# 1974-75 SAN DIEGO STATE UNIVERSITY general catalog

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STATE UNIVERSITY AND COLLEGES

# **General Catalog**

and

**Announcement of Courses** 

Volume 61

1974

San Diego State University San Diego, California

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# **Annual Calendar**

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### 1974-1975

Summer Sessions, 1974 June 3-21 June 24-August 2 August 5-23 Fall Semester, 1974 August 1-31

August 14, 16, 20, 23, 26, 27

August 14-31 August 30 September 2 September 3 September 16, 17, 25, 26, October 16 and 17, November 6 and 7

September 17 September 17

September 20

September 20, 23, 24 and November 16

September 30 October 28 November 1-30

November 28-30 December 1

December 13 December 14 December 22 December 31 Spring Semester, 1975 August 1-31

January 9, 15, 17, 20 and 21

**January** 13 January 20 January 27, 28, February 7, 11, April 23

January 30 and 31, February 5 and 6, March 12 and 13, April 16 and 17

Term I summer session (3 weeks). Term II summer session (6 weeks). Term III summer session (3 weeks).

Applications for admission or readmission to San Diego State University for the Spring semester 1975. Accepted after this only until enrollment quotas are met.

Academic Calendar

Chemistry placement examinations for students planning to enter Chemistry 1A or 10; Mathematics placement examinations for students planning to enroll in Math 3, 4, 19, 20, 21, 40, 50; or Economics

Testing, advising and registration. Opening date of the academic year. Holiday-Labor Day. First day of classes.

Reading Comprehension test for transfer students entering elementary or kindergarten-primary education.

Last day to apply for refunds.

File application for admission to elementary teacher education assembly.

Last day to file application for the bachelor's degree for mid-year graduation.

English Proficiency Examination for students entering secondary education.

Last day to withdraw from class or change program. Holiday-Veteran's Day.

Applications for admission or readmission to San Diego State University for the Fall semester 1975. Accepted after this date only until enrollment quotas are met.

Thanksgiving recess.

Last day to file application for the bachelor's degree for June or summer graduation.

Last day of classes before final examinations. First day of final examinations.

Winter recess begins.

Grades due. Last day of fall semester.

Applications for admission or readmission to San Diego State University for the spring semester 1975. Accepted after this date only until enrollment quotas are met.

Testing, advising and registration.

Chemistry placement examinations for students planning to enter Chemistry 1A or 10; Mathematics placement examinations for students planning to enroll in Math 3, 4, 19, 20, 21, 40, 50; or Economics

First day, second semester. First day of classes.

English Proficiency examination for students entering secondary education.

Reading Comprehension test for transfer students entering elementary or kindergarten-primary education.

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### 6 / Academic Calendar

February 4 February 13 February 17 February 18 March 21 March 24-30 March 31 May 9 May 10 May 18 May 26 May 30 Summer Session, 1975 June 2-20 June 23-August 1 July 4 August 4-22

February 3

Last day to apply for refunds. File application for admission to elementary teacher education assembly. Last day to withdraw from class or change program. Holiday–Lincoln's Birthday. Holiday–Washington's Birthday. Last day of classes before spring recess. Spring Recess. Classes resume. Last day of classes before final examinations. First day of final examinations. Commencement. Holiday–Memorial Day. Grades due. Last day of spring semester. Term I summer session (3 weeks).

Term II summer session (6 weeks). Holiday–Independence Day. Term III summer session (3 weeks).



## Schedule of Fees

#### Fees are subject to change by The Trustees of the California

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#### State University and Colleges

FEES MUST BE PAID AT TIME OF REGISTRATION. IF YOU DO NOT ATTEND THE CLASSES YOU HAVE RESERVED, AND HAVE NOT PAID YOUR REGISTRATION FEES, YOU WILL BE BILLED \$15.00 AND THE CLASSES CANCELED. CHECKS AC-CEPTED FOR EXACT AMOUNT OF FEES. (IF YOUR CHECK IS RETURNED BY THE BANK FOR ANY REASON, YOUR REGISTRATION WILL BE CANCELED.)

Fees for Materials and Service-All Students: on basis of units carried. (Auditors pay same fees as students carrying courses for credit.)

0	units-3.9 units	 \$72.50
4	units-7.9 units	 78.50
8	units-11.9 units	 84.50
10	or more units	03 50

The above fees also include a student activity fee of \$9.50, a student union fee of \$9.00 and a nonrefundable facilities fee of \$3.00.

#### Tuition for Nonresident Student (Foreign and Domestic)

( 1	In addition to materials and service and activity fees.) Nonresident student enrolled for 15 units or more	\$650.00
t (	hereof—per unit For fee-paying purposes, zero unit courses are counted as one unit.)	\$43.00
ł	Health Insurance (mandatory for foreign students)approximately	\$33.00
king	Fees	
Ň	Nonreserved parking space, per semester	\$15.00
I	ess than four-wheeled, self-propelled vehicle	\$3.75
cell	aneous Fees (Fees payable when service is rendered.)	
A I	Application for admission or readmission (nonrefundable)	\$20.00
	this fee will be assessed.)	5.00
H	Failure to meet administratively required appointment or time limit Photo-Identification Card (One-time cost to new students	2.00
	at time of registration)	2.00
1	Lost Identification Cards/Stickers	2 00
	Registration sticker only	2.00
	Card and sticker	4.00
1	Franscript of record	1.00
F	R.O.T.C. deposit (unexpended portion is refundable)	10.00
9	Check returned for any cause	5.00
1	Loss or damage of equipment and horary books	cost

#### **REGULAR SESSION FEE REFUNDS**

#### Materials and Service Fees

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To be eligible for a refund of materials and service fees, a student must completely withdraw from the university. There will be no refund for a reduction of unit load. To be eligible for a refund of materials and service 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 day the academic term begins. All but \$15.00 will be refunded. For additional information contact the Cashier's Office or telephone 286-5253.

#### Nonresident and Foreign Student Tuition

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

#### 8 / Schedule of Fees

	Time Limit	Amount of Refund
	Time Limit	100 percent of fee
(1)	Before or during the first week of the semester	00 percent of fee
(2)	During the second week of the semester	90 percent of fee
125	During the third week of the semester	70 percent of fee
52	During the finite week of the semaster	50 percent of fee
(4)	During the fourth week of the semester	20 percent of fee
(5)	During the fifth week of the semester	So percent of fee
16	During the sixth week of the semester	20 percent of fee
(0)	During the shall week of the sense of the	

#### **Parking Fee**

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	\$30.00
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	00 200
(per unit	\$20.00

#### **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. No fees of any kind shall be required of or collected from those individuals who qualify

for such exemption under the provisions of the Alan Pattee Scholarship Act.

# 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 dorinitory or ilbrary rees, 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 transcripter. If a student fools that he or she does not own other services, such as grades and transcripts. If a student feels that he or she does not owe all or part of a particular fee or charge, the student should contact the campus business office. The business office, or another office on campus to which the student will be referred by the business office, will review the pertinent information, including information the student may wish to present, and will advise the student of its conclusions with respect to the debt.

# Organization and Administration

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

# The California State University and Colleges

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### The California State University and Colleges

The individual California State Colleges were brought together as a system by the Donahoe Higher Education Act of 1960. In 1972 the system became The California State University and Colleges and fourteen of the nineteen campuses received the title *University*.

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

Responsibility for The California State University and Colleges is vested in the Board of Trustees, whose members are appointed by the Governor. The Trustees appoint the Chancellor, who is the chief executive officer of the system, and the Presidents, who are the chief executive officers on the respective campuses. The Trustees, the Chancellor and the Presidents develop systemwide policy, with actual

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 is offered jointly with the University of California.

Presently, under the system's "New Approach 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 1973 totaled nearly 290,000 students, who were taught by a faculty of 16,000. Last year the system awarded over 55 percent of the bachelor's degrees and 35 percent of the master's degrees granted in California. Over 400,000 persons have been graduated from the nineteen campuses since 1960.



Photographer: John Gross

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

The nineteen campuses of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. For the 1973/74 year, the total cost of operation is \$553.8 million, which provides continuing support for 233,290 full-time equivalent (FTE\*) students. This results in an average cost per FTE student of \$2,374 per year. Of this amount, the average student pays \$224. Included in this average student payment is the amount paid by nonresident students. The remaining \$2,150 in costs is funded by state and federal taxes.

Averages do not fit all students alike or even any specific student. To arrive at an average figure that is meaningful, the costs outlined above exclude "user fees" for living expenses, 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:

#### 1973/74 Total Costs of Campus Operation (Including Building and Land Amortization)

Enrollment: 233,290 FTE

Source	Amount	Average Cost Per Student (FTE)*	Percentage
State Appropriation (Support)	\$441,860,573	\$1,894	79.8
State Funding (Capital Outlay)**	29,161,250	125	5.3
Student Charges	52,349,450	224***	9.4
Federal (Financial Aids)	30,476,849	131	5.5
Total	\$553,848,122	\$2,374	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 more than 14,000 acres of land and the wide range of facilities and equipment on the 19 campuses are currently valued at approximately \$1.2 billion. Amortized over a 40-year period, they are valued at \$125 per FTE student.

\*\*\* The average costs paid by a student include the materials and service 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 \$224 depending on whether they are part-time, full-time, resident or nonresident students.

### Trustees of The California State University and Colleges

#### **Ex Officio Trustees**

Hon. Ronald Reagan	State Capitol
Governor of California	Sacramento 95814
Hon. Ed Reinecke	State Capitol
Lieutenant Governor of California	Sacramento 95814
Hon. Bob Moretti	State Capitol
Speaker of the Assembly	Sacramento 95814
Hon. Wilson C. Riles	721 Capitol Mall
State Superintendent of Public Instruction	Sacramento 95814
Dr. Glenn S. Dumke	
Chancellor of The California State	Los Angeles 90036
University and Colleges	Los ingeles cours

#### **Appointed Trustees**

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

Charles Luckman (1982) 9200 Sunset Blvd., Los Angeles 90069 Daniel H. Ridder (1975) 604 Pine Ave., Long Beach 90801 Karl L. Wente (1976) 5565 Tesla Road, Livermore 94550 W. O. Weissich (1977) 1299 4th St., San Rafael 94901 Robert A. Hornby (1978) 810 South Flower St., Los Angeles 90017 Wendell W. Witter (1979) 45 Montgomery St., San Francisco 94106 Mrs. Winifred H. Lancaster (1977) P.O. Drawer JJ, Santa Barbara 93102 Gene M. Benedetti (1978) 8990 Poplar Ave., Cotati 94952 Robert F. Beaver (1976) 254 East 27th St., Los Angeles 90011 Roy T. Brophy (1980) 2160 Royale Rd., Suite 20, Sacramento 95815 Mrs. C. Stewart Ritchie (1980) 1064 Creek Dr., Menlo Park 94025 Frank P. Adams (1981) 235 Montgomery St., San Francisco 94104 Richard A. Garcia (1979) P.O. Box 2073, Glendale 91209 Dean S. Lesher (1981) P.O. Box 5166, Walnut Creek 94596 Dr. Claudia H. Hampton (1982) 450 North Grand, Rm. G-53, Los Angeles 90012 \*Mrs. Yvonne W. Larsen (1975) 1405 Savoy Circle, San Diego 92107

**Officers of the Trustees** 

Governor Ronald Reagan President William O. Weissich Chairman Robert A. Hornby Vice Chairman Chancellor Glenn S. Dumke Secretary-Treasurer

\* Subject to confirmation by the State Senate.

# Office of the Chancellor The California State University and Colleges

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5670 Wilshire Boulevard Los Angeles, California 90036 (213) 938-2981

Clann S Dumke	Chancellor
H E Brakebill	Executive Vice Chancellor
Norman L. Epstein	Vice Chancellor and General Counsel
D. Dale Hanner	Vice Chancellor, Business Affairs
Harry Harmon	Vice Chancellor, Physical Planning and Development
C. Mansel Keene	Vice Chancellor, Faculty and Staff Affairs
Alex C. Sherriffs	Vice Chancellor, Academic Analis



### The California State University and Colleges

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

California State University, Chico 1st & Normal Streets Chico, California 95926 Stanford Cazier, President (916) 345-5011

California State College, Dominguez Hills 1000 E. Victoria Street Dominguez Hills, California 90747 Leo F. Cain, President (213) 532-4300

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

California State University, Fullerton 800 N. State College Boulevard Fullerton, California 92634 L. Donald Shields, President (714) 870-2011

California State University, Hayward 25800 Hillary Street Hayward, California 94542 Ellis E. McCune, President (415) 884-3000

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

California State University, Long Beach 6101 East Seventh Street Long Beach, California 90840 Stephen Horn, President (213) 498-4111

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

California State University, Northridge 18111 Nordhoff Street Northridge, California 91324 James W. Cleary, President (213) 885-1200 California State Polytechnic University, Pomona 3801 West Temple Avenue Pomona, California 91768 Robert C. Kramer, President (714) 598-4592

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

California State College, San Bernardino 5500 State College Parkway San Bernardino, California 92407 John M. Pfau, President (714) 887-6311

San Diego State University 5402 College Avenue San Diego, California 92115 9 2 1 8 Brage Golding, 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 Paul F. Romberg, President (415) 469-2141

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

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

California State College, Sonoma 1801 East Cotati Avenue Rohnert Park, California 94928 Thomas H. McGrath, President (805) 795-2880

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	Coordinator, Extended Services	Alan C. Smith

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# **General Information**

### San Diego State University

San Diego State University traces its antecedents to a two-year Normal School which was established on March 13, 1897 for the training of elementary school teachers. The seven faculty and ninety-one students of the School's first class met initially on November 1, 1898 in temporary quarters downtown while the first unit of the campus was under construction at Park Boulevard where El Caion Boulevard begins.

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.

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

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

In recent years a number of new buildings have been added to accommodate the 30,000 students who attend, notably: Aztec Center, the first student union in the system; Dramatic Arts, with the finest theater in the county; Music, incorporating a Recital Hall; and the striking Malcolm A. Love Library, which has more floor space than all seven original buildings combined. A new Health Services building will open this year, and new Art and Humanities classroom buildings are high on the system's construction priority list.

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

A measure both of the distance San Diego State has come and of the stature it has achieved may be taken from the fact that the University has been 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. The first students to receive this distinction were initiated in the spring of 1974.

### Malcolm A. Love Library

The university library is located in the large new central Malcolm A. Love Library building opened to the students and faculty scholars in 1971. It provides ideal facilities for study and research. At the heart of the expanding campus, it is readily accessible from all directions. The five-floor building seats 3,000 readers and has an ultimate volume capacity of a million. Partially carpeted and furnished with many single-place study carrels, the Love Library invites study and reflection.

The library's resources and services are noteworthy. Major services provided are: a central reference service, a library instructional service, a specialized lower division service, a special collections room for rare books and archives, and areas for the sciences and engineering library, documents, educational resources, current periodicals, and microforms and listening center.

Its collections are substantial. It has 720,000 volumes, including books, bound periodicals, and government documents. Additional resources include: 830,000 microfiches and microopaque cards, 26,000 reels of microfilm, 12,000 college catalogs, 61,000 curriculum material items, 24,000 scientific reports, 275,000 archival papers, and many other media. The library receives 10,000 periodical and other serial titles excluding government docu-

The library receives 10,000 periodical and other serial titles excluding government documents. It is a depository for United States, California, Illinois, New York and Texas government publications. It receives all United Nations and Organization of American States publications, and those of other national and international bodies. Highly trained reference librarians assist students and faculty in their reading, study and research. To aid the student in developing his powers in critical, independent thought through wide acquaintance with books, the library has an open shelf arrangement which gives direct access to nearly all books. Inexpensive copying machines are available throughout the building.

Several research centers on campus have collections not included in the library's holdings. Among them are: Public Administration and Urban Studies Laboratory, 50,000 items; Economics Research Center, 32,000 items; Geography and Geology Departments, 90,000 maps; International Relations Research Center, 14,000 items.

### Accreditation

San Diego State University is a member of the following educational associations: American Association of Colleges for Teacher Education American Association of Collegiate Schools of Business American Association of Schools and Departments of Journalism American Home Economics Association Association for University Business and Economic Research Council of Graduate Schools in the United States Council on Social Work Education Engineers' Council for Professional Development National Association of Schools of Music National League for Nursing Western Association of Graduate Schools Western Association of Schools and Colleges

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

The university has four professional schools: business administration, education, engineering and social work. See the descriptions of their programs in the section, Professional Curricula.

In addition, high quality preparation for many other professions is provided. It is suggested that the student refer to the various courses of study listed in the catalog. The bachelor's degree is offered in 64 areas, the master's degree in 51 areas, and the Ph.D. in three areas. Some of its recent noteworthy innovative programs are in Afro-American studies, Asian studies, ecology, Jewish studies, Mexican-American studies, religious studies, and women's studies.

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## **Degrees and Certificates**

San Diego State University offers the following degrees and certificates:

Bachelor of Arts Bachelor of Science Bachelor of Vocational Education Bachelor of Music Doctor of Philosophy in Chemistry (with University of California, San Diego) Doctor of Philosophy in Ecology (with University of California, Riverside) Doctor of Philosophy in Genetics (with University of California, Berkeley) Master of Arts Master of Science Master of Business Administration Master of City Planning Master of Public Administration Master of Social Work

A nondegree program leading to the Certificate in Public Administration is offered by Public Administration and Urban Studies.

### **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 specialization available in four fields; and the School of Education offers curricula in teacher education leading to graduate credentials at all levels of public school teaching.

(4) Preprofessional and nondegree curricula: Programs are offered in predentistry, prelegal, and premedical, leading to transfer to professional schools. A nondegree program is offered in public service, leading to 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 joint-doctoral programs in chemistry, ecology and genetics.

## **Imperial Valley Campus**

### Faculty

Professors: Rodney (Dean), Baldwin (Associate Dean), Smith (Coordinator of Extended Services)

Associate Professors: Ayala, Franklin, Harmon, Polich, J., Wilson

Assistant Professors: Hill, King, B., Polich, K. (Librarian), Rice, Spencer

Lecturers: Atwood, Crutcher, Ferguson, Hammond, Kane, E., Kane, T., King, I., Lopez, Marañon, Nagel, Ortega, Pattie, Von Werlhof, Wong

### **Location and Function**

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

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

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

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

The climate of Imperial Valley is dry and mild most of the college school year, with dune buggying, water skiing in the nearby Salton Sea, Gulf of California, Colorado River and golfing and hiking the year around.

