN, WARREN D. (1965) ... Associate Professor of Health Science and Safety
B.S., Brooklyn College; M.S., University of Illinois; Ed.D., West Virginia University.

BOTKIN, PATRICIA T. (Mrs.) (1969) ... Associate Professor of Elementary Education
B.S., M.S., Brockport State Teachers College; Ed.D., University of Rochester.

BOWNE, WILLIAM F. (1959) ... Associate Professor of Art
B.Ed., M.A., University of California, Los Angeles.

BOXER, MARILYN JACOBY (1974) ... Associate Professor of Women's Studies
A.B., University of Redlands; M.A., Ph.D., University of California, Riverside.

BRADY, RICHARD C. (1977) ... Associate Professor of Special Education
B.S., University of Southern California; M.A., Fresno State; Ph.D., University of California.

BRANAN, ALVORD G. (1969) ... Acting Dean, University College; Associate Professor of French
A.B., University of Florida; M.A., Middlebury College; Ph.D., Tulane University.

BRANCA, NICHOLAS A. (1976) ... Associate Professor of Mathematics
B.S., Iona College; M.A.T., Harvard University; Ed.D., Teachers College, Columbia University.

BRANDT, CHARLES L. (1957) ... Professor of Biology
A.B., Ph.D., Stanford University.

BRANSTETTER, R. DEANE (1955) ... Professor of Mathematics
B.S., A.B., Northeast Missouri State Teachers College; M.S., University of Iowa; Ph.D., Iowa State College.

BRASHERS, HOWARD C. (1968) ... Professor of English
A.B., University of California; M.A., San Francisco State University; Ph.D., University of Denver.

BRAY, HENRY G. (1962) ... Professor of Mathematics
A.B., San Diego State University; M.S., Ph.D., Iowa State University.

BRIDENSTINE, DON C. (1956) ... Professor of Economics
B.S., University of Oregon; A.M., Ph.D., University of Southern California.

BRIGGS, ROBERT M. (1957) ... Professor of Secondary Education
A.B., Colorado State College of Education; M.A., Stanford University; Ed.D., Colorado State College of Education.

BROADBENT, HARRY H. (1949) ... Associate Professor of Physical Education
A.B., University of Oklahoma; M.S., University of Pennsylvania.

BRODERICK, WILLIAM A. (1977) ... Director of Learning Resource Center
A.B., Iowa State Teachers College; M.A., State College of Iowa; Ed.D., Indiana University, Bloomington.

BRODIE, SCOTT A. (1977) ... Lecturer in Art
B.S., University of Massachusetts, Amherst; M.F.A., School of the Museum of Fine Arts.

BRODSHATZER, ARTHUR (1956) ... Professor of Accounting
B.B.A., City College of New York; M.B.A., New York University; D.B.A., University of Southern California; Certified Public Accountant.

BROWN, HAROLD K. (1971) ... Director, Campus Information Systems
A.B., San Diego State University; M.B.A., Fordham University.

BROWN, JAMES W. (1975) ... Lecturer in Psychology
A.B., University of California, Santa Cruz; M.A., Ph.D., University of Wisconsin.

BROWN, RUTH M. C. (Mrs. C.) (1971) ... Associate Professor of English
A.B., Montana State University; M.A., Texas Western College; Ph.D., Arizona State University.

BROWN, WILLIAM L. (1962) ... Associate Professor of Electrical Engineering
B.S.E.E., Professional Degree in Electrical Engineering, Mississippi State University; Registered Electrical Engineer.

BRUCE, PAUL (1957) ... Professor of Counselor Education
A.B., Antioch College; M.A., Claremont Graduate School; Ph.D., University of Iowa.

BRUDERER, CONRAD (1963) ... Professor of Music
B.M., Oberlin Conservatory; M.M., D.M., Indiana University.

BRUNSON, THEODORE R. (1966) ... Professor of Music
B.S., University of Minnesota; M.M., University of Nebraska; D.M.A., University of Arizona.

BRYSON, JEFF B. (1970) ... Professor of Psychology
A.B., University of Texas; M.S., Ph.D., Purdue University.

BRYSON, REBECCA (1972) ... Test Officer; Assistant Professor of Psychology
A.B., Queens College; M.S., Ph.D., Purdue University.

BUCK, ROBERT E. (1969) ... Associate Professor of Sociology
B.S., M.S., Trinity University; Ph.D., University of Texas.

BUCKALEW, JAMES K. (1967) ... Professor of Journalism
A.B., M.A., Indiana State College; Ph.D., University of Iowa.

BUKER, WALLACE R. (1976) ... M.D., Health Services
A.B., Ohio State University; M.D., UCLA School of Medicine.

BUMPUS, JERRY D. (1971) ... Professor of English
A.B., University of Missouri; M.F.A., University of Iowa.

BURDICK, DAVID L. (1968) ... Associate Professor of Mathematics
A.B., University of California; M.A., Ph.D., University of New Mexico.

BURGESS, WILLIAM C. (1961) ... Professor of Health Science and Safety
A.B., M.A., University of North Carolina; Ed.D., Teachers College, Columbia University.

BURNETT, LOWELL J. (1972) ... Associate Professor of Physics
B.S., Portland State University; M.S., Ph.D., University of Wyoming.

BURNSIDE, HOUSTON M. (1968) ... Professor of Elementary Education
B.S., Kent State University; M.A., Ph.D., Claremont Graduate School.

BURTON, CHARLES R. (1959) ..... Professor of Mathematics
A.B., M.A., University of Kansas; M.A., Ph.D., University of California.

BUSSINO, GIOVANNI R. (1977) ..... Lecturer in Italian
A.B., Loyola University; M.A., Ph.D., University of California, Berkeley.

BUTLER, GERALD J. (1968) ..... Assistant Professor of English
A.B., University of California; M.A., Ph.D., University of Washington.

BUTLER, HARRY (1975) ..... Dean, School of Social Work; Associate Professor of Social Work
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QUINN, REBECCA A. (1971) ..... Assistant Professor of Physical Education
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RADLOW, ROBERT (1968) ..... Professor of Psychology
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SCHULTZE, WILLIAM A. (1968) ... Professor of Political Science
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B.A., University of Chicago; M.S.S., Smith College, Mass.

Emeritus Faculty

BRAGE GOLDING, Ph.D., President; Professor of Chemistry and Engineering ... 1972-1977
MALCOLM A. LOVE, Ph.D., President; Professor of Public Administration and Urban Studies ... 1952-1971
JOHN W. ACKLEY, Ph.D., Professor of Speech Communication ... 1947-1971
FRED C. AKERS, Ph.D., Associate Professor of Marketing ... 1966-1976
JOHN R. ADAMS, Ph.D., Chairman, Division of Humanities; Professor of English ... 1928-1968

MARVIN D. ALCORN, Ed.D., Professor of Secondary Education ... 1941-1969
ARTHUR J. O. ANDERSON, Ph.D., Professor of Anthropology ... 1961-1975
JULIA G. ANDREWS, M.A., Associate Professor of Art ... 1947-1957
JOE A. APPLE, Ed.D., Professor of Secondary Education ... 1947-1972
GUINIVERE K. BACON, M.A., Associate Professor of Elementary Education ... 1928-1969
KAMILLA U. BAILY, M.S.W., Associate Professor of Social Work ... 1966-1977
CLIFFORD H. BAKER, Ph.D., Professor of Spanish ... 1937-1975
FRANCIS A. BALLANTINE, Ph.D., Professor of Special Education ... 1949-1977
KENNETH E. BARNHART, Ph.D., Professor of Sociology ... 1939-1964
EDWARD G. BAUER, M.S., Professor of Mechanical Engineering ... 1956-1976
HENRY L. BILTERMAN, M.A., Assistant Professor of Mechanical Engineering ... 1956-1977
WILMA T. BOGGS, M.S., Assistant Professor of Family Studies and Consumer Sciences ... 1971-1977
WALLACE W. BRADLEY, M.A., Assistant Professor of Secondary Education ... 1961-1973
BAYLOR BROOKS, B.A., Professor of Geology ... 1931-1966
ELIZABETH M. BROWN, Ph.D., Professor of French ... 1926-1968
EUGENE P. BROWN, M.A., Professor of Accounting ... 1947-1966
LESLIE P. BROWN, Ph.D., Professor of Spanish and French ... 1922-1959
STEVEN J. BRYANT, Ph.D., Associate Professor of Mathematics ... 1964-1978
MARGUERITE A. BRYDEGAARD, Ph.D., Professor of Education ... 1936-1976
GAIL A. BURNETT, Ph.D., Professor of English and Classics ... 1947-1968
RAY R. BUTLER, M.Ed., Professor of Recreation Administration ... 1967-1977
MARTIN P. CAPP, M.S., Dean, School of Engineering ... 1953-1975
HILDING B. CARLSON, Ph.D., Professor of Psychology ... 1948-1969
L. BERYL CAMPBELL, M.A., Associate Professor of Elementary Education ... 1947-1973
MARY F. CAVE, M.A., Associate Professor of Physical Education ... 1946-1977
LEONARD E. CHADWICK, B.S., Associate Professor of Economics ... 1949-1973
JAMES L. CHAPMAN, J.D., Professor of Business Law ... 1957-1973 (except 1961-1963)
ELIZABETH E. CHATER, M.A., Professor of English ... 1964-1977
HELEN S. CLARK, B.A., Assistant Professor of Mathematics ... 1952-1967
ORRIN H. CLARK, Ph.D., Professor of Physics ... 1960-1974
NORITA N. COMIN, M.A., Associate Professor of Family Studies and Consumer Sciences ... 1949-1963
KATHERINE E. CORBETT, M.A., Associate Professor of Education ... 1921-1956
CECELIA T. COVENY, M.P.H., Professor of Nursing ... 1957-1977
ROBERT L. CRAIG, M.S., Assistant Professor of Physics ... 1960-1973
JAMES E. CROUCH, Ph.D., Professor of Zoology ... 1932-1973
JOHN H. DIRKS, M.F.A., Professor of Art ... 1947-1976
LOWELL J. DODDS, M.B.A., Professor of Accounting ... 1957-1975