The full-time faculty and many of the part-time faculty are regular members of the San Diego State University instructional staff. Serving at the Imperial Valley campus are full-time resident faculty members in the areas of anthropology, art, criminal justice administration, drama, economics, education, English, geography, history, mathematics, Mexican-American studies, music, philosophy, political science, psychology, sociology, and Spanish. More than eighty percent of the full-time faculty possess the doctoral degree. Part-time faculty, selected from outstanding educators and practicing professionals of Imperial Valley, augment the instructional programs of the Imperial Valley Campus.

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

#### Program

The program at the Imperial Valley campus is restricted to upper division and graduate students. The campus offers eleven majors leading to the bachelor's degree and also a program designed to complete the California teaching credentials. The programs are similar to those described in this catalog; however, not all majors and minors are available at Imperial Valley Campus. The Imperial Valley Campus is structured to serve the needs of the following: (1) commu-

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

For those transfer students needing certain lower division college work in connection with their work at this campus, there are available in the area the Imperial Valley College, College of the Desert, Mt. San Jacinto College, Palo Verde College, and Arizona Western College.

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# Special Programs and Services

### Summer Sessions and Extension Courses

San Diego State University conducts three summer sessions which offer credit applicable to graduation and residence requirements.

During the three-week Term 1, three semester units of credit may be earned; during the six-week Term II, up to seven units of academic credit may be earned; during the three-week Term III, three units of credit may be earned. The tuition for the summer sessions is based on the cost per semester unit. Write to the Dean of Summer Sessions for information concerning course offerings, special workshops, and requirements for admission. The Summer Sessions Bulletin is available in mid-March and is mailed free of charge upon request.

In order more adequately to serve the educational needs of the community, San Diego State University cooperates with off-campus organizations and groups in arranging extension classes in response to expressed needs when the enrollment is sufficiently large to finance the instruction. Offerings are made each semester in a number of areas including education, business administration, public administration and the arts and sciences. Classes may be organized at various locations within San Diego and Imperial Counties. A minimum of 16 to 20 students is usually required in order to maintain a class. The usual class carries three units of credit and meets once a week, either in the late afternoon or evening. Some one-unit weekend workshops in various areas are also offered throughout the semester. These courses are listed in a special *Bulletin of Extension Courses* published each semester. For limitations on extension credit, see the section of this catalog on Credit for Extension

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

### **Honors Program**

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

### **International Programs**

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

Cooperating universities abroad include the University of Provence, France; the University of Heidelberg, Germany; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; the University of Granada and the University of Madrid, Spain; the University of Uppsala, Sweden; Tel Aviv University and the Hebrew University of Jerusalem, Israel; and Waseda University, Japan. In the United Kingdom, cooperating universities, which may vary from year to year, include Dundee, Leicester, London, Oxford, Liverpool, Lampeter and Sheffield. In addition, California State University and Colleges students may attend a special program in Taiwan, Republic of China, or an architectural program in Copenhagen, Denmark.

Eligibility is limited to students who will have upper division or graduate standing during their year of participation, who have a 2.5 overall grade point average, who show ability to adapt to a new environment, and who, in the cases of France, Germany, Mexico and Spain, are proficient in the language of instruction at the foreign university. Selection is made by a faculty committee on the student's home campus and by a statewide faculty committee.

The International Programs is supported by state funds to the extent that such funds would have been expended had the student concerned continued to study in California. Students assume costs for predeparture orientation, insurance, transportation, housing and meals. Home campus registration fees, tuition on the home campus for out-of-state students (if the student is not a California resident), and personal incidental expenses or vacation travel costs 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 any financial aid available at their home campuses, except work-study.

Application for the 1975-76 academic year must be submitted before February 14, 1975 (except for United Kingdom applicants who must submit applications by January 7, 1975). Applicants are notified of acceptance by April 1, 1975. Detailed information may be obtained from the Office of Continuing Education or by writing to The California State University and Colleges International Programs, 5670 Wilshire Boulevard, Los Angeles, California 90036.

### **External Degree Programs**

The California State University and Colleges System has established procedures for developing and offering specific programs leading to academic degree through the Extension Division. These programs are typically made available to qualified students in the community without the requirement of matriculating in the University. At present two such degree programs are offered through San Diego State. One is a Bachelor of Science degree in Criminal Justice Administration, offered through the School of Public Administration and Urban Studies. For further information, write Ms. June Kaiser, Department of Criminal Justice. The second one is "Integrated Master of Arts and Superintendent's Administrator Credential Program" reserved for the present for a selected group of potential school administrators in the state of Texas. Further information can be obtained from the Department of Educational Administration in the School of Education.

### **Research Bureaus**

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

#### Business and Economic Research John B. McFall, Director

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

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

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

#### Counselor Education Emery J. Cummins, 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.

# Economic Education

The Center for Economic Education works with the public schools to promote better economic education. The functions include (1) research, (2) the development, evaluation, collection and dissemination of appropriate materials, (3) in-service and preservice instruction, and (4) service. The development of more effective strategies and the evaluation of teaching at all levels is involved.

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#### Economics Research Center Robert Barckley, Director

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

#### Bureau of Educational Research and Evaluation Lester A. Becklund, Coordinator

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

### **European Studies Center**

#### Ernest M. Wolf, Director

The European Studies Center coordinates and supports teaching and research related to the European area. It supervises the major in European Studies for the A.B. degree. It sponsors the annual San Diego State University Summer Seminar and Travel Study Tour to Europe in connection with the European Studies Summer Campus at Strasbourg, France. It administers the European Studies Center Laboratory in LE-507 which contains books, pamphlets, English and foreign language periodicals, and a slide collection on European art and geography. The laboratory room is open several hours each day for study and research by students and instructors in courses dealing with any aspect of European studies. The center also assists in the development of the university library's holdings in the European area and has created a special collection of library materials on European integration and unification which is being steadily and systematically expanded.

#### Institute of Labor Economics

#### **Clinton Jencks**, Director

The Institute of Labor Economics is a facility of the Department of Economics to encourage research by students and faculty in all phases of labor problems, collective bargaining, labor legislation and social security. The center is designed to complement the curricular and degree programs in the Department of Economics and to be of service to related disciplines. Publications are exchanged with 75 similar institutes at other universities. Research materials and facilities to assist research and publications in the area of labor economics are maintained in SS-338.

#### Latin American Studies Philip F. Flemion, Director

The Center for Latin American Studies seeks to encourage teaching and research related to Latin America. It has primary responsibility for the administration of the Latin American undergraduate and graduate degrees and the Mexican Summer School programs. The center sponsors a Latin American Lecture Series which provides the campus with public lectures given by guest speakers and members of the San Diego State University faculty who discuss a variety of Latin American topics. The center also assists in the development of the university library's Latin American holdings and has created a special collection of Latin American materials which is available in the center's reading room LE-543.

#### Marine Sciences Glenn A. Flittner, Director

The Bureau of Marine Sciences has been established to facilitate interdisciplinary education and research activity in the Marine Sciences at San Diego State University. The Bureau is administered by a director, and operated under the guidance of a Faculty Committee. Fiscal operation is coordinated through the San Diego State University Foundation.

#### Paleobiology Council Jason A. Lillegraven, Chairman

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

#### Public and Urban Affairs W. Richard Bigger, Director

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

#### Public Economics George 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 a vailable for faculty research projects on subjects in public economics. The Center funds a number of student scholarships which are administered through the Scholarship Office. The Center for Public Economics is located in OL-307.

#### Regional Environmental Studies Charles F. Cooper, Director

The Center for Regional Environmental Studies coordinates and encourages interdisciplinary research, educational and public service programs related to environmental quality and 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 I. Poroy, Director

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

### Social Research

#### Aubrey Wendling, Director

The Social Research Center is a facility of the Department of Sociology. It provides physical equipment and space for the planning and processing of sociological research in such areas of investigation as urban growth and development, demographic factors, and social surveys. Current plans include expansion of the center to include laboratories for experimental studies of social organization. The center is administered for the Department of Sociology by a director whose duties include consulting assistance in the designing and execution of studies and in the preparation of proposals to funding agencies.

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### Survey Research

Oscar Kaplan, Director

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

### **Computer Center**

The Computer Center is established to encourage and support the use of computers in all instructional, research and administrative activities of the University. The Center is a cooperative venture by the San Diego State Foundation, Aztec Shops and the University. The present equipment includes a medium-size electronic digital computer-an IBM 360 Model 40 with 262,144 bytes of core storage, discs, tapes, a printer, card reader and punch. The supervisor is the Disc Operating System which supports the Assembler, COBOL, FORTRAN, PL/I and RPG languages. Remote job entry terminals are located in two buildings on campus. These terminals, consisting of a card reader and printer, are connected in two buildings on computer in the Computer Center via telephone lines. A smaller digital computer, an IBM 1130, supports the APL and FORTRAN languages and has a plotting capability. Additional facilities include all necessary peripheral equipment to permit computer operation in the fields of scientific computation and commercial data processing. Timesharing terminals are strategically located throughout the campus and are tied by telephone lines to a CDC 3170 computer located at CSU, Northridge. Programming and data processing courses, and courses related to some specialized applications of computers are offered by several departments within the University.

### **Research and Project Administration**

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

### **Audiovisual Center**

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

### San Diego State Press

The San Diego State Press operates under supervision of a publications board composed of representatives from each school and college. Financial assistance is coordinated through the San Diego State Foundation.

The Press publishes manuscripts and other works of both scholarly and practical educational value. In addition, it publishes syllabi prepared for specific classes.

## **Financial Aid**

### **Cost of Living**

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

Estimated Expenses for the Academic Year

Forth at was the as dilay density bloods when has	Campus	Commuting
Materials, service, student activity,		
student union fee, facilities fee	\$187	\$187
Books and supplies	180	180
Personal	450	360
Room, board, health	1285	000
Board, incidentals		720
Transportation, parking		270
Total	\$2102	\$1717

In addition, foreign students and out-of-state students pay an annual tuition of \$1300. Typical expenses for married students without children average \$3925 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 not unlimited and applications are considered on the basis of greatest financial need. Financial aid in the form of loans, grants and part-time employment on or off the campus is made available to qualified applicants. In the majority of cases, a student will be offered a package financial aid plan which may include one or more of the types of aid.

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

### **Applying for Aid**

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

A form titled "Preliminary Financial Aid Application for 1974-75" is contained as Part C in the Admissions Application booklet. However, additional information is required for evaluation and determination of financial need. Instructions and any required additional forms will be furnished to those students for whom space at San Diego State University has been reserved. All such additional forms or requested documentation must be returned to

the Financial Aid Office by March 1, 1974. A completed Financial Aid application includes a Parents' Confidential Statement (PCS) or a Student's Financial Statement (SFS). The PCS form may be obtained from your school counselor. It should be filed as soon as possible, in accordance with instructions therein. The SFS form is to be used by independent and married students; it may be obtained from your school counselor or from the Financial Aid Office. It, too, should be filed as soon as possible in accordance with instructions therein.

### **Alan Pattee Scholarship**

Children of deceased public law enforcement or fire suppression employees who were killed in the course of law enforcement or fire suppression are not charged fees or tuition of any kind at any California State University or College, according to the Alan Pattee Scholarship Act, Education Code Section 23762. Students qualifying for these benefits are known as Alan Pattee scholars.

2-85474

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#### Scholarships

The San Diego State University Scholarship Committee will administer approximately 280 scholarships for the 1974-75 academic year. The awards average about \$200. These scholarships are donated by a number of individuals and organizations with the stipulation that the Scholarship Committee select the recipients. Selections are based on recommendations received from the various department chairmen and financial need. Information is available from the Scholarship Office, Room 122, Campus Laboratory School building. A similar pro-

from the Scholarship Office, Room 122, Campus Laboratory School building. A similar pro-gram is anticipated for the 1975-76 academic year. During the 1973-74 academic year about 500 students received scholarships, fellowships, grants or stipends totaling approximately \$500,000 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 depart-ment of their major to determine what scholarship, fellowship, grant or stipend support might be available to them.

For the 1973-74 academic year about 350 students received scholarships from donors who made their own selections and asked the university to administer the funds. These scholarships are generally from clubs and organizations who wish to help students who are studying in areas of interest to the club or organization. Students should ask if a club or organization

of which they or members of their family are members sponsor scholarships. In addition to the scholarships granted to students directly by organizations and individu-als, the following scholarships are awarded through the Scholarship Committee:

Allstate Foundation American Business Women American Institute of CPAs American Society of Military Comptrollers AMOCO Foundation Amsden Memorial Baronofsky, Dorothy Memorial **Bass Broadcasting** Beitner, Brenda Memorial Biehl, Martha S. Memorial Brooks, Baylor Brown, Dr. Leslie P. Burgener, Clair. W. California Association of Teachers of Deaf & Hard of Hearing Children California PTA California Society CPAs-Women's Auxiliary Cap and Gown Chi Omega Copley Newspapers **Country Friends** Cramer, Harry Crossley, Sharon A. Del Cerro Jr. Women's Club Delta Delta Delta Delta Kappa Gamma Dorado Foundation Downtown Optimist Club Driver, Robert F. Co. East San Diego Lioness Club Ellis, George William Memorial English Speaking Union Escobedo, R. I. **Faculty Wives** Fleet Foundation Fontaine, Amelie Memorial Foster, Frank Memorial Fox Foundation

Geldreich, Dr. Edward **General** Dynamics Gore, Bonnie Jean Hess, Robert C. Memorial Hodgetts, Mabel Memorial IBEW. Women's Auxiliary Jones, Sybil Eliza **KFMB** Kappa Beta Nu KGTV La Mesa Dialogue for Action LaSalle, William Memorial Linkletter, Art Lodge, Catherine Yuhan Morrison, Alvin Memorial Mortar Board Alumnae of San Diego National Council of Jewish Women Nuttall-Styris, Inc. Olberg, Lottie E. Memorial Pacific Beach Jr. Women's Club Paine, Miriam Pfaff, Paul Phi Epsilon Phi Pi Lambda Theta Post, Foster Memorial Post. Dr. Lauren C. Public Relations Club of San Diego Public Relations Society of America San Diego-Imperial County Labor Council San Diego Realty Board San Diego State University Alumni San Diego State University Memorial Senn, Percie Belle Shields, Robert Patterson Foundation Sigma Alpha-Gamma Upsilon Chapter Sigma Alpha Iota Alumnae Silverman, Anna & David Memorial Silvergate Lions Club

#### Solar

Southern California First National Bank **SPEBSOSA** Spanish Village Art Center Standard Oil Company of California Stanton, Henry E. Fund Stauffer, Paul C. Memorial Stone, John Paul Stott, Dorothy C. & Kenneth W. Tait, Frank G. Memorial

Thompson, Terry Lynn Memorial Trott, Wilmia Tyler **Tripp** Memorial Union Oil Company Ward, Lola Weiss, Walter Whitney, Guilford H. Foundation Williams, DeWitt Bisbee Zweck, Mr. & Mrs. John



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# **Student Services**

### Staff

Activities: Charlotte Haves, Sandy Herrmann, Stephen Ironhill, Barbara Metzner, Gary Solbue

Career planning and placement, and financial aid: Mary Pat Gannon, Richard B. Haines, E. Biddle Heg, J. Franklin Jonasson, Marilynn Jones, James Kelly, Nancy Leonard, William Linder, Florencio Medina, Cynthia Robinson, Shirley Ross, Nancee B. Williamson

Counseling and testing: Nancy Anderson, Rebecca Bryson, Gwen Cooper, Samuel Gange, Jack Graham, David Hostetler, Mike Irwin, Bill Latta, Henry E. McAdams, David Nesvig, Donald Neuman, Judith Osgood, Earl Peisner, Herman Roemmich, Steven Sherr, Melinda Sprague, Marguerite Strand, Marvalene Styles, John Wood, Winnie Yee

Health services: William S. Baker, M.D.; Mary Bradford, M.D.; C. Leland Colm, M.D.; James Crawford, M.D.; James W. Firoved, M.D.; Frank Grabarits, M.D.; Ralph M. King, M.D.; Kathleen Lilley, M.D.; Robert Vinton, M.D.; and Betty Zak, M.D.; Certrude Anderson, R.N.; Elizabeth Brandt, R.N.; Verna Brooks, R.N.; Juanita Carroll, R.N.; Donna Castonguay, R.N.; Betty Chohan, R.N.; Patricia Coe, R.N.; Ethel Erickson, R.N.; Virginia LeBlanc, R.N.; Virginia Myers, R.N.; Dorothy O'Carroll, R.N.; Joan Simcox, R.N.; Roy Stone, R.N.; Arlene Thompson, R.N.; and Frances Woodiwiss, R.N.

### **University Counseling Center**

Located on the edge of the campus at 5630 Hardy Avenue, the Center is a place where enrolled students and other members of the university community come for a wide range of services designed to enhance the total educational experience at San Diego State. Among these are academic advising for students without a declared major, individual and group

counseling on educational, vocational, personal or social nature. In addition, counselors are involved in the teaching of courses, consultation with student groups, faculty and administration, and the supervision and training of graduate students in Counselor Education and in Psychology.

The Center also offers experiences especially designed for couples, for individuals having a difficult time with their studies, and for considering areas of special interest or concern. Open 8:00 a.m. to 7:00 p.m. Monday through Thursday and until 4:30 p.m. on Friday, the Center provides immediate, walk-in services or you may call for an appointment at 286-5218. Counseling is confidential and places a premium on understanding.

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

### **Test Office**

In addition to working with counselors from the University Counseling Center to provide individual assessments for clients, the Test Office administers the tests required for entrance to college, advanced placement, and admission to various graduate and professional schools.

### **Health Services**

As a part of the program of student personnel services the university provides health services for the protection and maintenance of student health. These services are administered under the supervision of a medical director-administrator. A full-time physician staff is available to the students when school is in regular session for consultation, treatment of minor physical conditions, emergencies and counsel as to follow-up procedures. Full-time nurses and technologists are also on duty when school is in regular session. Special clinics are conducted in Family Planning, Ear, Nose and Throat, Dermatology, Gynecology and Or-

As a part of the admissions procedure a health history is required of all students. On the reverse side of the health history is a physical examination form to be completed by the private physician. Careful attention is given to students undergoing private remedial treatment, and those for whom a modified study load or a limited participation in physical education activities seems advisable. The physical examination must be completed as a condition to matriculation in accordance with Title 5, California Administrative Code, Para-

A student health insurance program sponsored by the Associated Students is currently in effect. This insurance, which covers hospitalization and specified medical and surgical services, may be purchased by the semester or the year through Aztec Shops, with enrollment open the first thirty days of each semester. Refund will be made to students graduating or dropping out of school on a prorated basis.

# **Career Planning and Placement Center**

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

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

Students should seek out the counselor appropriate to their academic and vocational goals early in their college careers.

Credit courses relating to career planning are offered by the Center.