JOHN EAGLE, Ed.D., Professor of Mathematics ... 1946-1974
SUE W. EARNEST, Ph.D., Professor of Speech Pathology and Audiology ... 1947-1973
PAUL H. EZELL, Ph.D., Professor of Anthropology ... 1956-1977
DALE B. FERREL, M.B.A., Professor of Accounting ... 1957-1977
HORACE H. FISHER, Ph.D., Assistant Professor of Finance ... 1955-1977
J. SHERRICK FISHER, Ph.D., Professor of Elementary Education ... 1953-1977
WALTER B. FORD, B.E., Assistant Professor of Industrial Studies ... 1953-1963
KURT FRIEDRICH, Ed.D., Professor of Secondary Education ... 1949-1977
MINOS D. GENERALES, Degree in Law and Political Science, Professor of Political Science ... 1949-1977
LULA E. GERMANN, B.S., Supervising Librarian ... 1925-1956
E. DANA GIBSON, Ph.D., Professor of Information Systems ... 1947-1971
CLAYTON M. GJERDE, Ph.D., Dean of Continuing Education; Professor of Education ... 1948-1974
SIDNEY L. GULICK, Ph.D., Dean of Arts and Sciences; Professor of English ... 1945-1969
ISABELLA S. HAMMACK, M.A., Associate Professor of Education ... 1936-1957
NEIL J. HARRINGTON, Ed.D., Professor of Chemistry ... 1948-1977
VINCENT C. HARRIS, Ph.D., Professor of Mathematics ... 1950-1976
DOROTHY R. HARVEY, M.A., Assistant Professor of Botany ... 1924-1961
ROBERT D. HARWOOD, Ph.D., Professor of Zoology ... 1928-1969
HARRIET HASKELL, Ph.D., Professor of English ... 1940-1971 (except 1943-1945)
GERALDINE K. HAYNES, B.S.L.S., Supervising Librarian ... 1931-1961
CHARLES M. HUFFER, Ph.D., Professor of Astronomy ... 1961-1968
JAMES J. HUNTER, JR., Ph.D., Professor of Secondary Education ... 1946-1971
EVERETT GEE JACKSON, M.A., Professor of Art ... 1930-1963
LIONEL JOSEPH, Ph.D., Professor of Chemistry ... 1947-1971
JAMES L. JULIAN, Ph.D., Professor of Journalism ... 1951-1975
DAVID C. KALBFELL, Ph.D., Lecturer in Physics ... 1948-1972
BENJAMIN J. KASTON, Ph.D., Professor of Zoology ... 1964-1973
CHESTER B. KENNEDY, Ph.D., Professor of English ... 1937-1969
WILLIAM M. KIDWELL, Ed.D., Director of Placement and Financial Aid; Professor of Psychology ... 1949-1970
JAMES S. KINDER, Ph.D., Professor of Education ... 1953-1966
MARGARET E. KINSEY, M.A., Circulation Librarian ... 1961-1972
BERNARD C. KIRBY, Ph.D., Professor of Sociology ... 1954-1974
ANGELA M. KITZINGER, Ph.D., Professor of Health Science and Safety ... 1945-1969
ORRIN E. KLAPP, Ph.D., Professor of Sociology ... 1948-1973
MARGARET H. LaPRAY, Ph.D., Professor of Elementary Education ... 1969-1977
EVANGELINE M. LeBARRON, B.A., B.S., Professor of Information Systems ... 1946-1975 (except 1948-1949)
DONALD B. LEIFFER, Ph.D., Professor of Political Science ... 1948-1971
MAURICE M. LEMME, Ph.D., Dean of Graduate Studies; Professor of Mathematics ... 1948-1972
CHARLES LIENERT, Ed.D., Professor of Educational Administration ... 1954-1977
EVELYN LOCKMAN, M.A., Professor of Physical Education ... 1948-1977
LAWRENCE W. LUCE, Ed.D., Professor of Industrial Studies ... 1949-1969
ORLANDO J. LuPONE, Ph.D., Professor of Elementary Education ... 1964-1974
RICHARD MADDEN, Ph.D., Professor of Education ... 1939-1966 (except 1961-1964)
THELMA D. MANJOS, Ph.D., Professor of Counselor Education ... 1969-1975
ERNEST L. MARCHAND, Ph.D., Professor of English ... 1946-1968
LESSLEY C. McAMIS, B.A., Documents Librarian ... 1959-1971
IVAN N. McCOLLOM, Ed.D., Professor of Psychology ... 1946-1970
JOSEPH O. McCLINTIC, Ph.D., Professor of Economics ... 1946-1974
WIRT McLONEY, Ed.D., Professor of Industrial Studies ... 1949-1974
JOHN E. MERRILL, Ph.D., Professor of History ... 1946-1977
CLAUDE F. MERZBACHER, Ed.D., Professor of Natural Science ... 1947-1978

DAVID S. MILNE, Ph.D., Professor of Sociology ... 1946-1976
CHESNEY R. MOE, Ph.D., Professor of Physics ... 1931-1972
RUTH H. MORGAN, D.S.W., Professor of Social Work ... 1968-1976
DORIS G. MURDOCK, B.S.L.S., Catalog Librarian ... 1960-1972
MABEL A. MYERS, Ph.D., Professor of Microbiology ... 1946-1970
ABRAHAM NASATIR, Ph.D., Professor of History ... 1928-1974
CALVERT E. NORLAND, M.S., Professor of Zoology ... 1947-1976
NEVA E. NYE, M.Litt., Professor of Nursing ... 1953-1970
ERNEST B. O'BYRNE, Ph.D., Vice President for Planning and External Affairs ... 1954-1975
HERBERT C. PEIFFER, Ph.D., Dean of Students; Professor of Psychology ... 1937-1972
MANVILLE R. PETTEYS, Ed.D., Director of Community Services; Professor of Education ... 1957-1977
PAUL L. PFAFF, Ph.D., Professor of Speech Pathology and Audiology ... 1931-1971
GEORGE L. PHILLIPS, Ph.D., Professor of English ... 1947-1973
E. KINGSLEY POVENMIRE, M.F.A., Professor of Drama ... 1946-1971
DUDLEY A. PRESTON, Ph.D., Associate Professor of Botany ... 1948-1977
HELEN L. PROUTY, Ph.D., Professor of Secondary Education ... 1950-1976
KATHERINE RAGEN, Ph.D., Professor of History ... 1947-1974
ROBERT W. RICHARDSON, Ph.D., Professor of Geography ... 1939-1972 (except 1946-1947)
LIONEL U. RIDOUT, Ph.D., Professor of History ... 1946-1976 (except 1949-1950)
DUDLEY H. ROBINSON, Ph.D., Professor of Chemistry ... 1928-1973
JOSEPH A. RODNEY, Ed.D., Dean, Imperial Valley Campus; Professor of Education ... 1957-1976
SPENCER L. ROGERS, Ph.D., Professor of Anthropology ... 1930-1971
KRAMER ROHFLEISCH, Ph.D., Professor of History ... 1947-1974
MARJORIE C. ROHFLEISCH, M.A., Associate Professor of Music ... 1966-1975
NORMAN ROST, M.M., Professor of Music ... 1951-1977
ROBERT D. ROWE, Ph.D., Professor of Chemistry ... 1946-1971
ILSE H. RUOCCO, M.A., Professor of Art ... 1934-1967
FREDERICK L. RYAN, Ph.D., Professor of Economics ... 1946-1965
FRANCES I. SCHALLES, A.B., Education and Curriculum Materials Librarian ... 1950-1968
WALTER D. SCHMIER, J.D., Associate Professor of Business Law ... 1967-1975
MANFRED H. SCHRUPP, Ph.D., Dean, School of Education, Professor of Secondary Education ... 1948-1974
WILLIAM H. SCHUTTE, M.S., Professor of Physical Education ... 1947-1975
MARION L. SCHWOB, M.S., Associate Professor of Physical Education ... 1934-1960
FRANK L. SCOTT, Ph.D., Professor of Physical Education ... 1947-1977
HUNTON D. SELLMAN, M.S., Professor of Drama ... 1946-1971
FLORENCE H. SENDER, M.A., Associate Professor of Spanish ... 1964-1973
FLORENCE S. SHANNON, M.S., Associate Professor of Physical Education ... 1933-1963
ALLAN E. SHIELDS, Ph.D., Professor of Philosophy ... 1949-1977 (except 1969-1970)
CLAUDE F. SHOUSE, Ph.D., Professor of English ... 1946-1972
WILLIAM H. SHUTTS, Ph.D., Professor of Aerospace Engineering ... 1958-1977
RUTH MARIE C. SIROVICA, M.A., Professor of Nursing ... 1961-1977
CLIFFORD E. SMITH, Ph.D., Professor of Astronomy ... 1937-1969
DEANE F. SMITH, M.Mus., Associate Professor of Music ... 1939-1970
LEILA D. SMITH, M.A., Professor of Music ... 1922-1948
ROSE M. SOMERVILLE, Ed.D., Professor of Family Studies and Consumer Sciences ... 1967-1977
GEORGE N. SORENSON, M.A., Professor of Art ... 1946-1976
MARJORIE J. SPENCER, M.A., Associate Professor of Art, Imperial Valley ... 1969-1978
CHARLES C. SPORTSMAN, M.S., Associate Professor of Physical Education ... 1947-1968
CHRISTINE SPRINGSTON, M.A., Professor of Music ... 1930-1966
HARRY C. STEINMETZ, Ph.D., Associate Professor of Psychology ... 1930-1954
HAMILTON L. STONE, B.S., Associate Professor of Mechanical Engineering ... 1947-1971
ALVENA S. STORM, M.A., Professor of Geography ... 1926-1966
MORROW F. STOUGH, Ph.D., Professor of Education ... 1950-1976 (except 1966-1971)
ZOE E. STOUT, Ph.D., Associate Professor of Family Studies and Consumer Sciences ... 1965-1977
MARGUERITE R. STRAND, Ph.D., Counselor, Professor of Secondary Education ... 1955-1977
JEAN D. SWIGGETT, M.F.A., Professor of Art ... 1946-1977
KENNETH M. TAYLOR, Ph.D., Professor of Biology ... 1949-1978
JOHN A. TERHUNE, M.S., Assistant Professor of Physics ... 1947-1965
WILLIAM L. TERRY, Ed.D., Professor of Physical Education ... 1946-1974
JOHN R. THEOBALD, Ph.D., Professor of English ... 1946-1969
ALICE E. THOMAS, Ed.D., Professor of Family Studies and Consumer Sciences ... 1955-1974
BEATRICE A. THOMAS, M.A., Professor of Nursing ... 1954-1977
BLAKEMORE E. THOMAS, Ph.D., Professor of Geology ... 1956-1977
JAMES N. TIDWELL, Ph.D., Professor of Linguistics ... 1947-1976
DOROTHY J. TOLLEFSEN, M.A., Professor of Physical Education ... 1946-1972
FRANCES B. TORBERT, M.A., Professor of Management ... 1937-1969
WOLCOTT C. TREAT, Ph.D., Professor of Psychology ... 1950-1966
RUSSELL L. TRIMMER, Ph.D., Professor of Special Education ... 1955-1976
MARJORIE S. TURNER, Ph.D., Professor of Economics ... 1954-1977
MERLE B. TURNER, Ph.D., Professor of Psychology ... 1950-1974
VIRGINIA W. VOEKS, Ph.D., Professor of Psychology ... 1949-1971
HILDE K. WALKER, M.A., Assistant Professor of German ... 1931-1951
CURTIS R. WALLING, E.E., Professor of Electrical and Electronic Engineering ... 1931-1969
M. AGNES WALSH, M.A., Associate Professor of Elementary Education ... 1955-1976
MARGERY B. WARMER, Ph.D., Professor of Family Studies and Consumer Sciences ... 1956-1976
DONALD R. WATSON, Ed.D., Vice President for Academic Affairs; Professor of Physical Science ... 1939-1968
ELIZABETH V. WATSON, M.S., Associate Professor of Social Work ... 1968-1977
ALFRED E. WHITE, Ed.D., Assistant to Dean of the College; Professor of Education ... 1946-1964
ARNE N. WICK, Ph.D., Professor of Chemistry ... 1958-1974
MARGARET F. WILLERDING, Ph.D., Professor of Mathematics ... 1956-1976
ARTHUR C. WIMER, M.A., Professor of Journalism ... 1950-1971
ERNEST F. WITTE, Ph.D., Dean of the School of Social Work; Professor of Social Work ... 1963-1969
ERNEST M. WOLF, Ph.D., Professor of German ... 1947-1976
GERHARD WOLTER, M.S., Professor of Physics ... 1957-1975
WILLIAM H. WRIGHT, Ph.D., Professor of Accounting ... 1921-1962
JOHN M. YARBOROUGH, Ph.D., Director of Housing; Professor of Education ... 1959-1972