Going to college is regarded as a full-time job. Students are normally expected to spend in class and study a total of three hours a week for each unit of college work. A normal 15-unit load, therefore, represents a 45-hour week. Students should consider this before accepting part-time jobs.

When ready to seek a full-time career position, the student registers with the Career Planning and Placement Center so that he is able to fully take advantage of all the services that are offered.

At the beginning of the student's last semester, one should come to the Career Planning and Placement Center to obtain the information necessary to start a career folder.

### **Vocational Rehabilitation Services**

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

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

### **Study Skills Center**

The university requires students to demonstrate writing proficiency consistent with its established standards, and accordingly requires all students to pass the Writing Competency Test, or to successfully complete a remedial writing course in the Study Skills Center, prior to graduation.

The Center also offers a semitutorial service to all students at any level of college work who wish to improve reading or writing skills or to get help with study problems or writing projects, either remedial or advanced. If interested, students may enroll in Study Skills R, W, or S, or simply come to the Center without registering.

### Audiology Diagnostic Center

The Audiology Diagnostic Center is a facility of the Speech Pathology and Audiology Department. It is located on the lower floor of the Education Building, adjacent to Health Services. 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.

### **Speech and Hearing Clinic**

A speech and hearing clinic in which university students are trained in the application of: speech, hearing and language pathology techniques; speech, lipreading, auditory training and language development for the hard of hearing and deaf. 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.

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### **Clinical Training Center**

The Clinical Training Center prepares university students at the undergraduate and graduate levels to identify and diagnose children's and young adults' physiological and psychological difficulties, to teach and give remediation, and to test and counsel. Students from the departments of Education, Psychology, Social Work and Speech Pathology and Audiology receive a variety of carefully planned experiences, including an opportunity to work with children and youth 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 which utilize the intertusterprinary 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 Activities**

A rich field of cocurricular activities is available to San Diego State University students. The Student Handbook, This is San Diego State, available at the time of registration, gives information concerning the nature and scope of these opportunities. The Dean of Activities, Dorothy V. Simpson, and her staff are available to students desiring advice and assistance in planning campus activities.

A multitude of exciting opportunities are offered to students wishing to participate in student activities. Some students enjoy participation in musical and dramatic performing groups, the intercollegiate athletic program, and newspaper, magazine, radio, television and film productions. Other students participate in student organizations; among the approximately 200 student organizations offering membership are service groups, honor societies, professional societies, recreational organizations, departmental organizations, political orga-nizations, religious organizations, national social fraternities and national social sororities.

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 the Panhellenic Office, San Diego State University, San Diego, California 92115.

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 in care of the university activities office.

### **Student Centers**

San Diego State University was the first of the California State University and Colleges to build and operate a permanent university center. The Aztec Center story started in the mid-1930's when students and faculty began accumulating funds for construction. In 1956, the Associated Students Council set aside a permanent portion of the Activities Fee for the building fund. Students voted to assess themselves a mandatory fee for the further development of the project in 1963. Two years later the U.S. Department of Housing and Urban Development extended a 40-year loan of \$2.9 million to enable construction to begin. The student union fee will be used to retire this indebtedness; no public tax money is involved. The furnishings and equipment were paid for with student funds and contributions from Aztec Shops, Ltd. From inception to the finalities of interior furnishings, students and faculty have shared alike in all phases of its planning and development. Financed by a student union fee, it is a nonprofit, self-sustaining, self-liquidating, non-tax supported, student-financed operation. Government of the Center is by the Aztec Center Board, composed of nine students and one faculty member. Anyone is welcome to the meetings, which are open and frequent.

Use of the Center 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 110,000 square foot structure houses a portion of the activities program and includes

several lounges, conference rooms, bowling lanes, and space for billiards, table tennis, an information booth, contract Post Office, ticket office, lost and found, barber shop, student government center, a snack bar (Monty's Den), and a large hall (Montezuma Hall) for lectures, movies and concerts.

In addition to the Center Facilities, Scripps Cottage and Park, and the Aquatic Center complement the Associated Students' commitment to provide facilities for student needs.

Scripps Cottage and Park serve the west side of the campus, providing a relaxed atmosphere for student gatherings. The cottage originally was given to the campus from the estate of Ellen Browning Scripps. The cottage has been completely refurbished, and a lovely 40-acre park has been added to the area.

The Mission Bay Aquatic Center has recreational sailing, waterskiing and water sports activities for the campus community at Santa Clara Point, in San Diego's beautiful Mission Bay. This complete aquatics recreation facility is available for the use of San Diego State University students year round. Water recreation and just plain fun await you.

### **Aztec Shops**

Aztec Shops, Ltd. is a nonprofit campus auxiliary organization serving San Diego State University exclusively. The primary purpose of Aztec Shops is to provide Bookstore and Food Services to the campus. Other services of the Shops include check cashing, free notary service, ticket sales, lost and found, a contract post office and a copy center. The bookstore provides required textbooks, assigned class materials, reference works and

offers a large selection of general interest books and supplies. Copy Center provides xerox copying, poster printing, binding and collating.

Food Services operates East Commons, West Commons and Monty's Den cafeterias. In addition, a meal ticket program is available to any enrolled student with 19-, 14- and 10-meal options.

### **Alumni** Association

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

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

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

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

### **Residence Halls**

Accommodations for 1668 single students are available in six residence halls on campus. Each of the buildings is fireproof and air-conditioned throughout. Five red-brick halls (one coed, one for men and three for women) accommodate 209 students each, with sleeping and study facilities on a two-students-per-room basis. The sixth residence, which is a high-rise coed, accommodates 623 students. Study hours are agreed on by residents. Participation in campus activities is encouraged. Student government in each residence sets standards for basic behavior in these residence halls. Each of the residence halls is staffed by personnel reporting to the Director of Housing.

Currently, the cost for room, including linens, is approximately \$269 to \$364 per semester. Three food service plans (19, 14 or 10 meals per week) are offered in The Commons at

additional charges presently ranging from \$215 to \$295 per semester, on an optional basis. IT IS THE RESPONSIBILITY OF EACH STUDENT TO CONTACT THE HOUSING OFFICE IF ONE WISHES TO OBTAIN ON-CAMPUS HOUSING. APPLICATIONS ARE GIVEN PRIORITY IN DATE ORDER AS THE DEMAND EXCEEDS THE NUMBER OF SPACES ON THIS CAMPUS. To apply for housing, the student should send a self-addressed envelope to the Director of Housing Office. When the application is completed, it should be accompanied with a \$20 deposit, mailed to the Cashier's Office in the Campus Laboratory School. Your request for a space is confirmed when you receive a contract and your first payment is received thirty days before the halls open. A student may apply as early as a year in advance. Applications are taken in order of date received. Though consideration will be given to a student's request for an individual hall and roommate, a specific assignment can not be guaranteed.

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No application can be honored if the student is not accepted for admission into San Diego State University by August 18 (January 15, spring semester). Clearing residency is not the same as being fully admitted to the university. Nor does receipt of a housing contract 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 \$20 refundable security deposit should accompany a request for reservation.

Adjacent to the campus is a nine-story privately owned and operated coeducational residence hall, approved for San Diego State University students. Room and board are available for over 500 students. For information apply directly to El Conquistador, 5505 Montezuma Road, San Diego 92115.

Address questions about other off-campus housing and on-campus halls to the Director of Housing, San Diego State University, HA 860, San Diego, California 92115.

### **Transportation and Parking**

Bus line transportation to the university, connecting with all areas of the metropolitan area, is available daily, except Sundays and holidays. Route S operates north-south on College Avenue, between the campus and the College Grove Shopping Center at Ryan Road. Transfer points for connecting east-west bus lines are at Montezuma Road with Route E-Fletcher Hills, at El Cajon Boulevard with Route E, at University Avenue with Route 7, and at Streamyiew Drive with Route 5.

A free bus runs between the university and Ocean Beach, Mission Beach and Pacific Beach in the morning and afternoon. Schedules are available on campus.

On-campus parking areas are provided for students, faculty and staff. A visitor information booth is located at the entrance to the campus on Campanile Drive.

### **Educational Opportunities Program**

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

#### Veterans

The Campus Veterans Affairs Office assists veterans and dependents with all matters pertaining to Veterans Administration Benefits. Services include assistance with enrollment, applying for educational benefits, tutoring, counseling and referral to appropriate departments or agencies. All eligible veterans and dependents who will be receiving veterans benefits are urged to contact the Veterans Affairs Office as soon as possible.

### **Disabled Students**

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

# Regulations

Admission and Registration General Regulations Graduation Requirements

# Admission and Registration

### Admission to the Campus

Requirements for admission to San Diego State University are in accordance with Title 5, Chapter I, Subchapter 3, of the *California Administrative Code*. A prospective applicant who is unsure of his status under these requirements is encouraged to consult a high school or college counselor or the Admissions Office. Applications may be obtained from the Admissions Office at any of the campuses of The California State University and Colleges or at any California high school or community college.

### **Undergraduate Application Procedures-1975-76**

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

### Category Quotas and Systemwide Impacted Programs

Application category quotas have been established by some campuses, in some majors, where the number of applicants is expected to exceed campus resources. All applications received in the initial filing period will receive equal consideration for such categories. Certain undergraduate programs (architecture, natural resources, nursing, and physical therapy) are impacted throughout the 19-campus system, and applicants to such programs are expected to meet supplementary admission criteria for admission to these programs. Applicants to these major programs will be sent further information by the campuses about the supplementary criteria to be used, and how and when applicants must meet them.

## **Postbaccalaureate Application Procedures**

All applicants for any type of postbaccalaureate status (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for professional growth, etc.) must file a complete application within the appropriate filing period. Second baccalaureate degree aspirants 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 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 in addition to the sources noted for undergraduate applicants.

# Application Filing Periods-1975-76

Summer Fall Winter Spring Initial Filing Period the previous February the previous November the previous June the previous August

Extended Filing Period March until filled December until filled July until filled September until filled 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.

### **Space Reservations**

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

### **Hardship Petitions**

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

## **Filing of Records**

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

- (1) Transcript from high school of graduation or last in attendance (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 the master's degree 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. This test may be taken before registration by all undergraduate students transferring to this university with 45 units or more of advanced standing. Passing this test or satisfactory completion of designated courses or remedial programs is a graduation requirement for all students.
- b) 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.

#### **Teacher Education Tests**

Assembly Bill 122, commonly known as the Ryan bill, has caused vast changes in credential requirements, including those for admission to programs. Refer to Admission to Teacher Education section of this catalog on the School of Education.

#### **Qualification Tests**

Chemistry Placement Examination. Required of student before enrollment in Chemistry 1A or 10A. 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.

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Mathematics Placement Examination. Required of students before enrollment in any of the following courses: Mathematics 3, 4, 19, 20, 21, 40, 50; and Economics 2. 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 Bulletin for full information and test dates.

### **Undergraduate Admissions Requirements**

First-time freshman eligibility is governed by an eligibility index. The index is computed using the high school grade point average on all course work completed in the last three years of high school, exclusive of physical education and military science; and the ACT composite, or the SAT total score. The full table of grade point averages, with corresponding test scores and the equation by which the index is computed, is reproduced on page 45. 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,	In
Registration Unit, P.O. Box 168	
Iowa City, Iowa 52240	

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

First-Time Freshmen (California high school graduates and residents). An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have an eligibility index which places him among the upper one-third of California high school graduates. The minimum acceptable index for applicants using the SAT score is 3072; using the ACT score, 741.

First-Time Freshmen (high school graduates from other states and U.S. possessions). The admissions requirements for nonresident applicants are more restrictive than those for California residents. An applicant who is a nonresident for tuition purposes and is a graduate of a high school outside California must have an eligibility index which places him among the upper one-sixth of California high school graduates. The minimum acceptable index for nonresident applicants using the SAT score is 3402; using the ACT score, 826.

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

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

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

### **Eligibility Index**

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

The minimum eligibility index is: SAT = 3072 and ACT = 741. The index is computed either by multiplying the grade point average by 800 and adding it to the total SAT score, or multiplying the grade point average by 200 and adding it to 10 times the composite ACT score.

G.P.A.	A.C.T. Score	S.A.T. Score	G.P.A.	A.C.T. Score	S.A.T Score									
(-)1			2.96	15	704	2.71	20	904	2 47	25	1006	0 00	20	1000
3.20	11	512	2.95	16	712	2.70	21	912	2 46	25	1104	0.01	30	1290
3.19	11	520	2.94	16	720	2.69	21	920	2.45	26	1112	2.21	21	1304
3.18	11	528	2.93	16	728	2.68	21	928	2 44	26	1120	2.20	01	1012
3.17	11	536	2.92	16	736	2.67	21	936	2.43	26	1120	2.19	21	1320
3.16	11	544	2.91	16	744	2.66	21	944	2.42	26	1136	9 17	21	1020
3.15	12	552	2.90	17	752	2.65	22	952	2.41	26	1144	2 16	21	1944
3.14	12	560	2.89	17	760	2.64	22	960	2.40	27	1152	9 15	20	1044
3.13	12	568	2.88	17	768	2.63	22	968	2.39	27	1160	2 14	20	1260
3.12	12	576	2.87	17	776	2.62	22	976	2.38	27	1168	2 13	20	1269
3.11	12	584	2.86	17	784	2.61	22	984	2.37	27	1176	2 12	32	1976
3.10	13	592	2.85	18	792	2.60	23	992	2.36	27	1184	2 11	22	1284
3.09	13	600	2.84	18	800	2.59	23	1000	2.35	28	1192	2 10	22	1202
3.08	13	608	2.83 .	18	808	2.58	23	1008	2.34	28	1200	2 00	22	1400
3.07	13	616	2.82	18	816	2.57	23	1016	2.33	28	1208	2.08	22	1400
3.06	13	624	2.81	18	824	2.56	23	1024	2.32	28	1216	2.07	22	1416
3.05	14	632	2.80	19	832	2.55	24	1032	2.31	28	1224	2.06	33	1494
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			

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

### **Undergraduate Transfers (resident and nonresident)**

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

- 1. He was eligible for admission in freshman standing (see First-Time Freshmen requirements) and has earned an average grade of "C" (2.0 on a scale where A = 4.0) or better in all transferable college units attempted.
- 2. He has completed at least 56 transferable semester units or 84 transferable quarter units with an average grade of "C" (2.0 on a scale where A = 4.0) or better if a California resident. Nonresidents must have a G.P.A. of 2.4 or better.

### **Evaluations of Transfer Credits**

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

### **Other Applicants**

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

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

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### Postbaccalaureate (Graduate) Admission Requirements

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. On acceptance into the university, they will be admitted with unclassified graduate standing if they hold an acceptable bachelor's degree from an accredited institution or with undergraduate standing if they do not hold such a degree.

### **Unclassified Graduate Standing**

For admission to graduate standing as an Unclassified Graduate Student, a student shall have completed a four-year college course and hold an acceptable baccalaureate degree from an accredited institution, or shall have completed equivalent academic preparation as determined by the appropriate campus authorities; and must satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations, as the appropriate campus authorities may prescribe. Admission to a State University or College with Unclassified Graduate Standing does not constitute admission to graduate degree curricula.

#### **Classified Graduate Standing**

A student who has been admitted to a State University or College under the Unclassified Graduate requirement above may, upon application, be admitted to an authorized graduate degree curriculum if he satisfactorily meets the professional, personal, scholastic, and other standards for admission to the graduate degree curriculum, including qualifying examinations, as the appropriate campus authorities 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, as determined by the appropriate campus authorities, shall be eligible to continue in such curricula. Students whose performance in a graduate degree curriculum is judged to be unsatisfactory by the authorities of the campus may be required to withdraw from all graduate degree curricula offered by the campus.

### 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 \$33 per year or \$20 per semester.

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: English 1X, English 1Y, English 5. These English 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 Coordinator of Foreign Student Admissions.

### Limitation of Enrollment

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

### Registration

After a student has been admitted to the University, his first basic step is to register for classes. Registration at San Diego State University is held prior to the beginning of each semester and each summer session. It is conducted in two parts, one part for new and readmitted students and one for continuing students. 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. Registration times listed are based on priority numbers assigned to students at the time they are admitted. Priority numbers are placed on the Notice of Admission for entering students and on all student plastic identification cards. Students who cannot be present at registration may have another person register for them at their scheduled time. The person designated must have his alternate's ID card and must pay his fees. He will also be required to provide necessary data on the student information card. Late registration at San Diego State University is possible only in cases of genuine emergency. This involves petition action and additional fees and in no case is permitted beyond the first week of class.

### Determination of Residence for Nonresident Tuition Purposes

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

The following statement of the rules regarding 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 22800-22865, 23753.1, 23754-23754.4, 23758.2 and 23752, and in Title 5 of the *California Administrative Code*, Article 4 (commencing with Section 41901) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

Legal residence may be established by an adult who is physically present in the state while, at the same time, intending to make California his permanent home. Steps must be taken at least one year prior to residence determination date to evidence the intent to make California the permanent home with concurrent relinquishment of the prior legal residence. Some of the relevant indicia of an intention to establish and maintain California; esidence may be established by 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.

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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 father (or from his mother if the father is deceased), 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 1974-1975 academic year are August 30, 1974 and January 15, 1975. 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 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 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 credentialed, full-time employees of school districts. 8. 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.

9. Certain exchange students.

10. 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. 11. 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 the student is currently enrolled.

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

Office of General Counsel 5670 Wilshire Boulevard Suite 1260 Los Angeles, California 90036

within 120 calendar days of notification of the final decision on campus of his classification. The Office of General Counsel may make a decision on the issue, or it may send the matter back to the institution with instructions for a further review on campus. 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.

#### Advising

Provision is made during orientation week for each new student to obtain assistance from a faculty adviser in arranging a program. Each student should thereafter schedule a conference with his adviser at least once during each semester.



Photographer: John Gross

# **General Regulations**

# Student Responsibility for Catalog Information

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

The Board of Trustees of The California State University and Colleges, in Section 43800 of Title 5 of the *California Administrative Code*, has reserved the right to add, amend, or repeal any of its regulations, rules, resolutions, standing orders, and rules of procedures, in whole or in part, at such time as it may choose. None shall be construed, operate as, or have the effect of an abridgment or limitation of any rights, powers, or privileges of the Trustees. The Chancellor reserves the right to add, amend or repeal any of his Executive Orders, at such time as he may choose, and the President of San Diego State University reserves the right to add, amend, or repeal provisions of this catalog and rules of the University, including handbooks, books, 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.

### Grades

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

#### **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.

#### **Grades for Classified Graduate Students**

Graduate courses graded on the credit/no credit basis are limited to courses 296, 297, 298, 299 and certain 200- and 300-numbered courses in the School of Education. No 100-numbered courses graded credit/no credit are acceptable on a master's degree program. No undergraduate courses graded credit/no credit may be assigned to the deficiencies and/or foreign language option(s) of a master's degree program. At least 70% of the units used to fulfill the minimum requirements on a master's degree program shall be graded on an A, B, C, D, F basis.