FACULTY (Part-time)

ADMINISTRATION

Adams, John R., Ph.D., College Archivist
Gregory, Paul, Distinguished Producer of Stage, Television, Motion Pictures, Extended Studies
Gulick, Sidney L., Ph.D., Administrative Adviser & Bibliographer of Rare Books

BUSINESS ADMINISTRATION

Armster, Rhoenna P., M.A., Information Systems
Barney, Judith L, M.A., Information Systems
Benowitz, Martin A., J.D., Accounting
Brouilette, Deland A., M.B.A., Management
Bruce, Raymond C., Ph.D., Management
Cairns, Robert, M.B.A., Accounting
Clothier, Donald C., Jr., M.A., Marketing
Crownover, Joe B., M.S., Information Systems
Cutsinger, Shannon L., M.S., Finance
DeSimone, Lawrence E., Ph.D., Finance
Dykman, Dorothy J., Ed.D., Information Systems
English, Richard J., M.S., Marketing
Fielder, John K., B.S., Marketing
Fisher, Horace H., Ph.D., Finance
Fix, Edwin J., M.A., Information Systems
Freeman, Roderick A., Ph.D., Management
Goldstein, Lawrence M., M.B.A., Management
Griffith, Peter W., B.S., Finance
Grimm, Randall D., M.S., Marketing
Hager, Leslie M., B.S., Finance
Haller, Judith L., J.D., Finance
Hamilton, Judith W., Accounting
Hanson, Bruce A., M.S.B.A., Accounting
Hardison, Nancy H., Ph.D., Management
Harrington, Don L., J.D., Finance
Hilke, William C., M.A., Accounting
Hill, Lloyd V., M.S., Finance
Hodges, James W., J.D., Finance
Holzbach, Robert L., Ph.D., Management
Inglis, James W., Jr., M.B.A., Marketing
Kahn, Edward, M.B.A., Accounting
Kendrick, Ronald H., M.B.A., Finance
Kerrigan, Harry D., Ph.D., Accounting
Krepshaw, Leonard J., M.B.A., Accounting
Kriger, Joel M., J.D., Finance
LaBreche, George J., M.S., Finance
Lambert, Barrett L., M.B.A., Accounting
Larsen, Christine N., M.B.A., Finance
Lewis, W. Leroy, Litt.D., "General Faculty"
Mahoney, Patrick, M.B.A., Information Systems
McClintic, Joseph O., Ph.D., Information Systems
McGlathery, Monte N., M.S., Information Systems
Mehlick, Ferdinand D., Jr., B.S., Management
Mullen, Thomas E., M.A., Accounting
Munoz, Jose E., M.B.A., Accounting
Nash, Jeffrey M., Ph.D., Management
Olson, James E., M.B.A., Finance
Pacco, Richard C., M.S., Finance
Padelford, Betty L., Ph.D., Information Systems
Ravenis, Joseph V., Ph.D., Management
Richardson, Ramona J., M.A., Information Systems
Ripley, Robert, M.A., Information Systems
Rodenrys, John J., M.S., Management
Rowe, Lyle K., M.B.A., Accounting
Scholl, Richard W., M.B.A., Management
Seymour, Walter A., M.B.A., Accounting
Shumate, Kenneth C., M.S., Management
Solomon, Norman S., M.S., Accounting
Tempko, Edward S., B.S., Finance
Wagner, Gerald C., Ph.D., Finance
Walker, Craig S., M.B.A., Marketing
Wight, Carroll H., M.A., Information Systems
Wright, Penny L, M.B.A., Management

EDUCATION

Arata, Stephen D., M.S., Counselor Education
Barnier, Barbara E., M.A., Elementary Education
Bayless, Janet C., M.A., Special Education
Berry, Sylvia, M.A., Elementary Education
Bishoff, Eugene M., M.A., Counselor Education
Branca, Melanie C., Ph.D., Elementary Education
Brass, Nancy E., M.A., Elementary Education
Brenes, Lana C., M.S., Counselor Education
Brinks, David J., Ed.D., Counselor Education
Caggiano, Eugene D., M.A., Special Education
Chapin, Susan, M.Ed., Special Education
Cleveland, James O., Ed.D., Special Education
Cohen, Judith L., B.A., Special Education
Contreras, Reynaldo, M.A., Multicultural Education
Cottam, Robert L., M.A., Educational Administration
Cummins, Patti C., M.A., Elementary Education
Ellis, Mary, B.S., Secondary Education
Espinosa, Ruben, Ph.D., Multicultural Education
Evans, Jean, M.A., Secondary Education
Fisher, Sherrick J., Ph.D., Elementary Education
Frank, Roberta S., M.S., Counselor Education
Garcia, Joseph O., M.L.A., Multicultural Education
Gast, Sondra M., M.A., Elementary Education
Grandell, Mary, A.B., Elementary Education and Special Education
Greenwood, Norris, M.A., Special Education
Hammons, Miriam B., M.A., Special Education
Hardison, James M., Ph.D., Secondary Education
Harris, Joanne, A.B., Elementary Education
Hopper, Mary, B.A., Special Education
Horwitz, Deborah, M.A., Secondary Education
Hulbert, Barbara J., B.A., Special Education
Hunsaker, Johanna S., M.S., Secondary Education
Jenkins, Lynn M., M.S., Counselor Education
Johnson, Peggy, B.A., Special Education
Johnston, Donald P., Ed.D., Secondary Education
Jones, Barbara M., M.A., Secondary Education
Kenny, Kathe L., B.A., Special Education
Knight, Kathryn, M.A., Secondary Education
Kuhlman, Natalie A., Ph.D., Multicultural Education
Lehew, Charmon M., M.A., Educational Administration
Lehr, Donna, B.S., Special Education
Lewis, Shirley J., M.S., Counselor Education
Lipman, Samuel M., M.S., Elementary Education
Lonky, Marilyn P., M.A., Special Education
Lopez, Humberto, M.A., Secondary Education
Lopez, Meliton, Ph.D., Multicultural Education
McGraw, Michael J., Ed.D., Counselor Education
McNary, Nancy W., B.A., Elementary Education
Michaelson, Janet A., A.B., Special Education
Milliken, Jeanie S., Ph.D., Elementary Education
Murphy, Dorothy G., M.A., Secondary Education
Naas, Margaret A., M.A., Secondary Education
Nagel, Mary A., Ph.D., Elementary Education
Nasman, Daniel, M.Ed., Special Education