#### **Grade Point Average**

To compute the grade point average, one divides the total number of grade points earned by the number of units attempted. Units earned with a Cr (Credit) are not included in the computation. The minimum GPA for a bachelor's degree is 2.0 (C); in other words, the student must have earned at least twice as many grade points as units attempted.

#### **Incomplete Grade**

An Incomplete signifies that a portion of required course work has not been completed and evaluated in the prescribed time period due to unforeseen, but fully justified, reasons and that 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 will result in an Incomplete being counted as equivalent to an "F" (or an "NC") for grade point average and progress point computation.

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

#### Satisfactory Progress Grade

The symbol SP (satisfactory progress) is used in connection with courses that extend beyond one academic term. The symbol indicates that work in progress has been evaluated as satisfactory to date but that the assignment of a precise grade must await the completion of additional course work. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. All work is to be completed within one calendar year of the date of first enrollment and a final grade will be assigned to all segments of the course on the basis of overall quality. Any extension of this time must receive prior authorization by the Dean of the University College (for undergraduate courses) or the Dean of Graduate Studies (for graduate courses).

#### **Uncompleted Theses**

A student who registers for Course 299, Thesis, but does not complete the thesis by the end of the semester or summer session in which he registers for it will, upon the recommendation of the Thesis Committee Chairman, receive an SP (satisfactory progress) grade. This grade symbol will remain on the student's record until the thesis is completed or up to two calendar years from the beginning of the semester or term of registration in the course, whichever occurs first. If, at the end of two years, the thesis is not completed the grade NC (no credit) will be recorded on the student's record, unless extension of time for completion, due to extenuating circumstances, has been recommended in advance by the Thesis Committee Chairman and the Department Chairman, and is approved by the Dean of Graduate Studies. A second registration in Course 299, Thesis, is expressly prohibited.

A student who has been assigned the grade symbol SP for the thesis is required to register for Graduate Studies 300 (0 units, Cr/NC) in any semester or term (within the two-year period, as outlined above) in which he must be registered in the course when the completed thesis is granted final approval.

### 52 / General Regulations

#### Courses

Except as permitted in general education requirements, a course cannot be used to satisfy more than one requirement.

### Numbering of Courses

Courses numbered 1 through 99 or by letters (A, B, C, etc.) are in the lower division (freshman and sophomore years); those numbered 100 through 199 are in the upper division (junior and senior years); and those numbered 200 through 299 are strictly graduate courses. Courses numbered 300 or over are graduate professional education courses. Courses numbered X-900-X-999 are those offered exclusively in the extension program to meet the professional needs of specific community groups. These courses are not acceptable on advanced degree programs.

#### Auditing

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

### **Repeated Course**

A student who has received a grade of D, F or Incomplete in a course may repeat that course. While the original grade will remain on the transcript, only the results of the last attempt will be used in computation of grade point average.

### **Final Examinations and Credit**

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.

#### **Credit for Upper Division Courses**

Normally, only juniors, seniors and graduate students enroll in upper division courses (numbered 100 and above). However, a freshman or sophomore who demonstrates to the satisfaction of the appropriate department that he is qualified may enroll in an upper division course if the instructor consents. He may get upper division credit for it if, in addition, he secures the approval of the chairman of the department and of the dean of the school or college concerned, and files the approval with the Evaluations Office.

### **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 100-numbered courses listed in the Graduate Bulletin as acceptable for master's degree programs, and certain 200-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 200-numbered courses will be accepted toward the minimum unit requirements for the master's degree.

#### **Concurrent Postgraduate Credit**

A senior who is within seven units of completing requirements for the bachelor's degree and who has been admitted to teacher education may petition the Dean, School of Education, to take a maximum of 12 units of 100-numbered courses for concurrent postgraduate credit with remaining requirements for a bachelor's degree to apply toward the minimum unit postgraduate requirements for a teaching credential. The bachelor's degree must be completed at the end of the semester in which the concurrent postgraduate credit is earned. Extension courses are not acceptable for postgraduate credit.

#### **Credit for Extension Courses**

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

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

#### **Credit by Examination**

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

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

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

3. Credit-by-examination is restricted to regular undergraduate courses listed in the general catalog; does not include 200-numbered, 300-numbered, or Extension courses; cannot exceed 30 units as applicable to graduation; and does not count as residence credit. 4. Credit-by-examination is not treated as part of the student's study load and, therefore,

is not considered for Selective Service purposes or by the Veterans Administration in the application of their respective regulations; and is not always accepted as transfer credit between collegiate institutions.

### **Credit for Advanced Placement Examinations**

San Diego State University grants credit toward its undergraduate degrees for successful San Diego State University grants credit toward its undergraduate degrees for successful completion of examination of the Advanced Placement Program of the College Entrance Examination Board. Students who present scores of three or better will be granted six semester units (nine quarter units) of college credit.

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

Students may earn 3-10 semester units of credit toward their bachelor's degree for each Advanced Placement Examination satisfactorily passed while in high school. The chart below indicates the score necessary, the units earned and the course equivalents for each of the examinations offered.

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Examination	Credit allowed Score toward degree		SDSU course equivalents*	Remarks			
American History	3, 4, 5	6 semester units	History 17A-17B	(6) Satisfies American His- tory/institutions and ideals requirement			
TUA		6 competer units	History 4A-4B	(6)			
European History_	3, 4, 0	o semester units	English 5-6	(6)			
English	3, 4, 5	o semester units	French 3 and 10	(6)			
French	3	o semester units	French 4 and 11	(6)			
CANES V. DIVLOY ON	4, 5	o semester units	Trench 4 and 11	(3)) If more than one ex-			
Classics: Vergil	3, 4, 5	3 semester units	Laun a	(3) amination is satisfac-			
Latin Prose	3, 4, 5	3 semester units	Latin 3	(a) tarila paged 2 addi-			
Latin Lyric	3, 4, 5	3 semester units	Latin 3	tional units credit will be provided			
Corman	3	6 semester units	German 3 and 10	(6)			
German	4.5	6 somostor units	German 4 and 11	(6)			
0	4,0	6 comester units	Spanish 3 and 10	(6)			
opanisa		6 semester units	Spanish 4 and 11	(6)			
	4,0	o semester units	Dielogy 1 and 2	(4) + Biology 166 (2)			
Biology	3, 4, 5	6 semester units	Chamistan 14 and 1P	(10)			
Chemistry	3, 4, 5	10 semester units	Chemistry IA and IB	(10)			
Mathematics	TR. N. S. S.	III THE SHARE	24.12 11 10	(E)   Mathematics 166 (1)			
Calculus AB	3, 4, 5	6 semester units	Mathematics 50	(5) + Mathematics 100 (1)			
Calculus BC	3, 4, 5	9 semester units	Mathematics 50	(5) + Mathematics 51 (4)			
Physics			the second second second	(			
B	3, 4, 5	8 semester units	Physics 2A-2B	(6) + Physics 3A-3B (2)			
C	3, 4, 5	8 semester units	Physics 4A-4B	(8)			
Art History	3, 4, 5	6 semester units	Art 50A-50B	(6)			
Studio Art	3. 4. 5	6 semester units	Art 1A-1B or Art 2A-2E	3 (6)			
Musia	345	6 semester units	Music 2 51	(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. Scores should be forwarded to the Admissions Office for evaluation.

#### **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 in the university. The military form DD-214 must be filed with the Admissions Office if military credits are to be counted toward the bachelor's degree or used to shorten the time needed for the degree. This form, or equivalent records verifying active military service in the United States armed forces, should be submitted at the time of applying 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. 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.

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

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 third week 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 are handled and filed as above, except that such requests also must be endorsed by the Vice President for Academic Affairs or his designee.

#### Change of Major or Curriculum

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

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

### 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 third week of classes. For complete information about withdrawals after the first three weeks of the term, refer to change of program.

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

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.

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

Entrance upon extended active military duty must be without unreasonable and unnecessary delay (normally within 30 days) after the date of withdrawal from the university to qualify the student for refund or partial credit. Verification of entry upon extended active duty is required and must be by written statement of the commanding officer or by official copy of orders. Application for withdrawal from the university may be made by the student in person, or by telephone or mail. Forms for withdrawal will also be sent to the student if requested by a person designated by the student as his representative in making the request.

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

Educational Leave of Absence. Students are permitted to take a total of two semesters of approved leave of absence during their matriculation at San Diego State University if it can be clearly established that the leave will contribute to a student's educational objective. Students are not penalized for taking leaves, and retain their priority numbers without change. No fees are involved.

At least five weeks prior to registration period for the semester during which he wishes a leave, a student must file application for the leave at the Registrar's Office. Deadlines for filing may be obtained at that office. Requests will be reviewed by appropriate officials designated by the Vice President for Academic Affairs. Leaves cannot be 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.

### Scholastic Probation and Disqualification **Undergraduate Students**

Progress toward the bachelor's degree is monitored in terms of progress points per unit attempted. Progress points are as follows: A, four progress points; B, three; C and Cr, two; D, one; F and NC, zero progress points. An undergraduate student will be placed on academic probation if at any time his cumulative grade point average in all college work attempted or his cumulative grade point average at this institution falls below 2.0 or if during any term while he in enrolled he fails to earn at least two times as many progress points as all units attempted.

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

- An undergraduate student on academic probation is subject to academic disqualification:
- A. As a lower-division student (less than 60 semester hours of college work completed) A. As a lower-division student (less than of semester hours of conege work completed) if he falls 15 or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.
  B. As a junior (60-89 semester hours of college work completed) if he 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 he 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 he is on probation he fails to earn at least twice as many progress points as units attempted.

### **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.
- Repeated failure to progress toward the stated degree or objective or other program B. objective (when such failure appears to be due to circumstances within the control of the student).
- Failure to comply, after due notice, with an academic requirement or regulation C. 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 Disgualification

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.
- The student becomes subject to academic probation while on administrative B. academic probation.
- The student becomes subject to administrative academic probation for same or C. similar reason for which he has been placed on administrative academic probation previously, although not currently in such status.

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

#### **Graduate Students**

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

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

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

A. Standards for Placing Graduate Students on Scholastic Probation

- 1. A graduate student will be placed on scholastic probation at the end of a semester if his grade point average on all work attempted at San Diego State University, subsequent to his admission to the campus as an unclassified graduate student, falls below 2.5.
- 2. A graduate student who is on probation during a given semester will be continued on probation at the end of that semester if (a) his overall graduate grade point average, including the semester in question, remains below 2.5 and (b) his grade point average on work taken during the semester is 3.0 or above. B. Standards for Removing Graduate Students from Scholastic Probation.
- A graduate student who is on probation during a given semester will be removed from scholastic probation at the end of any semester in which his overall graduate grade point average is 2.5 or higher. C. Standards for Scholastic Disqualification of Graduate Students.
- A graduate student may be disqualified from the University for scholastic reasons at the end of any semester during which he is on probation if at the end of that semester (1) his overall grade point average, including the semester in question, is below 2.5 and (2) his grade point average for work taken during that semester is below 3.0.

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

### **Student Discipline and Grievances**

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

41301. Expulsion, Suspension and Probation of Students. Following procedures consonant with due process established for the campus of which he is a student, any student of a campus may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be campus related:

(a) Cheating or plagiarism in connection with an academic program at a campus.

(b) Forgery, alteration or misuse of campus documents, records or identification, or knowingly furnishing false information to a campus.

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

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

(e) Physical abuse on or off campus property of the person or property of any member of the campus community or of members of his family or the threat of such physical abuse. (f) Theft of, or nonaccidental damage to, campus property or property in the possession

of, or owned by, a member of the campus community.

(g) Unauthorized entry into, unauthorized use of, or misuse of campus property into (h) On campus property, the sale or knowing possession of dangerous drugs, restricted in California statutes, except when 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. Violation of any order of the campus president, notice of which had been given prior (1) 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 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

(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 Students (AD 201).

Graduation Requirements / 61

# **Graduation Requirements** for the Bachelor's Degree

To qualify for graduation with a bachelor's degree from San Diego State University, the student must fulfill all of the following requirements.

### 1. Competency Tests.

Competency in mathematics and composition as demonstrated by tests or by satisfactory completion of designated courses.

Mathematics competency may be demonstrated by satisfactory scores on the quantitative section of the ACT (American College Test), or SAT (Scholastic Aptitude Test), or CQT (College Qualification Tests). Cutoff scores for determination of competence is the 15th percentile, based on national norms.

Students who fail to achieve a satisfactory score on a test will be permitted to retest on the COT.

In the event a student does not satisfy the requirement by examinations he may do so by

successfully completing Mathematics 3, 10B, 18 or higher numbered course. The Writing Competency Test may be taken at the first scheduled date for the test following the student's completion of 45 units of college work. All students transferring to this university with 45 units or more of advanced standing credit may take this test before registration. Passing of this test or the retake, which includes the writing of an essay, or satisfactory completion of English W, or remedial programs prescribed for the student by the University Committee on English fulfills the requirement.

### 2. Units.

For the A.B. and B.V.E. degree, a total of 124 units satisfactorily completed (grade of D or better); for the B.S. in engineering and B.M., a total of 132; for all other B.S. degrees, the total is 128. Of the total, 36 units must be upper division for the B.S., 40 for the B.V.E., the B.M. and for the A.B. in applied arts and sciences, and 45 for the A.B. in liberal arts and sciences. Twenty-four units must be earned in residence at San Diego State University, 12 of which must be among the last 20 units applicable to the degree. For the A.B. in liberal arts and sciences, no more than 48 units in one department can apply to the degree. In the School of Business Administration, at least 52 units of the total must be in business and economics, at least 52 outside those areas. The B.M. consists of no more than 70 units in the major.

### 3. Major and Minor.

Every student must complete a departmental or interdisciplinary major and, if his major calls for it, a minor as well.

Major. A major is defined as a pattern of upper division courses, totaling not less than 24 units for the A.B., B.V.E., or B.M. degree and not less than 36 units for the B.S. degree. The

maximum number of units for a major is determined by the university. Courses in the major are exclusive of those courses used to meet the requirements in general education. Not more than 15 units in lower division prerequisite and related courses required by the department in preparation for the major may be used in general education. Such course or courses, however, may not be used as part of the minimum unit requirement in the student's 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.

Minor. The minor normally consists of 15 to 22 units, at least six units of which must be in upper division courses. Specific requirements and maximum number of units are determined by the university. Courses in the minor may not be counted toward the general education requirements.

### 4. Grades.

In all courses attempted, in all courses at this university (except extension), and in all courses in the major, the student must achieve an average grade of C (2.0).

### 5. American Institutions.

This requirement may be satisfied by any one of the following pairs of courses: Afro-American Studies 7A and 7B History 8A and 8B History 17A and 17B History 172A and 172B History 179A and 179B History 184A and 184B Mexican-American Studies 20A and 20B Mexican-American Studies 41A and 41B Political Science 1 and 2 Political Science 105 and 115 Political Science 105 and 117 Political Science 105 and 118 Political Science 115 and 117 Political Science 115 and 118

Alternatively, this requirement may be met by satisfactory completion of comprehensive examinations in each of the following areas: American history, institutions and ideals; the United States Constitution; and California state and local government. The examinations are administered every semester and during Term I in the summer.

The requirement may also be met by satisfactory completion of a combination of courses and examinations. Relevant courses are:

#### American History

Afro-American Studies 7A-7B; History 8A, 8B; 176A, 176B; 177A, 177B; 179A, 179B; 181A, 181B; Mexican-American Studies 20A-20B, 41A-41B.

#### **U.S.** Constitution

Afro-American Studies 7A; History 8A; 17A; 172A; 177A, 177B; 179A; Mexican-American Studies 20A, 41A; Political Science 2, 115, 139A and 139B.

#### **California Government**

Afro-American Studies 7B; History 8B, 17B, 172B, 179B, 189B; Mexican-American Studies 20B, 41B; Political Science 2, 115, 117, 118.

### 6. General Education.

The requirement in General Education consists of 40 semester units as indicated below. Courses in the following categories may not be used to satisfy General Education Requirements: (a) Courses used in satisfaction of the major (only upper division courses are included in the major); (b) Courses used in satisfaction of a minor (this includes lower and upper division courses); (c) Courses in excess of 15 units required in Preparation for the Major ; and (d) no more than six units of Afro-American Studies or Mexican-American Studies or political science may be used to fulfill requirements in social sciences and American Institutions.

Students with majors in applied arts and sciences and in professional programs must select general education courses in accordance with the pattern described below. Students in liberal arts and sciences may wish to combine general education with the additional breadth requirements for liberal arts and sciences. A special pattern of courses to achieve that purpose is outlined immediately following the general education pattern.

A. At least 32 units in the Natural Sciences, Social Sciences, Humanities, and Basic Subjects, including the minimum required in each subject area as indicated below.

1. Natural Sciences. A minimum of six units to include:

a. A course of two units or more in any of the following departments:

Biology Botany Microbiology Zoology

#### Graduation Requirements / 63

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b. A course of two units or more in any of the following departments:

Astronomy Chemistry Geography (limited to 1 and 3) Geology Physical Science Physics

c. A one-unit laboratory course, unless either of the preceding courses included a laboratory which met for three hours or more per week. Examples of one-unit laboratory courses are Astronomy 9, Biology 2, Geology 3 and Physical Science 3.

2. Social Sciences. A minimum of six units to include: A three-unit course in each of two of the following areas: Anthropology

- Economics (except 2) Geography (except 1 and 3) Afro-American Studies (limited to 20 or 30) 'Mexican-American Studies (limited to 10 or 50) \* Political Science (except American Institutions) Sociology (except 60)
- 3. Humanities. A minimum of six units to include: A three-unit course in each of two of the following areas:

Classics Humanities Literature in English

Literature in a Foreign Language Philosophy (excluding logic) **Religious** Studies

4. Basic Subjects. A minimum of six units to include: Course work in at least three of the following areas: Written Communication in English **Oral Communication** Logic Mathematics or Statistics

Foreign Language (excluding courses in literature or civilization)

5. Electives. Additional units as necessary in the Natural Sciences, Social Sciences, Humanities and Basic Subjects to achieve a total of 32 units in these subjects. Courses which satisfy the requirement in American Institutions may be counted in the 32 units total but may not apply to the six-unit minimum in either the Social Sciences or the Humanities. Students, at their discretion, may include within the 32 units any courses they have taken in the following areas: Art

Drama History (limited to courses in ancient history, Asian civilization and western civilization) Music Oceanography Psychology (limited to introductory courses) Public Administration Speech Communication (limited to courses in semantics and rhetorical theory)

B. Physical Activities. A minimum of two semesters of physical education activity courses, or equivalent monitored activities, or a combination of courses and monitored activities.

#### Required Activity Courses

To meet general education requirements, two semesters of activity courses or monitored activity are required as outlined above. All freshmen students must enroll in an activity course or monitored activity each semester. Two units are needed for general education and graduation, but 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.

No more than six units of Afro-American Studies or Mexican-American Studies or political science may be used to fulfill requirements in Social Sciences and American Institutions

#### Exemptions or Postponement

Veterans who have served a minimum of one continuous year in the United States armed forces are exempted from the general education requirement in physical education. Students over 25 years of age at the time of matriculation may also be exempted from the general education requirement in physical education upon approval by the Vice President for Academic Affairs or duly authorized representative. Students carrying fewer than 12 units during any semester may apply to the chairman of the Physical Education Department for a postponement of the physical education activity requirement. For reasons of health, the Director of Health Services may postpone the enrollment of a student in a physical education activity course. Permanent postponement from the activity requirement will not be made and a postponement does not eliminate the graduation requirement.

C. Electives to complete 40 units. Additional units as necessary in the subjects listed above, or in any other subject listed in this catalog, to achieve a total of 40 units in general education. Students are reminded, however, that courses taken in satisfaction of requirements for the major and minor may not be applied to general education, and not more than 15 units in preparation for the major may be applied to general education requirements.

### **Alternate General Education Program**

Any student with a minimum grade point average of 3.25 at this institution, with a declared major, and with 15 units or more but not over 45 units of college work may submit to the Dean of the University College an alternate program, with supporting reasons, for fulfilling general education-breadth requirements, compatible with the requirements listed below. If approved, the proposed program will replace the standard provisions. A student with such an approved program may, at his option, elect to revert to the standard program in effect at the time of his graduation; any student who changes his major shall revert to the standard 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
- Basic Subjects, minimum of two courses D. For a total of 32 units
- 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.

#### Breadth Requirements for Degrees in Liberal Arts and Sciences

In addition to the general education requirements listed above, students whose majors are offered in the Liberal Arts and Sciences curriculum are required to complete additional breadth requirements. They must follow the outline below. By choosing from this pattern, they may fulfill both general education and the additional breadth requirements for the degree in liberal arts and sciences.

<b>Vatural Science</b>	
Either	
. Seven units	
a. Life science	with laboratory
Choose one:	Statement Assessed
Biology 1	and 2
Biology 4	
b. Physical scie	ence with laboratory
Choose one.	
Astronom	v 1 and 9
Chemistry	1A
Chemistry	2A
Chemistry	10A
Geology 2	and 3
Geology 4	In the decision the se
and the second s	

A.

Or

Microbiology 1 and 1L Zoology 8

Physical Science 1 Physical Science 2A and 3 Physics 4A Physics 2A and 3A Physics 5

2. Nine units selected from Geography 1 or 3, or any courses in astronomy, biology, botany, chemistry, geology, microbiology, oceanography, physical science, physics, zoology. At least three units must be in a life science, and at least three units must be in a physical science; at least one course must be a laboratory course.

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#### **B.** Mathematics and Foreign Language

- 1. Mathematics 18 or higher numbered mathematics course, or satisfactory performance on the placement examination of the Department of Mathematics. Foreign Language-four units. (The requirement may be met by two years of one
- foreign language in high school.)
- 3. Eight additional units in mathematics (course 21 or higher) or in foreign language. (This requirement may be met by completion of a third and fourth year of a foreign language in high school.)

#### C. Social Sciences

- 1. At least two courses (minimum three units for each course) taken in two departments selected from anthropology, economics (except 2), geography (except 1 or 3), political science, sociology (except 60), Afro-American Studies 20 or 30, and Mexican-American Studies 10 or 50. However, no more than six units of Afro-American Studies or Mexican-American Studies or political science may be used to fulfill the requirements in social sciences and American Institutions.
- 2. Electives in any of the above or in public administration.

#### **D.** Humanities and Fine Arts

Either

- 1. The Scope of Civilization
  - a. History 4A-4B, or 9A-9B, or 104A-104B
  - and

b. Two courses taken in two departments selected from classics, humanities, literature, Mexican-American Studies (limited to 30, 100, 133, 135), philosophy (except logic), or religious studies.

#### Or

- 2. The Scope of Civilization
  - a. Comparative Literature 52A-52B or
  - b. Humanities 59A-59B
  - and, in a different department,

c. One additional course (minimum three units) in classics, humanities', literature, Mexican-American Studies (limited to 30, 100, 133, 135), philosophy (except logic), or religious studies.

and

d. One additional course (minimum three units) in art, classics, humanities, literature, Mexican-American Studies (limited to 30, 60, 65C, 100, 133, 135), music, philosophy (except logic), or religious studies.

Or

3. Fifteen units in at least three of the following subjects: art, classics, history (other than courses used to satisfy American Institutions requirements), humanities, literature, Mexican-American Studies (limited to 30, 60, 65C, 100, 133, 135), music, philosophy (except logic), or religious studies. The 15 units must be in departments other than departments offering the student's major and minor.

#### E. Other

- 1. English 5 or 6 or Mexican-American Studies 2B
- 2. Seven or nine units from any three of the following groups:
- a. English 5 or 6 (may not be the same course used under E 1, above), or English 75
- b. Health Science and Safety 21
- c. Mathematics 155 or Philosophy 20, 121, 122
- d. Afro-American Studies 4 or Mexican-American Studies 2A or Speech Communication 3 or 4 e. Psychology 1
- Classics 50
- 3. Physical Education

A minimum of two semesters of physical activity in courses or equivalent monitored activity, to be fulfilled by:

a. Completing two one-unit physical education activity courses over a period of at least two semesters, or

b. Completing two satisfactory semesters of regular monitored physical activity for credit, or

c. Combination of a and b to give the equivalent of two semesters of physical activity.

Civilization courses taught in the various language departments are acceptable for humanities.

#### Required Activity Courses

To meet general education requirements, two semesters of activity courses or monitored activity are required as outlined above. All freshman students must enroll in an activity course or monitored activity each semester. Two units are needed for general education and graduation, but 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.

#### Exemptions or Postponement

Veterans who have served a minimum of one continuous year in the United States armed forces are exempted from the general education requirement in physical education. Students over 25 years of age at the time of matriculation may also be exempted from the general education requirement in physical education. Students carrying fewer than 12 units during any semester may apply to the chairman of the Physical Education Department for a postponement of the physical education activity requirement. For reasons of health, the Director of Health Services may postpone the enrollment of a student in a physical education activity course. Permanent postponement from the activity requirement will not be made and a postponement does not eliminate the graduation requirement.

### **Application for Graduation**

Graduation is not automatic on the completion of requirements. The student who intends to graduate must take the initiative. When he believes that he is eligible, he should file an application with the Evaluations Office, Administration Building, not later than the end of the third week of classes in the fall if he wants to graduate in mid-year, and not later than the end of the eleventh week of classes in the fall if he wants to graduate in June or at the end of summer session. The Class Schedule each semester specifies the exact date. An application fee of \$3.25, which is nonrefundable and nontransferable, is required. Failure to apply on or before the specified date will exclude the student from consideration for honors or distinction.

### **Election of Regulations for Graduation**

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

#### Graduation with Honors and Distinction

With the approval of the faculty, graduation with honors is granted to those students in each graduating class who have achieved high grade point averages by the beginning of the fall semester for mid-year graduates and by the end of the fall semester for June and summer session graduates.

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

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

Upon recommendation of his major department and with the approval of the faculty, a student doing superior work in his major field may be graduated with distinction in that field.

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### Commencement

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

# Second Bachelor's Degree

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



# Curricula

Summary

and the second second	Art	and Sc Curricu	iences la	Profe	ssional Cur	Graduate Curricula		
Majors	Appl Arts Scier AB	ied and ices BS	Liberal Arts and Sciences AB	School of Business Adminis- tration BS	School of Engineer- ing BS	School of Education	Grad Divi MA	uate sion MS
	3017		in the	DC	No.			
#Accounting				BB	attended Hel	S. C. Hannes	1000	MS
†Aerospace engineering			AB			-		
Afro-American studies			AB				MA	
**American studies			AB				MA	
Anthropology	AB		AB				MA	
**Asian studies			AB				MA	
Astronomy	AB		AB					MS
Biology	AB	BS	AB				MA	MS
Botany		BS	AB		The states		MD	ANG
†Business administration							- MD	ANIO
Chemical physics Chemistry	ĀB	BS BS	AB				- MA	MS Ph.D.
++CLUI Jamlanant	22/12	DC				6. D.a (8.40)	1	
ttCity planning	1.5	DO						MCP
+Civil ongineering								MS
Classics			AB	1				
**Comparative literature			AB	12/922	12. 12.20			
Computer science								MS
†Counseling								MS
Criminal justice administra-	1 martin			A CALLER	1			MS
tion		BS .					- 35	MIG
Drama	AB						- 1111	Ph D
#Ecology							- m	rn.D.
Economics			AB				M	A
TEducation								MS
Engineering					BS			
English			AB				. M.	A
ttEnvironmental health		BS						
**European studies			AB		1	N. Carton	1 Ente	
##Finance	_			BS	A ROBAL			
French			AB				M	A
§Genetics								Ph.D.
Geography			AB				M	A
Geology		BS						MS
German			AB				M	A
Health science		BS					M	A
History			AB				111	MS
Industrial arts	- A1						M	A
Industrial technology	AI	BS						
##Information systems				BS	1413133	1.1.2.2.12	21 18	
##Insurance				BS	17 11 12 1	State Barris	11	
Journalism			AB		C Stores		1	
**Latin-American studies			AB				M	IA
Liberal studies	A	B	AB	S States			2	
**†Linguistics							M	IA
##Management				BS	1255	1000		
*** Marketing				BS				
Mathematica		D	17					MS
tMechanical engineering	A	D	AB				N	IA MS
Mexican-American studies			AB					- 110
NULLIOD.								

# Summary of Curricula Offered-Cont.

	Arts	s and Curr	l Sciences ricula	Profe	Professional Curricula				
. Majors	Appli Arts a Scien AB	ied and ces BS	Liberal Arts and Sciences AB	School of Business Adminis- tration BS	School of Engineer- ing BS	School of Education	Graduate Division MA MS		
Microbiology Music Nursing Philosophy	*AB I	BS BM BS	AB				MS MA		
Physical education	*AB		AB AB				MA MA MA		
Physics Political science Psychology Public administration Radialogical physics	 *AB AB	BS	AB AB AB				MA MS MA MA MS MPA		
#Real estate Recreation administration	AB AB	BS		BS			MS MA		
Religious studies Russian **Russian area studies **Social science	*4 B		AB AB AB				MA		
Social welfare     Social work	AB		AB				MA MSW MSSW		
Spanish Speech communication Speech pathology and audi-	AB		AB AB				MA MA MA		
ology Statistics Vocational arts	AB					BVE	MA MS		
Zoology		BS	AB	144	The local				

**‡**‡ Offered by the Department of Telecommunications and Film.

\* Limited to students in Teacher Education.

For master's degree only (not an undergraduate major).
Confered 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.

tt Offered by the Department of Microbiology.

Offered by the School of Social Work.
 Offered by the Department of Mathematics.

Preprofessional Curricula Predental Prelegal Premedical

Curricula in Broad Field Areas Humanities Africa and the Middle East Medical technology

Special Curricula

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

Certificate (nondegree) Program Certificate in public administration

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### **Teaching Credentials**

Multiple subjects teaching credential Single subject teaching credential Standard teaching credential with specialization in community college teaching Restricted credential

### Minors for the Bachelor's Degree

Accounting Aerospace studies Afro-American studies Anthropology Art Asian studies Astronomy Biology Botany **Business** management Chemistry Classical humanities Classics Comparative literature Dance Drama Economics Educational technology and librarianship **Employee** relations Engineering English Finance French Geography Geology German Health science History Home economics Humanities Industrial arts

Information systems Insurance Italian Jewish studies Journalism Linguistics Marketing Mathematics Mexican-American Studies Microbiology Music Philosophy Physical education Physical science Physics Political science Portuguese Production and operations management Psychology Public administration Radio-television Real estate Recreation **Religious studies** Russian Social welfare Sociology Spanish Speech communication Speech pathology and audiology Zoology

# Interdisciplinary Programs
# **Interdisciplinary Programs**

# **American Studies Major**

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

The major in American Studies is offered by the College of Arts and Letters. Dr. Lonna Malmsheimer, LE-522, is adviser for this major.

Preparation for the major. History 17A-17B and English 53A-53B. (12 units.)

Major. A minimum of 30 upper division units to include Humanities 180, History 179A-179B (may be used for group B), and two groups of nine to 12 upper division units

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

Group A: American Literature. English 130, 131, 133, 134, 135, 136, 138, 139. Group B: American History. History 171A-171B, 172A-172B, 173A-173B, 174, 175A-175B, 175C, 176A-176B, 177A-177B, 178A-178B, 179A-179B, 180 (when relevant to American Studies), 181A-181B, 182A-182B, 183A-183B, 184A-184B, 185, 189A-189B.

Group C: Social Sciences. Economics 11A-111B, 112, 135, 136, 138, 173, 174, 185, 189; Geography 121, 154, 155, 158, 159, 160, 170, 171, 173; Political Science 105, 115, 116, 119, 120, 123-S, 124, 125, 126, 130, 132, 138, 139A-139B, 171; Sociology 113, 114, 121, 124, 125, 136, 157; Journalism 117, 121; Mexican-American Studies 102, 105; Family Studies and Consumer Sciences 136; Women's Studies 140, 150A-150B, 180.

Group D: Electives. Art 157; Music 151D; Philosophy 164; Anthropology 171.

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

# **Asian Studies Major**

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

The major in Asian Studies is offered by the College of Arts and Letters. Dr. Alvin Coox, Department of History, is the adviser for this major.

Preparation for the major. Six units in History 4A-4B, 9A-9B, or Philosophy 1 and 2; six units in Anthropology 1 and 2, Economics 1A and 1B, Geography 1 and 2, or Political Science 1 and 3; and Humanities 59A-59B. (18 units.) Art 52A-52B and Comparative Literature 70A-70B are recommended.

Major. A minimum of 30 upper division units to include: From the Humanities not less than 12 units from at least two departments chosen from Art 152A, Comparative Literature 170, 190 through 196 (when relevant); History 180 (when relevant), 190A-190B, 191A-191B, 192, 193, 194, 195, 196A-196B, 197A-197B; Humanities 199 (when relevant); Philosophy 175 (when relevant), 196 (when relevant); Religious Studies 121A-121B, 126A-126B, 180, 181, 190 (when relevant), and 199 (when relevant); and from the social sciences not less than 12 units from at least two departments chosen from Anthropology 175, 178, 186, 190, 191, 192, 196 (when relevant); Economics 102, 115, 167, 189, 190 and 199 (when relevant); Geography 131, 133, 134, 150; Political Science 183, 187, 191. Recommended: Business Administration 165.

Foreign Language. Appropriate Asian language recommended.

# **Asian Studies Minor**

The minor in Asian Studies is offered by the College of Arts and Letters. Dr. Alvin Coox, Department of History, is the adviser for this minor. It consists of a minimum of 21 units to include History 9A-9B or Humanities 59A-59B. Other lower division courses acceptable for the minor are Art 52A-52B, Comparative Literature 70A-70B; and four units of an appropriate Asian language. Twelve units must be in upper division. Upper division courses acceptable for the minor include: (a) from the Humanities, not fewer than six units chosen from: History 190A-190B, 191A-191B, 192, 193, 194, 195, 196A-196B, 197A-197B, Philosophy 175, Religious Studies 121A-121B, 126A-126B; (b) from the Social Sciences, not fewer than six units chosen from: Anthropology 175, 186, 190, 191, 192, Economics 115, Geography 131, 133, 134, Political Science 183, 187, Business Administration 165.

Courses selected from (a) and (b) above must be outside the major. No more than six units may be chosen from among History 192, 193 and Anthropology 191. No more than six units may be chosen from among History 194, 195 and Anthropology 192.

# **Child Development Major**

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

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

Preparation for the major. Anthropology 2; Biology 1; Family Studies and Consumer Sciences 4 and 70; Family Studies and Consumer Sciences 35 or Social Welfare 30; Psychology 1, 50; Sociology 1; Sociology 60 or Psychology 70. (27 units.)

Major. A minimum of 36 upper division units to include Biology 159; Family Studies and Consumer Sciences 135 and 171; Psychology 131 and 150; Sociology 140 or Psychology 145; 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.

# **European Studies Major**

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

The major in European Studies is offered by the College of Arts and Letters. Dr. Ernest Wolf, Department of German-Russian, is adviser for this major.

Preparation for the major. Twenty-two units to include Art 50A or 50B; Economics 1A-1B, or Geography 1 and 2, or Political Science 1 and 3; History 4A-4B; and 12 units in Latin or one of the major European languages (French, German, Italian, Russian, Spanish) beyond the minimum of four units required in liberal arts and sciences.

Major. A minimum of 30 upper division units to be chosen with approval of the adviser and distributed as follows: six units in Humanities to include Humanities 150A-150B or 151A-151B: 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.

# **Humanities** Curriculum

### In Liberal Arts and Sciences

The Humanities curriculum is offered by the College of Arts and Letters. Dr. Frank Marini, Dean of the College of Arts and Letters, is the adviser for this curriculum.

The intensive program in humanities provides a course of study which gives a comprehensive view of the development of contemporary civilization, with practice in critical thinking and careful expression. The program encourages extensive reading in history, literature and philosophy, with oral and written discussion.

### **Specific Requirements and Recommendations**

- I. A major in one of the departments of the College of Arts and Letters, consisting of 24 upper division units and the required introductory courses, plus a minor if required by the major department. Knowledge of one foreign language is required, as specified in the departmental major.
- II. Twelve or more upper division units in related fields, selected with approval of the faculty adviser for the curriculum. (May include courses in the minor, if appropriate.)
- III. The adviser will assist the student who undertakes this program to distribute his course work among the following areas:
  - (a) The origins of Western Civilization: Greek and Roman, Hebrew, Medieval.
  - (b) Western Civilization, 1500-1900; Continental, British and American.
  - Contemporary Civilization. (c)
  - Type courses concerned with more than one period; comparative study of Asian (d) Civilization; linguistics and composition; theory.
- IV. Humanities 198, Integration in the Humanities (3 units).

The student will file with the Evaluations Office a master plan approved by the adviser for the humanities curriculum.