O'Higgins, Jan, M.S., Counselor Education
Park, James W., Ph.D., Secondary Education
Pumphrey, Dan L., A.B., Secondary Education
Rezek, Jane C., M.A., Elementary Education
Robershaw, Phyllis L., B.A., Elementary Education
Sanders, Mary E., Ed.D., Special Education
Schneider, Deborah, M.S., Counselor Education
Schulze, Carl O., A.B., Educational Technology & Librarianship
Sharpe, Karen L., M.L.S., Educational Technology & Librarianship
Slusher, Clarence E., M.A., Educational Technology & Librarianship
Stuve, Gilbert E., Ph.D., Elementary Education
Sullivan, Michael B., Ph.D., Counselor Education
Teague, Kathleen, M.A., Special Education
Young, Lauren S., M.S., Counselor Education

ENGINEERING

Bancroft, Glenn W., M.S., Aerospace Engineering
Bhat, Surendra K., Ph.D., Aerospace Engineering
Burton, Thomas E., Sc.D., Aerospace Engineering
Calkins, Dale E., D.Engr., Aerospace Engineering
Cox, Malvin M., B.S.E.E., Electrical Engineering
Dibelka, Albert W., M.S.E.E., Electrical Engineering
Eisenberg, Barnard L., M.S., Aerospace Engineering
Goldhammer, Joseph C., M.S.C.E., Civil Engineering
Grace, Odis D., Ph.D., Electrical Engineering
Greenlee, Terrill L., Ph.D., Electrical Engineering
Gunn, Clarence E., M.S.A.E., Aerospace Engineering
Hill, Joseph C., M.S.C.E., Civil Engineering
Hirsch, Joseph, Ph.D., Aerospace Engineering
Kihm, Robert T., Ph.D., Electrical Engineering
Kosmos, George, M.S.E., Electrical Engineering
Kuchta, Bernard J., M.S., Aerospace Engineering
Lee, Tita, Ph.D., Aerospace Engineering
Martinez, Ralph, Ph.D., Electrical Engineering
Pazmany, Ladislao, No degree, Aerospace Engineering
Penzes, Leslie E., Ph.D., Aerospace Engineering
Rogoff, Harvey I., M.S., Civil Engineering
Sczepaniak, Alan L., M.S.E.E., Electrical Engineering
Sevier, William J., M.S.M.E., Mechanical Engineering
Shi, San-Yen, Ph.D., Electrical Engineering
Stedman, Scott A., B.S., Civil Engineering
Tiernan, James C., M.S., Electrical Engineering
Timm, John E., Ph.D., Aerospace Engineering
Tseo, Gus G., Ph.D., Civil Engineering
Tzung, Fu-Kong, Ph.D., Aerospace Engineering
Valenzuela, Frank M., Ph.D., Mechanical Engineering
Weisinger, Martin D., B.S.M.E., Mechanical Engineering
Whitton, Francis H., M.S., Mechanical Engineering
Winton, Guy W., Jr., B.S., Civil Engineering

SOCIAL WORK

Peer, Robert W., Ph.D.
Ruffner, John K., M.S.W.

ARTS AND LETTERS

Aboud, Judith A., M.A., Political Science
Almstedt, Ruth F., M.A., Anthropology
Anderson, Joan B., Ph.D., Economics
Bearden, Margaret F., M.A., History
Benzie, Albert, Ph.D., French & Italian Languages & Literatures
Brudner-White, Lilyan A., Ph.D., Linguistics
Burbick, Joan S., Ph.D., Literature
Burckett-Evans, Jenifer, M.A., Spanish & Portuguese Languages & Literatures
Butler, Raymond J., M.A., Economics
Canales, Judith G., Ph.D., Spanish & Portuguese Languages & Literatures
Cardenas, Ezequiel, Ph.D., Spanish & Portuguese Languages & Literatures
Cook, G. Roy, B.A., American Indian Studies
Coppock, Joseph D., Ph.D., Economics
Corona, Laurel W., M.A., Literature
Dijkstra, Sandra K., M.A., Women's Studies
Dixon, Patricia A., M.A., American Indian Studies
Donaldson, Fred O., Ph.D., Geography
Duarte, Gisella A., M.A., Spanish & Portuguese Languages & Literatures
Eaton, Gerald G., Ph.D., Sociology
Emery, Laura C., Ph.D., Literature
Fiorentine, Robert F., M.A., Sociology
Fisher, Sue C., Ph.D., Women's Studies
Flagg, Virginia G., Ph.D., Economics
Forsky, Valentina F., M.A., Germanic & Slavic Languages & Literatures
Gaughen, John P., M.A., Political Science
Gittes, Katharine S., M.A., Literature
Glenn, Russell, M.A., Economics
Gray, Gary, M.A., Political Science
Greenberg, William J., M.A., Linguistics
Gregg, John A., M.A., Literature
Gregory, Sinda J., M.A., Literature
Grider, Robert L., M.A., American Indian Studies
Guthrie, Robert V., Ph.D., Afro-American Studies
Gutierrez, Graciela O., M.A., Spanish & Portuguese Languages & Literatures
Harper, James F., Ph.D., Literature
Howard, Jeffrey A., M.A., Anthropology
Huntsberry, Randy, Ph.D., Religious Studies
Hyman, Sally L., Ph.D., Literature
Isenberg, Herbert M., M.A., Sociology
Johnson, Willard, Ph.D., Religious Studies
Karelitz, Carolyn, M.A., Linguistics
Kasper, Janice C., B.A., Anthropology
Kehrenberg, Graziella S., Ph.D., French & Italian Languages & Literatures
Kenty, Betty J., M.A., Literature
King, Phyllis G., M.A., Linguistics
Koby, Ronald H., B.A., Economics
Kowit, Steve M., M.A., Literature
Labovitz, Eugene M., Ph.D., Sociology
Lacy, Richard M., M.A., Linguistics
Laperrousaz, Helene L., Diplome d'Et. Sup., French & Italian Languages & Literatures
Lee, Loren, M.S., Economics
Mackey, Linda C., M.A., Women's Studies
Mbatia, Oliver L. E., Ph.D., Afro-American Studies
McCarty, Nancy J., M.A., Spanish & Portuguese Languages & Literatures
McFarlin, Annjennette S., Ph.D., Afro-American Studies
McKanna, Clare V., M.A., History
McLeod, Susan H., Ph.D., Literature
Mendis, Janine, Ph.D., Spanish & Portuguese Languages & Literatures
Mood, John J. L., Ph.D., Literature
Morgan, Mary V., B.A., Literature
Mosher, John R., Ph.D., History
Murphy, Shirley T., A.A., American Indian Studies
Naff, Roger T., M.A., Sociology
Naveh, Gila O., M.A., Classical & Oriental Languages & Literatures
Perkins, Carol O., M.A., Women's Studies
Petruska, Joan C., M.S., Political Science
Pincetl, Giselle, B.A., French & Italian Languages & Literatures
Pugh, Henry L., M.A., Philosophy
Quinn, Ronald J., M.A., History
Raven, Arlene, Ph.D., Women's Studies
Ringrose, Kathryn, Ph.D., History

Rockland, Steven G., M.S., Economics
Rodriguez, Mihoko F., B.A., Classical & Oriental Languages & Literatures
Rosen, Alban F., M.A., Sociology
Russo, Priscilla A., M.A., American Indian Studies
Sandoval, Anna D., High School Diploma, American Indian Studies
Shellhammer, Kenneth L., Ph.D., Economics
Simmons, James C., Ph.D., Literature
Sisson, Russell D., M.A., Anthropology
Somerville, Rose M., Ed.D., Sociology
Spaulding, Robert F., M.S., Economics
Spirito, Donald P., M.A., Economics
Stroll, Mary E., Ph.D., History
Switzer, James W., M.A., Geography
Waldrop, Billy M., M.A., Geography
Walsh, Billie K., M.A., History
White, Christopher W., M.A., Anthropology
Widmer, Eleanor R., Ph.D., Literature
Williams, Irene, Ph.D., Literature
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PROFESSIONAL STUDIES

Allen, Donald A., M.P.A., Recreation
Anderson, Hollis L., B.A., Health Science & Safety
Austerlitz, Francine G., M.Ed., Communicative Disorders
Balestrieri, Donald A., High School Diploma, Music
Benson, Rose-Ann, B.A., Athletics
Beutel, Allen E., Ph.D., Public Administration & Urban Studies
Bishop, Bruce E., M.A., Speech Communication
Black, Thomas L., Ph.D., Health Science & Safety and Industrial Studies
Blankenburg, Mary L., M.A., Physical Education
Bonatus, Kenneth, M.A., Health Science & Safety
Bouterse, Curtis C., B.A., Music
Boyer, John L., M.D., Physical Education
Bradstreet, David, M.S., Recreation
Bruce, Beverly E., M.P.H., Health Science & Safety
Bussey, Paul D., M.S., Public Administration & Urban Studies
Caesar, Robert, M.A., Recreation
Camarillo, Mateo R., M.S.W., Mexican-American Studies
Camiel, Shimon, M.A., Health Science & Safety
Casares, Arturo V., M.A., Mexican-American Studies
Castro, Irma, B.A., Mexican-American Studies
Cazares, Roy B., J.D., Mexican-American Studies
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Cleland, Barbara D., M.M.E., Music
Cohn, Karla B., M.S., Public Administration & Urban Studies
Collins, Richard L., M.A., Health Science & Safety
Colwell, Carolyn B., M.A., Nursing
Coombs, Stanley H., M.S., Public Administration & Urban Studies
Crary, Dolly M., M.A., Health Science and Safety
Cruz, Rodolfo G., M.S., Mexican-American Studies
Cummings, C. Barton, M.M., Music
Cummings, Charlene A., M.S., Family Studies & Consumer Sciences
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Eubanks, Daniel J., M.A., Industrial Studies
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Feldman, David A., M.S., Journalism
Figler, Jeffrey D., M.B.A., Public Administration & Urban Studies
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Foster, Carl G., B.S.E.E., Industrial Studies
Frankum, Ronald B., J.D., Public Administration & Urban Studies
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Gregory, Paul, Distinguished Producer of Stage, Television & Motion Pictures, Drama
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Gutierrez, Graciela O., M.A., Mexican-American Studies
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Harvey, Anne-Charlotte H., M.A., Drama
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Hennesy, Sylvia B., M.S., Journalism
Hill, Gloria, M.S., Music
Hill, Jenne L., B.A., Family Studies and Consumer Sciences
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Martinez, Alexander D., Ph.D., Mexican-American Studies
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Vanwinkle-Swift, Karen P., Ph.D., Biology

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Anderson, Shirley R., A.B.
Armenta, Alex A., M.S.
Barber, Jonathan D., M.S.
Bernardi, Clifford W., M.A.
Bischke, Russell, M.S.Ed.
Blek, George, Ed.D.
Bragg, Edith, M.S.
Childers, Morlin, High School Diploma
Cox, Neta L., A.B.
Croutch, Ben, M.S.
Dolenar, David L., M.P.A.
Ferguson, Douglas, M.A.
Gonzalez, Refugio A., M.S.B.A.
Hinds, Alex, M.A.
Huerta, Elias D., M.A.
Jones, Glenn A., M.S.W.
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Stemple, Betty J., M.S.
Von Werlhof, Jay C., M.A.

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Potts, Stephen W., A.B.
Shepard, June S., Ph.D.
Sweedler, Carol O., Ph.D.
Sykes, Shirley D., M.A.

LIBRARY

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Dyer, Judith C., M.L.S.
Kennedy, James W., M.L.S.