# **Iewish Studies Minor**

The minor in Jewish Studies is offered by the College of Arts and Letters. Dr. Harry Ruja, Department of Philosophy, is adviser for this minor. It provides a balanced interdisciplinary study of Jewish contributions to world culture and history. It serves the needs of students who plan to (1) specialize in disciplines in which an understanding of Jewish contributions is essential, or (2) follow careers in teaching, community service, foreign service or the ministry. Students seeking a minor in Jewish Studies may 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.

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The minor in Jewish Studies consists of 15 to 17 units to include Humanities 30 and 31, or Hebrew 1 and 2; and nine units selected from Comparative Literature 105 (English 105), 185, 186, 192 (Kafka); Hebrew 199; Philosophy 135, 136; Religious Studies 100A and 115.

# Latin American Studies Major

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

The major in Latin American Studies is offered by the College of Arts and Letters. The adviser for Latin American Studies is Dr. Thomas M. Davies, Jr., Department of History. 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 1, 2, 3, 4, 10, 11, or Spanish 1, 2, 3, 4, 10, and 11 with a minimum grade point average of 2.0 for all work attempted; twelve units selected from Anthropology 2, Economics 1A and 1B, Geography 1, History 8A-8B, Political Science 1, 3. (32 units.)

Major. A minimum of 36 upper division units selected from courses in anthropology, art, economics, geography, history, Mexican-American Studies, political science, Portuguese, and Spanish, with not less than twelve 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: Anthropology 155, 157, 162, 163, 169-S, 180, 181, 182; Art 151A, 151B; Economics 114, 153, 195; Geography 123, 124, 198 (when relevant); History 160A-160B, 161A-161B, 162A-162B, 163A-163B, 164, 165A-165B, 167A-167B, 168, 180 (when relevant); Mexican-American Studies 100, 133, 135; Political Science 175, 184, 191, 194, 195; Portuguese 135, 185 (when relevant); Spanish 104A-104B, 106A-106B, 107, 108, 109, 109, 170, 171, 172, 185 (when relevant); spanish 104A-104B, in one of the departments listed above.

# Liberal Studies Major

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

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

**Option 1.** Liberal Studies in Three Disciplines

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

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

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

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

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

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

Group A: English (including courses in grammar, literature, composition) and speech. This group includes the following areas: (1) Afro-American Studies (English and speech only); (2) comparative literature; (3) English, i.e., American literature, British literature, and creative writing; (4) journalism; (5) linguistics; (6) Mexican-American Studies (English

and speech only); (7) speech communication, plus (8) speech pathology and audiology. Group B: *Mathematics and science* (physical sciences or life sciences). This group includes the following areas: (1) geography (1, 3, 4, 5 only); (2) the life sciences, i.e., biology, botany, microbiology, zoology; (3) mathematics; (4) the physical sciences, i.e., astronomy, chemistry, geology, oceanography, physical science, physics; (5) psychology.

Group C: Social sciences. This group includes social science courses only in the following areas: (1) Afro-American Studies; (2) anthropology; (3) economics; (4) family studies and consumer sciences; (5) geography; (6) health science and safety; (7) history; (8) Mexican-American Studies; (9) political science; (10) social welfare; (11) sociology; (12) women's studies.

Group D: Humanities and fine arts (including foreign languages). This group includes the following areas: (1) Afro-American Studies (humanities and fine arts only); (2) art; (3) drama; (4) foreign languages and literatures, i.e., classical and oriental, French and Italian, German and Russian, Spanish and Portuguese; (5) humanities; (6) Mexican-American Studies (humanities and fine arts only); (7) music; (8) philosophy; (9) religious studies; (10) women's studies (humanities and fine arts only).

### Preparation for the major.

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

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

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

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

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

The Liberal Studies Major Option 2 is recommended for students who plan to enter elementary education. It meets all requirements for the multiple subjects/diversified major as specified in the Ryan Bill. Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education. Other students who wish to take this major must consult the Dean of the University College to secure program approval.

# **Russian Area Studies Major**

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

The major in Russian area studies is offered by the College of Arts and Letters. Dr. Vytas Dukas, Department of German-Russian, is adviser for this major.

Preparation for the major. Russian 1, 2, 3, 4, or equivalent. (16 units.) Lower division prerequisites for the upper division courses to be taken in the major. (3-9 units.)

Major. A minimum of 30 upper division units to include nine units from at least two departments in the humanities selected from Comparative Literature 125, 126, History 147A-147B, Humanities 152, 153; nine units from at least two departments in the social sciences selected from Economics 102, 118, Geography 126, 127, Political Science 181, 186; six units in Russian selected from Russian 101A-101B, 102A-102B, 103, 104, 105A-105B, 110A-110B, 111; and six units of electives selected with the approval of the adviser.

Includes all General Education requirements except physical education. (Students who plan to enter elementary education must take Physical Education 53 in lieu of one of the physical education activity units for General Education.)
 Mathematics 10A-10B is required for students who plan to enter elementary education.
 One course in either physical or life science must include a laboratory.
 Health science and safety is required for students who plan to enter elementary education.

Music 2 is required for students who plan to enter elementary education

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# Social Science Major

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

The major in social science is offered by the College of Arts and Letters. Information may be obtained in LE-363A.

Preparation for the major. Mathematics 19 or other statistics course offered by a social science department; a six-unit sequence in each of three of the following fields: (1) anthropology, (2) economics, (3) geography, (4) history, (5) Mexican-American Studies, (6) political science, (7) sociology. (21 units.) Courses recommended for these sequences are as follows: Anthropology 1 and 2; Economics 1A and 1B; Geography 1 and 2; History 4A-4B or 8A-8B; Mexican-American Studies 1A-1B, 10 or 20A-20B; Political Science 1 and 2; and Sociology 1 and 10.

Major. Thirty upper division units in the fields listed above to include 15 units in one; six units in each of two others; three more units in one of these or a fourth field. Mexican-American Studies is limited to six units selected from 100, 101, 102, 103, 104, 105, 111, 121, 122A-122B, 180, 183, 186,

Courses covering four fields must be completed. If the requirement for the fourth field is not satisfied by the three upper division units described above, then it may be satisfied by three units of lower division credit.

# Social Science Major

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

The adviser for this emphasis is Dr. David H. Johns, Department of Political Science. Emphasis in Africa and the Middle East.

Preparation for the major. History 4A-4B, Humanities 57 and/or 58, and three to six units selected from: Anthropology 1, 2; Comparative Literature 52A, 52B, 80A; Economics 1A, 1B; Geography 1, 2; and Humanities 30, 31. (15 units.) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements per se for the completion of the major.

Major. A minimum of 30 upper division units, selected with the consent of the adviser, to include at least 15 units in anthropology, economics, geography, history, political science studies. *Required courses:* Anthropology 76 or 184 or 185; Economics 119; Geography 125 or 130; six units from History 156A, 156B, 157, 158A and 158B; and Political Science 188 or 189 or 180. In addition the following statement of the f or 192. In addition the following courses are recommended: Anthropology 152, 153, 154, 156, 164; Art 152B, 158; Comparative Literature 175; Economics 189, 195; History 123, 155A-155B, 183A; Political Science 176, 191; Religious Studies 114, 115, 116.

Foreign Language: Arabic 1, 2, 103 and 104, or Hebrew 1, 2 and 3 or French 1, 2 and 3 or Portuguese 1, 2, and 3. 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.

# Social Science Major

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

The adviser for this emphasis is Dr. Warren A. Johnson, Department of Geography.

# **Emphasis in Environment**

Preparation for the major. Biology 1 and 2, Chemistry 7A; 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 1 and 2, Economics 1A and 1B, Geography 1 and 2, History 4A-4B or 8A-8B, Political Science 1 and 2, Sociology 1 and 10. Additional recommended courses include: Chemistry 7B, Geology 2, 3, and 4.

Major. A minimum of 30 upper division units to include 12 units selected from Economics 158, 159, 171, 173, 174, 175, 176; History 185; Political Science 116, 117, 118, 125; Sociology 140, 150, 157. Recommended: Biology 115 or 165.

# Graduate Division

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# **Graduate Division**

# **Organization and Administration**

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

Under the provisions of Section 41001 of the Administrative Code (see the section of this catalog on Admissions), the Graduate Council, through the Graduate Division Office, admits all students to authorized graduate degree curricula, determines their eligibility to continue in such curricula, and, in the cases of unsatisfactory performance, requires students to withdraw from all graduate curricula.

The Graduate Council is the appropriate university authority for the administration of all matters related to graduate degree curricula, 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.

applied fields, and in the professions, including the teaching profession. Doctoral degrees are awarded jointly by the Board of Regents of the University of California and the Board of Trustees of The California State University and Colleges in the names of San Diego State University and the cooperating campus of the University of California.

# **Doctor of Philosophy**

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

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

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

# Master of Arts

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

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Anthropology	
Art	
Asian studios	
Biology	
Chomistru	
Dreamstry	
Drama	
Economics	
Education	
English	
French	
Geography	
German	
Hoalth soiss	
History	
Thistory	
industrial arts	
Latin American st	udies

Music Philosophy Physical education Physical sciences Physics Political science Psychology Radio and television Russian Social science Sociology Spanish Speech communication Speech pathology

and audiology

Linguistics Mathematics

# **Master of Science**

The Master of Science degree is offered in the following fields: Aerospace engineering Geology Astronomy Home economics Biology Mass communications **Business** administration Mathematics Chemistry Mechanical engineering Civil engineering Microbiology Computer science Physics Counseling Psychology Criminal justice Radiological physics administration Social work Electrical engineering Statistics

Master of Business Administration Master of City Planning Master of Public Administration Master of Social Work Admission Procedures

# Matriculation

Any student, holding the baccalaureate degree and wishing to be admitted to San Diego State University for postgraduate study, must apply for admission to the university at the Admissions Office and comply with the regulations of the Admissions Office as stated in the section of this catalog on Admissions.

# **Unclassified Graduate Standing**

Acceptable graduate students are admitted to the university by the Admissions Office with unclassified graduate standing. Admission to the university with unclassified graduate standing does not constitute admission to graduate degree curricula in the Graduate Division.

# **Classified Standing in the Graduate Division**

A student who has been admitted to the university by the Admissions Office with unclassified graduate standing who desires to earn an advanced degree must file an application for admission to an authorized advanced degree curriculum and the Graduate Division. If the applicant meets the requirements of Section 41001 of the *California Administrative Code*, he will be admitted to the graduate curriculum of his choice and to the Graduate Division with *classified graduate standing*. The Graduate Division Office notifies the Registrar to change the status of the student from unclassified to classified standing.

# **Failure to Meet Admission Requirements**

If the applicant fails to meet the requirements for classified graduate standing, he may remain in the university with unclassified graduate standing and enroll in any undergraduate course for which he has the necessary prerequisites, provided facilities and competent instructors are available.

Unclassified graduate students are not eligible to enroll in 200-numbered courses except with permission of the instructor and the Dean of the Graduate Division. All credit earned by an unclassified graduate student is subject to evaluation as to its acceptance in satisfaction of master's degree requirements.

Undergraduate students are not permitted to enroll in 200-numbered courses, except under special circumstances (see section "Concurrent Master's Degree Credit").

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# Withdrawal and Reinstatement

A graduate student who has begun work on a graduate degree and has taken no courses within the last calendar year may be considered to have withdrawn from the degree curriculum. If he wishes to resume his work, he may be required to file an application for readmission to the Graduate Division. He may then be required to comply with regulations and requirements in effect at the time of readmission.

Any student who was not in attendance or on official approved leave of absence during the semester preceding the semester in which he wishes to enroll must apply for readmission to the university.

Any graduate student whose performance is judged to be unsatisfactory by the Graduate Council may be required to withdraw from all graduate degree curricula offered by San Diego State University.

# **Advanced Degree Curricula**

# Requirements for the Doctor of Philosophy

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

# **Requirements for Master's Degree**

The minimum requirements for the Master of Arts degree, the Master of Science degree, the Master of Business Administration degree, Master of City Planning degree, Master of Public Administration degree, and the Master of Social Work degree are established by the Board of Trustees of The California State University and Colleges. Students seeking to enter a curriculum in the Graduate Division leading to these degrees must comply with the admissions procedures described above, be advanced to candidacy, and meet the scholastic, professional and personal standards, including the passing of examinations, required in the Graduate Division.

The Master of Arts, Master of Science, and the Master of Public Administration degrees require 30 semester units of graduate work; the Master of Business Administration degree requires between 30 and 60 units (depending upon the student's background); the Master of City Planning and Master of Social Work degrees are two-year degrees and each requires 56 units of graduate work. At least 30 units of work must be earned in residence at San Diego State University for the M.C.P. degree and at least 24 units for all other master's degrees. All acceptable credit must have been earned within seven years of the date when all requirements for the degree are completed. A grade point average of 3.0 (grade of B on a five-point scale) or better must be earned in (1) all programmed 100-numbered courses required for the removal of undergraduate deficiencies, (2) all programmed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer, and (3) all 100-, 200- or 300-numbered courses taken at San Diego State University concurrently with or subsequently to the earliest course listed on the official master's degree program.

# **Graduate 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 Graduate Division

# Nondegree Curricula

**Preprofessional Programs** 

# **Preprofessional Programs**

# **Programs** Available

Preprofessional curricula, which usually require three or four years of collegiate work, are offered. Curricula outlines of preprofessional study, which are presented on the following pages, meet the typical requirements for admission to professional schools. Students expecting to complete their professional training at other institutions should modify the suggested outlines of study to meet the requirements of the professional schools of their choice. Curricula outlines are presented for predental, prelegal, and premedical programs. Students planning to enter other professional fields, such as agriculture, forestry, optometry, pharmacy, veterinary science, may obtain assistance from faculty advisers in arranging

# Predental Curriculum

The preprofessional programs described here may all 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. A student interested in the dental profession should inform himself regarding the entrance requirements of the specific dental college he hopes to attend and choose courses specified by that college. For additional guidance, the student is invited to consult the predental The curriculum for dental hygiene is essentially the same as for predentistry.

Students ordinarily elect to concentrate in chemistry, biology and zoology with a major in one and a minor in another.

Many dental schools request that letters of recommendation for applicants be prepared by a predental council rather than by individual professors. Such a council exists on this campus and all western dental schools have been so informed. In order to obtain letters from

campus and all western dental schools have been so informed. In order to obtain letters from the council, it is essential that each applicant provide the council with certain information. Obtain the form and instructions from the office of the Department of Biology. This form must be submitted to the Biology Department office by April 1 of the year during which

# **Recommended Course of Study for Predental Curriculum**

Freshman year: Biology 1 and 2, Chemistry 1A-1B, English 5, English 6 or other literature course, Health Science and Safety 21, Mathematics 3 and 4, physical education activities, and Speech Communication 3. Sophomore year: Biology 15, Chemistry 4 or 5, and 12, Mathematics 21, physical education activities, Physics 1A-1B, or 2A-2B and 3A-3B, Psychology 1, social science (American history institutions and ideals US Constitution California state 1, social science (American history, institutions and ideals, U.S. Constitution, California state and local government), and Zoology 60. Recommended for the junior year: Art 119A, Biology 140, 141, 156, Chemistry 112, Psychology 106, 107, and various general education

# Prelegal Curriculum

See the first paragraph under Predental.

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 special 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.

Recommended Course of Study for Prelegal Curriculum Lower division: Business Administration 1A-1B, Economics 1A-1B, Political Science 1 and 2, and a year course in history. Upper division: In the junior and senior years the student will plan his course with the counsel of his adviser in terms of the field of law in which he plans to work, but keeping in mind the entrance requirements and examinations for admission to schools of law. The recommended list below should receive prime consideration by all prelegal students in the selection of courses, though it is to be thought of as flexible

Recommended: Business Administration 126; Economics 131, 135, 170; History 152A-152B, 177A-177B; Political Science 111A-111B, 138, 139A. Additional: Economics 150, History 175C and 179A-179B, Political Science 139B.

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 master of English is essential. The approval of a prelegal adviser is required for all master plans. If the special major pattern of concentration is chosen, a copy of the master plan is to be filed with the Evaluations Office.

# Premedical Curriculum

See the first paragraph under Predental.

The completion of entrance requirements for admission to medical colleges requires three years of undergraduate study. However, four years of undergraduate study are usually completed before admission. The premedical student is strongly advised to select a major in a department leading toward an A.B. degree in liberal arts and sciences. This is most readily accomplished by majoring in biology, chemistry, or zoology, although other departmental majors are acceptable. Specific requirements for these majors are described for each department.

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

# **Recommended Course of Study for Premedical Curriculum**

The following is a list of courses which will satisfy the entrance requirements of most medical colleges. These courses should be included in the program of the premedical student regardless of his selected major. The entrance requirements for medical colleges differ somewhat and specific requirements of the medical school to which the student wishes to apply should be obtained directly from that medical college. For additional information students should consult the premedical adviser on campus.

Lower division: Biology 1 and 2; Chemistry 1A-1B and 12, and 4 or 5; six units of English. to include English 5; 12 units of French or German; Physics 1A-1B, or 2A-2B and 3A-3B.

Upper division: Biology 155, 156 or Zoology 103; Chemistry 112.

Strongly recommended: Biology 15, 101; Latin 1 and 2 or at least Classics 50; Mathematics 21, 22; Zoology 106.

# **Preparation for Other Professions**

Programs leading to professional study in agriculture, architecture, forestry, optometry, pharmacy, theology, veterinary science, and other areas, may be planned for a student who may wish to take some undergraduate work in liberal arts at this university. Since these professional areas frequently require a complete four-year course of study at the institution granting the degree, preprofessional programs are not provided at San Diego State University. If the student wishes to take work at this university, he is advised to consult the catalog of the university to which he expects to transfer to determine requirements before arranging his program. Faculty advisers will assist the student in planning his course of study.

# Professional Curricula

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

# School of Business Administration / 87

# **Departmental Organization**

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

# Accreditation

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

# **Bureau of Business and Economic Research**

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

# **Courses in Business Administration**

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

# The Master's Degree

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

# Departmental Majors and Minors

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

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

Minor in Accounting

DEPARTMENT OF FINANCE Majors with the B.S. degree in the following:

Finance Insurance Real Estate Minors in the following: Finance Insurance Real Estate

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

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

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

# **Graduation Requirements**

The student must complete the requirements listed below for the bachelor's degree. (Refer to the section of this catalog on Graduation Requirements for specific information.)

- 1. A minimum of 128 semester units for the B.S. degree. No less than 40 percent of these units must be in business and economics, and no less than 40 percent must be in courses outside of the areas of business administration and economics.
- 2. At least 24 units earned in residence, half of which must be completed among the last 20 units counted toward the degree.
- 3. A scholastic grade point average of 2.0 (grade of C on a five-point scale) or better in (a) all units attempted, (b) all units in the major, and (c) all units attempted at this college.
- 4. At least 36 upper division units for the B.S. degree.
- 5. One Major.
- 6. Satisfactory completion of competency tests in mathematics, speech and writing, or completion of appropriate courses designated in lieu thereof.
- 7. All regulations established by the college.
- 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 single the division of the second seco
- 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 1A-1B, 30A, 80, 83; Economics 1A and 1B, Economics 2 or Mathematics 19, and Mathematics 20 or 50. (25-27 units.) Students who expect to use any course in business administration or economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. Thirty-nine upper division units to include Business Administration 100, 102, 106, 126, 132, 150, 190 or 191; and Economics 100A or 100B; and 12 units selected from the following: Business Administration 101, 107, 108, 112, 114, 115, 118, 119; Economics 135, 170; and/or one course and only one course each from finance, information systems, management, and marketing.

In addition to units in general education and to upper division units in the major, nine upper division elective units outside of business administration and economics are required. Lower division courses satisfy this requirement when all nine units are in one foreign language.

# **Finance Major**

# With the B.S. Degree in Business Administration

**Preparation for the major.** Business Administration 1A-1B, 30A, 80, 83; Economics 1A and 1B; Mathematics 20 or 50; and Economics 2 or Mathematics 19. (25-27 units.) Students who expect to use any course in business administration or economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. Forty upper division units to include Business Administration 100, 126, 127, 128A, 130, 132, 150, 190 or 191; Economics 100A, 100B, and 135; at least three units selected from Business Administration 129 and 197; and three units of electives selected from business administration and economics courses with consent of the adviser. Fifty-two units (12 of which must be upper division) must be taken outside business administration and economics.





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# **Information Systems Major**

With the B.S. Degree in Business Administration

**Preparation for the major.** Business Administration 1A-1B, 30A, 80, 83, and 84; Economics 1A and 1B; Economics 2 or Mathematics 19; Mathematics 20 or 50. (28-30 units.) Students who expect to use Economics 1A to meet general education requirements must complete compensating units in courses outside business administration and economics.

Major. A minimum of 34 upper division units to include Business Administration 103, 126, 132, 135, 150, 184, 185, 186, 187, 188, and 190; six units of electives selected from Business Administration 128A, 131, 134, 140, 163, 182, 183, and 194A.

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

# **Insurance** Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 1A-1B, 30A-30B, 80, 83; Economics 1A and 1B; Economics 2 or Mathematics 19, and Mathematics 20 or 50. (28-30 units.) Students who expect to use any course in business administration or economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. Thirty-nine upper division units, to include Business Administration 120, 121A, 121B, 123, 124, 126, 132, 150, and 190 or 191, and 12 units selected from Business Administration 103 or 106, 122, 125, 127 or 128A, 131 or 134, 140, 151 or 163, 170, 184, 197, and Economics 135. Fifty-two units (12 of which must be upper division) must be taken outside of business administration and economics.

# **Management Major**

# With the B.S. Degree in Business Administration

The major in management is a flexible program which allows the student to either obtain a broad background in the nature of organizations, their operation, structure, behavior and environment; or concentrate in one of the areas of Human Resources Administration, Production and Operations Management, or Management Science. Students must complete all three of the following requirements.

# (1) Professional Curriculum Within the Major Field

Preparation for the major. Business Administration 1A-1B, 30A, 80, 83; Economics 1A and 1B; Mathematics 19, and Mathematics 20 or 50. (25-27 units.)

Major. Business Administration 103, 126, 132, 134, 135, 140, 145, 149, 150, 190 or 191. (31 units.)

# (2) Areas of Concentration Within the Major Field

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

(a) Business Management: (1) Decision techniques-six units from Business Administration 114, 127, 136, 138, 157, 185, 186, 187, 190 or 191, 192, or Economics 107, and (2) Organization behavior-six units from Business Administration 137, 142, 143, 163, Psychology 105, 121, 123, 125, or Sociology 120, 122, 132, or 148, and (3) Organizational Environment-six units from Business Administration 118, 129, 130, 131, 148, 151, 153, 156, 165, 197, Economics 150, 170, History 175A-175B, Sociology 101, 104.

(b) Human Resources Administration: (1) Six units of Business Administration 142 and 143, and (2) Six units from Business Administration 122, 137, Economics 150, 152, or 153, and (3) Six units from Psychology 105, 121, 133, 152, 175, Sociology 120, 121.

(d) Management Science: (1) Six units of Business Administration 190 or 191, plus 192, and (2) Six units from Business Administration 114, 136, 138, 157, 185, 186, 187, and (3) Six units from Economics 107, 141, Mathematics 134, 135A-135B, 141, 143.

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

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

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

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

(a) Life science, physical science, and social science. A minimum of eight units, to be selected with the approval of the departmental adviser, from *one* department in the College of Sciences or the departments of Geography, Political Science, and Sociology. All upper division courses in the specified departments are suitable as well as the following lower division courses: Chemistry 1A-1B, 4 or 5; Mathematics 51 and 52; Physics 4A-4B-4C.

(b) Humanities and fine arts. A minimum of eight units, to be selected with the approval of the departmental adviser, from *one* department in the College of Arts and Letters (except Economics, Geography, Political Science, and Sociology) or the College of Professional Studies (except Aerospace Studies, Industrial Studies and Physical Education). All upper division courses and the following lower division courses are suitable: Art 5, 50A-50B, 52A-52B, Speech Communication 4, 60 and 64. All courses in a foreign language are acceptable, but at least eight units must be taken in one language.

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

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

# **Marketing Major**

## With the B.S. Degree in Business Administration

**Preparation for the major.** Business Administration 1A-1B, 30A, 80, 83; Economics 1A and 1B; Mathematics 20 or 50; and either Economics 2 or Mathematics 19. (25-27 units.) Students who expect to use any course in business administration or economics to meet general education requirements must complete compensating units in courses outside these areas.

Major. Forty upper division units to include Business Administration 126, 132, 149, 150, 151, 156, 157, 158, and 190; nine units selected from Business Administration 152, 153, 154, 159, 160, 161, 162, 163, 164 and 165; and six units selected from Business Administration 103, 134, 135, 140, 145, 184, 191, and 197. In addition to the upper division units in the major and in general education, 12 upper division elective units outside of business administration and economics are required.

# **Real Estate Major**

# With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 1A-1B, 30A-30B, 80, 83, Economics 1A and 1B, Economics 2 or Mathematics 19, and Mathematics 20 or 50. (28-30 units.)

Students who expect to use Economics 1A to meet general education requirements must complete compensating units in courses outside business administration and economics.

Major. Thirty-nine upper division units to include Business Administration 126, 132, 140, 150, 170, 171, 172, 173, 174, and 190 or 191, Public Administration and Urban Studies 160; and six to seven units selected from Business Administration 100, 106, 107, 120, 121, 153, 175, Economics 135, 142. Fifty-two units (12 of which must be upper division) must be taken outside of business administration and economics.

# Minors

These minors are for students whose majors are outside of business administration. They all require Business Administration 1A-1B.

Accounting: Fifteen units required of which 11 must be upper division, including Business Administration 100.

Business management: Nineteen units required, including Economics 1A and 1B, Business Administration 1A-1B, 132, and six units from Business Administration 134, 135, 140, or 145.

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Employee relations: Nineteen units required, including Economics 1A and 1B, Business Administration 1A-1B, 132, 140, and three units from Business Administration 142, 143, or 145.

Finance: Sixteen units required, including Economics 1A, 1B and 135, and Business Administration 132.

Information systems: Nineteen units required, including Business Administration 83, 84, 185, 186, 187, and Mathematics 20 or 50.

Insurance: Nineteen units required, including Business Administration 30A-30B; 120; 121 or 124; and three additional upper division units in business administration.

Marketing: Nineteen units required, including Economics 1A and 1B, Business Administration 150, and six additional upper division units in business administration.

Production and operations management: Nineteen units required, including Economics 1A and 1B, Business Administration 1A-1B, 132, 135, and three units from Business Administration 136, 137, or 138.

Real estate: Nineteen units required, including Business Administration 30A-30B, 170, and six additional upper division units in business administration.

# **Business Major**

For the Single Subject Teaching Credential

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

# **School of Education**

# Accreditation

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

# Bureau of Educational Evaluation and Research

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

# **Courses in Education**

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

Degrees

# Master's Degree

The Master of Arts degree in education with concentrations in 10 areas and a Master of Science degree in counseling are offered. For further information, refer to the Graduate Bulletin and to the section of this catalog on the Graduate Division.

# **Bachelor's Degree**

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

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

# **New Credentials**

Assembly Bill 122 (Ryan Bill) has changed the credential structure in the State of California. Students who do not complete credential requirements by September 14, 1974, or who are not on a lock list as of December 1, 1973, must meet the requirements of the new credentials offered by Assembly Bill 122. Information on these new credentials is available in the offices of the several departments of the School of Education. The multiple subjects credential (elementary), and the single subject credential (secondary), have been approved by the Commission for Teacher Preparation and Licensing. The following credentials are in a developmental stage.

Specialist Credentials' Early Childhood Reading Bilingual/Cross-Cultural Special Education Services Credentials' Administrative Services Health Services Credential Library Pupil Personnel Services

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

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# Credentials

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

List of Credentials

List of Credentials

School Service Authorized

1. Multiple subjects credential ...... Teach in any self-contained classroom kindergarten through twelfth grade.

..... Teach single subject area in grades K through 12. 2. Single subject credential

# Fisher Credentials'

School Service Authorized

(1) A standard teaching credential

with specialization in:

(a) Elementary teaching ........ Teach kindergarten and grades one through nine

(b) Secondary teaching ............ Teach major and minor in grades seven through twelve

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

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(2) The Community College Instructor Credential

		an occupational or subject matter area which
(3)	A standard designated subjects	appears on the credential document
	credential	Teach trade or technical courses at grade levels
(4)	A standard designated services	
	credential	specified on the credential
(5)	A standard supervision	the second second second second second second second
101		administrative position including school principal
(6)	A standard administration	be for eld such the second vegat hand an and a
	credential	Serve as a district superintendent or in intermediate level administrative positions, including those
		services authorized by the standard supervision
(7)	A restricted credential	Serve as a speech and hearing specialist at all grade levels.

# Admission to Teacher Education

# **Application for Admission**

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

Only students who are able to complete these Fisher credentials by September 14, 1974, or who were on a lock list by December 1, 1973, are eligible for these credentials.

Standards for Admission: Multiple Subjects Credential (Elementary Education)

- 1. Formal application to the education program must be filed sometime after completing 45 units of college work.
- 2. Written recommendations. Applicants will be required to provide two written character references from persons not related to them. These recommendations will be included in the applicant's folder and will be examined by the Admissions Committee.
- 3. Prior experience with children and youth groups. Applicants will provide evidence of having had experience with children and youth groups. Such evidence will consist of a signed (by applicant) statement, describing the experience and including the place and approximate dates of the experience. For applicants not having such experience working with children, a laboratory activity course providing such experiences will be required prior to admission into the professional preparation sequence.
- 4. Successful completion of the Reading Comprehension and Writing Competency Tests. These tests are offered several times each year. Consult the Class Schedule or the bulletin board outside Education 100 for dates and time.
- 5. Health Clearance. To meet the specific requirements for authorization for student teaching, a medical examination must be completed. This examination is in addition to the medical required for admission to the University.
- 6. Interview. 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 2.20 GPA (overall) is required for admission to the program. Once admitted, a 2.20 GPA must be maintained in the professional education courses and in overall college work to remain in the program. Transfer students must have copies of their transcripts forwarded to the Elementary Education Department.
- 9. Planned program appointment. After completion of 45 college units, each student should sign up for an appointment with a faculty adviser to work out a planned program.
- 10. Prerequisite courses. The following lower division courses are required for admission to the program. Admission priority will be given to students who have completed all of the prerequisites.

Health Science and Safety 21, "Principles of Healthful Living"	2	units
Mathematics 10A, "Structure and Concepts of Elementary Mathematics"	3	units
Music 2, "Basic Musicianship for Non-Music Majors"	3	units
Physical Education 53, "Physical Education of Children"	2	units

11. Major. The new credential legislation (Ryan Act) permits a student to use any major listed in the college catalog. The student must, however, demonstrate his knowledge of the content of the subjects commonly taught in the elementary school by examination. Currently, the NTE Common Exam (National Teachers Examination, Common Knowledge Section only) is being administered. Information regarding this test may be obtained through the Test Office.

The recently defined Liberal Studies Major (diversified major) may be selected for the teaching credential. Completion of this major exempts the teacher candidate from the NTE examination. (See the Liberal Studies Information Packet available in Room ED-100.)

# **Standards for Admission:**

Single Subject Credential (Secondary Education)

- 1. A prerequisite course: "The Secondary School," Education 100A.
- 2. Academic achievement: Acceptable GPA, 2.5 overall and 2.75 in the major.
- 3. Satisfactory written recommendations from:
- (a) Instructors in Education 100A.
   (b) Student's major department verifying the student's competency in the major and suitability for the profession.
- (c) Participating teacher or director of school or community facility in field experience.
- 4. Successful completion of the English Proficiency Examination or its equivalent, and

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demonstrated ability to communicate effectively verbally and in writing.

5. Successful clearance of Health Examination.

6. Formal application to the program by the student in the Education 100A class.

7. Absence of criminal conviction which would preclude credentialing.

### New Students Who Seek to Complete a Credential

Teachers with a provisional credential or partial fulfillment of requirements credential who are teaching and working concurrently toward a regular credential may have a program designed to fit their background. Evaluation of college credit completed to date, and arrangements for programming should be made through the Admissions Office of the School of Education.

### Advanced Standing in Teacher Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional education work in residence at this university before recommendation for a credential, regardless of the extent of education work already completed elsewhere.

### **Evaluation of Credits**

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

# **Multiple Subjects Teaching Credential**

# Multiple Subjects (Elementary) - Clear

Persons interested in teaching in the elementary school will typically pursue the multiple subjects credential which authorizes the holder to teach in any self-contained classroom, classrooms in which one teacher is responsible for all the subjects commonly found 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.
- 5. Knowledge of methods of teaching reading.

6. Three years of successful teaching.

# Multiple Subjects (Elementary) - Preliminary

An applicant may be granted a preliminary teaching credential if the applicant has met all the requirements listed above except for completion of the fifth year of study and/or three years of successful teaching experience. Thus, a person whose program allows him to meet these requirements would be eligible for a preliminary credential at the same time he finishes his four-year college program. 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 "full"

# **Description of Interdepartmental Majors** 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

**Option 2.** Liberal Studies with the A.B. Degree in Applied Arts and Sciences The student taking this option selects courses to extend his background in the four multiple

subjects groups of knowledge identified as follows (not more than 30 units may be taken for credit toward this major in any one department or area):

Group A: English (including courses in grammar, literature, composition) and speech. This group includes the following areas: (1) Afro-American Studies (English and speech. only); (2) comparative literature; (3) English, i.e., American literature, British literature, and creative writing; (4) journalism; (5) linguistics; (6) Mexican-American Studies (English and speech only); (7) speech communication, plus (8) speech pathology and audiology. Group B: Mathematics and science (physical sciences or life sciences). This group includes the following areas: (1) geography (1, 2, 4, 5 only); (9) the life sciences is a biology betany

the following areas: (1) geography (1, 3, 4, 5 only); (2) the life sciences, i.e., biology, botany, microbiology, zoology; (3) mathematics; (4) the physical sciences, i.e., astronomy, chemistry, geology, oceanography, physical science, physics; (5) psychology.

Group C: Social sciences. This group includes social science courses only in the following areas: (1) Afro-American Studies; (2) anthropology; (3) economics; (4) family studies and consumer sciences; (5) geography; (6) health science and safety; (7) history; (8) Mexican-American Studies; (9) political science; (10) social welfare; (11) sociology; (12) women's studies.

Group D: Humanities and fine arts (including foreign languages). This group includes the following areas: (1) Afro-American Studies (humanities and fine arts only); (2) art; (3) drama; (4) foreign languages and literatures, i.e., classical and oriental, French and Italian, German and Russian, Spanish and Portuguese; (5) humanities; (6) Mexican-American Studies (humanities and fine arts only); (7) music; (8) philosophy; (9) religious studies; (10) women's studies (humanities and fine arts only).

## Preparation for the major."

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

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

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

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

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

The Liberal Studies Major Option 2 is recommended for students who plan to enter elementary education. It meets all requirements for the multiple subjects/diversified major as specified in the Ryan Bill. Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education.

# **Single Subject Teaching Credential**

# Single Subject (Secondary) - Clear

Persons interested in teaching in the secondary school will typically pursue the single subject credential which authorizes the holder to teach K-12 in any of the subjects indicated below. Attainment of this credential requires:

- 1. A bachelor's degree (or higher) with any major other than education.
- 2. Completion of a fifth year of study (30 units of upper division or graduate units).
- 3. Completion of an approved program of professional education. The required courses are Education 100A, 100B, 100C, 100D, 100E, 100F, 100G, 100H.
- 4. Passage of subject matter examination(s) or waiver thereof.
- 5. Knowledge of methods of teaching reading.
- 6. Three years of successful teaching.
- Includes all General Education requirements except physical education. (Students who plan to enter elementary education must take Physical Education 53 in lieu of one of the physical education activity units for General Education.) Mathematics 10A-10B is required for students who plan to enter elementary education.
- One course in either physical or life science must include a laboratory. Health science and safety is required for students who plan to enter elementary education. Music 2 is required for students who plan to enter elementary education.

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# Single Subject (Secondary) - Preliminary

An applicant may be granted a preliminary teaching credential if all the requirements listed above have been met except for completion of the fifth year of study and/or three years of successful teaching experience. Thus, a person whose program allows him to meet these requirements would be eligible for a preliminary credential at the same time he finishes his four-year college program.

# Acceptable Single Subject Areas

Art **Business** English Foreign Languages Government History Home Economics

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

# **Description of Interdepartmental Waiver Programs** For Single Subject Teaching Credential

# **Physical Sciences Major**

For Secondary Teaching

This major is in the process of being revised. For further information contact the Physical Sciences Department.

# Social Sciences Major

## For Secondary Teaching

This major is in the process of being revised. For further information contact Ann Cottrell, Department of Sociology.

# 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 156, 157, 158 and 159 are offered to students who have been recommended by the following departments: Industrial Studies, Recreation, Business Administration, Family Studies and Consumer Sciences, Criminal Justice Administration, Health Science and Safety, Microbiology, Nursing, Public Administration and Urban Studies, Social Welfare, and Telecommunications and Film. Students may also enroll if they presently hold a partial credential in an occupational area or obtain an endorsement by the Dean of Occupational Education in a California community college. 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 128, Education Building. Admission to Education 316 is based upon selection by the Community College Admissions 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 201 The Community College (3)

Education 223 Educational Psychology: Community College (2)

Education 251 Instructional Methods and Materials Community College (2) Education 316 Directed Teaching (4)

NOTE: Directed teaching can be accomplished only in a community college day assignment.