ADJUNCT FACULTY

Assaf, Nancy C., M.A., Education
Barilotti, Donald C., M.A., Botany
Bearman, David, M.D., Health Science and Safety
Calabough, Sandi, M.P.A., Recreation
Campbell, Lois T., M.A., Education
Cargille, Douglas A., M.L.S. and M.A., Education
Chiou, Chwei L., Ph.D., Secondary Education
Cornejo, Ricardo J., Ph.D., Secondary Education
Dudley, Guilford, Ph.D., Religious Studies
Evans, William E., Ph.D., Biology
Fonte, Verona H., Ph.D., Counselor Education
Fritts, Thomas H., Ph.D., Zoology
Gales, Robert S., M.A., Communicative Disorders
Hillman, Marguerite, B.A., Study Skills Center
Hood, John M., Jr., Ph.D., Natural Science
Hudson, Adeline F., M.A., American Indian Studies
Jehl, Joseph R., Jr., Ph.D., Biology
Jokela, Alice T., Ph.D., Microbiology
Kaufman, William J., Ph.D., Physics
Kostrubala, Thaddeus, M.D., Elementary Education
Levine, Beryl, M.S.L.S., Education
Lin, Shui-Wai, Ph.D., Chemistry
Martin, Gregory, B.S., Physics
Massicotte, Jean-Paul A., M.A., Physical Education
McCornack, Robert, Ph.D., Mathematical Sciences
McInnis, Elizabeth T., M.A., Psychology
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Moran, Reid V., Ph.D., Botany
Morioka, Wilfred T., A.B., Communicative Disorders
Murray, Richard C., Ph.D., Chemistry
Neyndorff, Hans, L.L.B., Education
Perkins, Frances P., M.A.T., Education
Pritchard, David, M.S.W., Social Work
Richman, Paul T., Ed.D., Secondary Education
Ross, Arnold, B.S., Zoology
Rush, Shirley A., Ph.D., Literature
Schiff, Maurice, M.D., Communicative Disorders
Seckinger, Linda K., B.A., Art
Snowden, Michael S., M.S., Astronomy
Styles, Marvalene H., Ph.D., Counselor Education
Till, Frank L., M.A., Education
Urbano, Michael J., High School Diploma, Athletics
Van Olst, Jon C., M.S., Biology
Weiss, Herbert V., Ph.D., Chemistry
Williams, John R., Ph.D., Educational Administration
Zirino, Albert R., Ph.D., Chemistry

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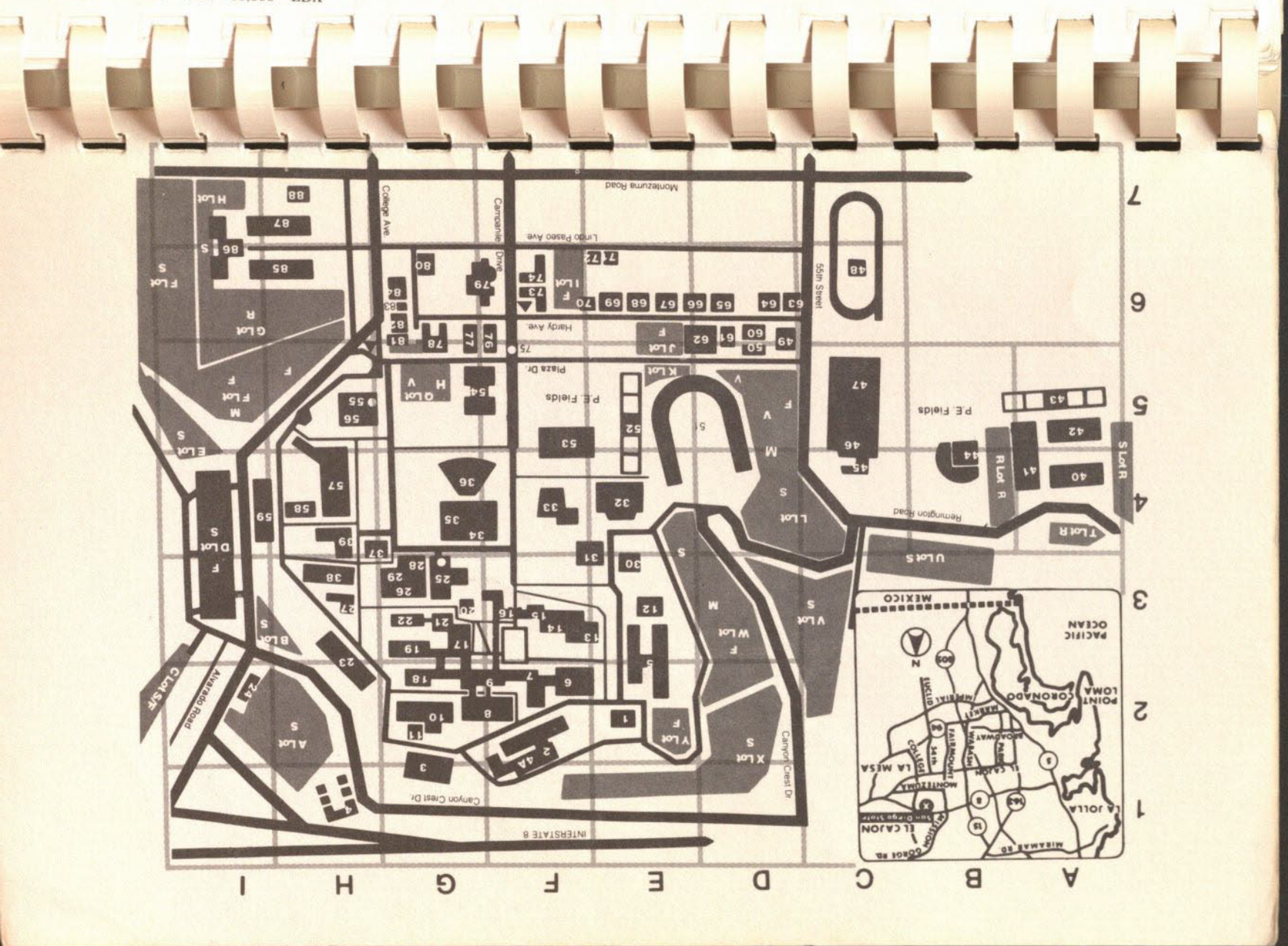

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