Teacher assistants or others now teaching in secondary school who cannot enroll in the student teaching sequence are urged to enroll in Education 209, Workshop in Community College Education (2-6).

# **Bachelor of Vocational Education Degree**

This degree is available only to vocational teachers in either the secondary schools or the community colleges who are recommended by the Board of Examiners for Vocational Education. The requirements are the same as those for the A.B. in applied arts and sciences. The specific program to be followed is to be selected with the approval of the Dean of the School of Education after obtaining Board of Examiners approval.

# **School of Engineering**

# Accreditation

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

# **Courses in Engineering**

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

# **Graduate** Program

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

# **Undergraduate** Program

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

Although the profession of engineering presents in practice a variety of specialties, the undergraduate student confines his attention during the first two years of the four-year program to a common pattern of course work in fundamentals. During his junior and senior years he may give outlet to his interest in a broad field of engineering by electing course work in aerospace, civil, electrical or mechanical engineering. Even here, during this upper division work, the student is involved with his fellows in the study of a common core of the engineering sciences; these courses, together with those elected in a specialty field, are taught with an emphasis on universal application and cross-fertilization of thought.

# Requirements for the B.S. Degree in Engineering Graduation Requirements

- 1. A minimum of 132 semester units for the B.S. degree in engineering.
- 2. At least 24 units earned in residence, half of which must be completed among the last 20 units counted toward the degree.
- 3. A scholastic grade point average of 2.0 (grade of C on a five-point scale) or better in (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. A major in engineering as prescribed by the School.
- 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.
- to reprication for graduation.

# Major in Engineering

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

Fall Semester Chem. 1A, General Math. 50, Single Variable Calc Engr. 5, Intro. to Engineering Engl. 5, or Phil. 20	Division 1 Freshman Units 5 5 2 3	Year Spring Semester Chem. 1E, Chem. for Engrs Math. 51, Calc. and Linear Alg Engr. 1 or 20 Engr. 30. Engr. Meas. Anal	Unit. 3 4 2
P.E. Activity	1	Engr. 40, Engr. Prob. Anal. Biol. 1, General Biology P.E. Activity	$   \frac{2}{3}   \frac{1}{17} $

the web the opportunity is select	Sophomor	e Year	
Fall Semester Math. 52, Multivariable Calc. Phys. 4E, Principles Engr. 50A, Engr. Mech. I. Engr. 25, Engr. Materials. American Institutions	Units 4 4 3 3 17	Spring Semester Phys. 4C, Principles Engr. 50B, Engr. Mech. II Engr. 60, Electric Circuits Speech Communication 3 American Institutions Free Elective	Units 4 3 2 3 2

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

# **Upper Division Requirements**

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

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

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

### Aerospace Engineering

Each student with the option in Aerospace Engineering includes in his program a sequence of fundamental courses. In addition the student has the opportunity to satisfy his particular areas of interest by selecting a pattern of study indicated in the sequence below as "electives within major." This pattern may include typical aerospace engineering topics, such as aerospace vehicle design, performance, structural analysis, aerodynamics, and propulsion; some elective opportunity is also available in other disciplines at this university. The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan during the first semester of his junior year.

# School of Engineering / 101

# 100 / School of Engineering

Fall Semester Engr. 115, Fluid Mechanics Engr. 115L, Fluid Mech. Lab Engr. 116, Int. to Solid Mech Core Laboratory Engr. 150A, Low Speed Aerodynamics Engr. 187A, Methods of Analysis	Junior Y Units 3 1 3 1 3 3 3	Year Spring Semester Engr. 150B, High Speed Aerodynamics Engr. 151A, Aero. Struct. Anal. I Engr. 153A, Aero. Flight Mech Engr. 154, Exp. Aerodynamics Engr. 187B, Methods of Analysis General Education	Units 3 3 2 3 3 3
General Education	$\frac{3}{17}$		17
Fall Semester	Senior Units	Year Spring Semester	Units

Fall Semester	
Engr. 151B, Aero. Structural	
Analysis II	
Engr. 190G, Aero. Engr. Appl	
Core Elective	
*Electives within major	
General Education	

ior	Vear
101	Carling Comostor
	Spring Semester
	Engr. 159, Aircraft Stability
	and Control
	Engr. 190H, Aero. Engr. Appl
	*Electives within major
	General Education

3

15

Units

11

17

### **Civil Engineering**

16

All students in the Civil Engineering option pursue a common program of civil engineering fundamentals. In addition the student is provided with the opportunity to select a pattern of study to satisfy his areas of interest. This pattern of study is indicated in the sequence below as "electives within major" and may be selected from available courses in foundation, structural, environmental, transportation, or water resources engineering; computer programming; advanced surveying; engineering economics; and other areas. The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan during the first semester of his junior year.

Contraction of the state of the	Junio	l l ca	Iluita
Fall Semester	Units	Spring Semester	Units
Engr. 116, Introduction		Engr. 115, Fluid Mechanics	3
to Solid Mechanics	3	Engr. 115L, Fluid Mech. Lab	1
Engr. 116L, Solid Mechanics Lab	1	Engr. 120A, Struc. Anal. I	4
Engr. 187A, Methods of Analysis	3	Engr. 128A, Surveying	3
**Engr. 110, Thermodynamics		**Engr. 103, Electronics, Instrum.,	
and Heat Transfer	3	and Elect. Energy Conv	3
General Education	6	Geol. 53, Gen. Geol. for Engrs	1
	16		15

### Senior Year Units Spring Semester

3

17

Engr. 121, Reinf. Concrete ..... \*Electives within major ..... General Education

Approved as part of the student's master plan.

Engr. 122, Soil Mechanics..... Engr. 123A, Water Res. Engr. Engr. 126, Transportation Engr.

\*Electives within major .....

General Education .....

Fall Semester

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

Engr. 120B. Structural Analysis II
Engr. 123B. Water Resources Engineering
Engr 124 Foundation Engineering
Engr. 195. Sanitary Engineering
Engl. 127. Juntary Englisering
Engr. 127. Highway Engineering
Engr. 128B. Advanced Surveying and Photogrammetry
Engr. 129. Highway Materials
Engr. 170. Intermediate Engineering Problem Analysis
Engr. 180. Principles of Engineering Economy
Engr. 190A. Civil Engineering Structural Design
Engr. 196A. Advanced Engineering Topics-See Dept. List
Engr 199 Special Study

### **Electrical Engineering**

All students with the option in Electrical Engineering include in their programs a sequence of courses designed to develop an understanding of the basic principles, laws and methodology of Electrical Engineering. The student, through the proper selection of elec-tives, has the opportunity to develop proficiency in his area of special interest. This pattern of study is indicated in the sequence below as "electives within major" and may be selected from available courses in communications, control systems, microwave circuits, digital sys-tems, power systems and solid state electronics. The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan during the first semester of his junior year.

	Junio	r Year	
Fall Semester Engr. 100, Elect. Energy Conv Engr. 100L., Elect. Energy Conversion Lab Engr. 101, Funds. Engr. Electr	Units 3	*Engr. 102, Elect. and Mag. Fields or Engr. 176, Log. Des. and Sw. Circ. or Engr. 167&167L, Contr. Comp. Lab Engr. 112, Adv. Network Anal Engr. 114, Electronic Circuits	<i>Units</i> 3–4 3
Engr. 101L, Electronics Lab Engr. 111, Network Analysis Engr. 187A, Methods of Analysis General Education	$\frac{3}{3}$ $\frac{3}{17}$	Engr. 114L, Electronic Circ. Lab Core Elective General Education	

	Senior	Year	
Fall Semester *Engr. 102, Elect. & Mag. Fields	Units	Spring Semester **Electives within major	Units 8–10
*Engr. 176 Log. Des. & Sw. Circ. and **Electives within major General Education	9-10 3 3	***Core Elective ***Core Laboratory General Education	3 1 3
constant beaution of the second beaution	15-16		15-17

\*Engineering 102 and 176 are required courses. \*One unit of advanced laboratory in the option is required. \*\*\* Core electives include: E108 or E110 or E118, E115, E116, and E187B. Core laboratory: E108L or E115L or E116L.

# 102 / School of Engineering

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

	6th Sem.	7th Sem.	8th Sem.
Communications and Microwaves	102	135, 134, 134L, 137	133, 139, 174, 139L, 191
Control Systems	167	113L, 168	169
Digital Systems	176	172, 174, 196A, 170	175, 177, 178, 179L, 188
Electronics	102 or 176	134, 134L, 135, 164, 172, 174	162, 175
Power Systems	167, 167L	193	194

### Mechanical Engineering

All students in the Mechanical Engineering option pursue a common program of mechanical engineering fundamentals. In addition the student is provided with the opportunity to select a pattern of study to satisfy his areas of interest. This pattern of study is indicated in the sequence below as "electives within major" and may be selected from available courses in controls, energy conversion, gas dynamics, heat transfer, machine design, materials, thermodynamics, vibrations, and other areas. The student's choice of elective courses must be made in consultation with his adviser and documented by the filing of an approved master plan during the first semester of his junior year.

Fall SemesterUnitsSpring SemesterUnitsEngr. 103, Elect. Energy Conv.3Engr. 115, Fluid Mechanics		Junior	Year	
Engr. 103, Elect. Energy Conv.3Engr. 115, Fluid Mechanics	Fall Semester	Units	Spring Semester	Units
Engr. 107, Materials andEngr. 115L, Fluid Mech. Lab, orProcesses4Engr. 103L, Elect. Engr. Lab1Engr. 108, Thermodynamics3Engr. 140, Heat Transfer, or1Engr. 108L, Thermal Sci. Lab1Engr. 146A, Machine Design3Engr. 116, Int. to Solid Mech.3Engr. 148, Engr. Thermo.4Engr. 187A, Methods of Analysis3Engr. 183, Simul. Engr. Sys.3	Engr. 103, Elect. Energy Conv	3	Engr. 115, Fluid Mechanics	3
Processes       4       Engr. 103L, Elect. Engr. Lab       1         Engr. 108, Thermodynamics       3       Engr. 103L, Elect. Engr. Lab       1         Engr. 108L, Thermal Sci. Lab       3       Engr. 140, Heat Transfer, or       3         Engr. 108L, Thermal Sci. Lab       1       Engr. 146A, Machine Design       3         Engr. 116, Int. to Solid Mech.       3       Engr. 148, Engr. Thermo.       4         Engr. 187A, Methods of Analysis       3       Engr. 183, Simul. Engr. Sys.       3	Engr. 107, Materials and		Engr. 115L, Fluid Mech. Lab, or	11.2
Engr. 108, Thermodynamics3Engr. 140, Heat Transfer, orEngr. 108L, Thermal Sci. Lab1Engr. 146A, Machine Design3Engr. 116, Int. to Solid Mech.3Engr. 148, Engr. Thermo.4Engr. 187A, Methods of Analysis3Engr. 183, Simul. Engr. Sys.3	Processes	4	Engr. 103L, Elect. Engr. Lab	1
Engr. 108L, Thermal Sci. Lab       1       Engr. 146A, Machine Design       3         Engr. 116, Int. to Solid Mech.       3       Engr. 148, Engr. Thermo.       4         Engr. 187A, Methods of Analysis       3       Engr. 183, Simul. Engr. Sys.       3	Engr. 108, Thermodynamics	3	Engr. 140, Heat Transfer, or	a la contra
Engr. 116, Int. to Solid Mech.       3       Engr. 148, Engr. Thermo.       4         Engr. 187A, Methods of Analysis       3       Engr. 183, Simul. Engr. Sys.       3	Engr. 108L, Thermal Sci. Lab	1	Engr. 146A, Machine Design	3
Engr. 187A, Methods of Analysis 3 Engr. 183, Simul. Engr. Sys	Engr. 116, Int. to Solid Mech	3	Engr. 148, Engr. Thermo	4
General Education	Engr. 187A, Methods of Analysis	3	Engr. 183, Simul. Engr. Sys General Education	3

Senior Year

Spring Semester

Engr. 190D, Engineering Applications..... \*Electives within major..... General Education.....

17

Units

17

17

Units

6

14

### Fall Semester

Engr. 140,	Heat Transfer, or
Engr. 146A	, Machine Design
Engr. 145,	Mech. of Machinery
Engr. 190C	, Engr. Applications
*Electives v	vithin major
General Ed	ucation

# Minor in Engineering

The minor in engineering, intended for students in other academic areas of the university, consists of 15 units in engineering, nine units of which must be in upper division courses. The courses must be approved by the Dean of the School of Engineering.

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

# School of Social Work

# Accreditation

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

# **Program and Objectives**

The School of Social Work offers a two-year graduate curriculum leading to the Master of Social Work degree under approval granted by the Trustees of the California State University and Colleges in May, 1963. Students with a bachelor's degree from an accredited college or university can be considered for admission to this program. The School also offers a program of professional education leading to the Master of Science in Social Work degree. Students who have completed the undergraduate social welfare major at San Diego State University, or its equivalent, can be considered for admission to this program. The Chancellor's Office gave its approval for this new degree program on February 12, 1970.

Students who have completed the undergraduate social wenare major at San Diego State University, or its equivalent, can be considered for admission to this program. The Chancellor's Office gave its approval for this new degree program on February 12, 1970. The objectives of the School of Social Work at San Diego State University are to equip students with the essential knowledge, philosophy and basic skills for their responsible practice in the profession of social work. In order to achieve these objectives, the School will assist students: to develop a philosophy which recognizes individual human welfare as the purpose and goal of social policy; to acquire attitudes which will permit the development and maintenance of professional relationships and professional standards; to develop the discipline and self-awareness essential to the professional social worker; to attain a level of competence necessary for professional practice; to acquire knowledge in methods of research in social work; and to accept responsibility for the continued development of their competence in the practice of social work.

For detailed information regarding admission to the School and to its graduate curriculum, see the Graduate Bulletin.

# Courses and Curricula

# **Courses and Curricula**

# **Course Numbering**

Courses numbered from 1 to 99 are lower division (freshman or sophomore) courses; those numbered 100 to 199 are upper division (junior or senior) courses; those numbered 200 to 299 are graduate courses; those numbered 300 to 399 are professional education courses to be taken at the graduate level. Courses numbered X-900/X-999 are those courses offered exclusively in the extension program to meet the professional needs of specific community groups and are listed in the Extension Bulletin only. These courses are not acceptable on advanced degree programs.

# The Unit or Credit Hour

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

# Prerequisites for Undergraduate Courses

Prerequisites for each course are stated in the course description.

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

# Prerequisites for Graduate Courses

Graduate level (200-numbered) courses require, as general prerequisites, graduate standing, and competence in the specified field as indicated by a substantial amount of upper division study in the field or in a closely related field. Unless otherwise specified in the course description, graduate level courses are open to classified graduate students with the permission of the instructor. Unclassified graduate students must obtain the permission of the instructor and the Dean of the Graduate Division before they may enroll in a graduate level course. Undergraduate students are not permitted to enroll in 200-numbered courses except under special circumstances (see section "Concurrent Master's Degree Credit"). Unauthorized enrollment of undergraduate students in 200-numbered courses may be cancelled or, if the course is completed before graduate standing is attained, only undergraduate credit will be earned for the course.

# Semester in Which Courses are Offered

In the listing of courses that follows, Roman numeral I indicates a course offered in the fall semester. Roman numeral II indicates a course offered in the spring semester. An "S" indicates a course offered in the summer.

Following the course title are designations of credit and the semester in which course is offered. Examples:

(3) II	Three units. Offered in fall semester.
(3-3)	Three units. Offered in spring semester.
normally beginning in the fall semester	Three units each semester. Year course

(3-3) I, II 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 (99)**

Any department, school, or college may offer courses under the number 99, 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 applicable on a bachelor's degree of which no more than three units 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

# General College Courses (99 or 199)

General College 99 or 199 provides credit of up to six units (total) applicable to the bachelor's degree by supervised experience in an educationally significant community or university activity. Tutoring, volunteer work for a social service agency, registering or interviewing voters, and serving on an all-university academic committee are examples of such activities. To be eligible to enroll, a student must have completed 12 units of college work and must have a grade point average of C (2.0) or better. An interested student should, before registration, seek out a chairman of a faculty commit-

tee or a faculty adviser for an on-campus organization which sponsors such activities and obtain his written consent to supervise his work and evaluate it for credit purposes. Units thus earned may not apply to a major or minor.

### Honors Courses (166)

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 (199)

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. Graduate Studies (300)

This course is intended solely for those graduate students who have had prior registration in Thesis 299, with an assigned grade symbol of SP. A student is required to register in GS 300 (0 units, Cr/NC) in any semester or term following assignment of SP in Course 299 in which he expects to use the facilities and resources of the university; also he must be registered in the course when the completed thesis is granted final approval.

# Credit/No Credit Courses

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

> **Aerospace Studies** In the College of Professional Studies

# Faculty

Professor: Pralle (Chairman) Assistant Professor: Conner

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.

# 108 / Afro-American Studies

# 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 (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.

# **Aerospace Studies Minor**

The minor in aerospace studies consists of a minimum of 15 units in aerospace studies.

# **Upper Division Courses**

131A-131B. Growth and Development of Aerospace Power (3-3) Three lectures and one hour of leadership laboratory.

Semester I: The nature of war; development of air power; Air Force doctrine.

Semester II: Astronautics and space operations; United States space programs.

133. Field Training Unit (3)

Required for advanced cadets; military orientation and flight familiarization. Credit granted through the Extension Division on basis of individual student application with approval of the Aerospace Studies Department Chairman.

# 141A-141B. The Professional Officer (3-3)

Three lectures and one hour of leadership laboratory.

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.

# 151. Flight Instruction (2) I

Available only to qualified senior AFROTC students.

Ground school is provided by the Aerospace Studies Department. Flight instruction is given by a contracted civilian flying school. Students may qualify for the FAA private pilot

# 199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Consent of Aerospace Studies Department chairman.

# **Afro-American Studies**

Faculty

Professor: Chambers Associate Professor: Meadows

Assistant Professors: Foster, McKinney, Oakes (Chairman), Thomas, Weber Lecturer: Shelton

Offered by Afro-American Studies

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

# Afro-American Studies Major

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

All candidates for the degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A double major is strongly recommended for students majoring in Afro-American studies.

A minor is not required with this major.

Preparation for the major. Afro-American Studies 20, 30, 32 and 50. (12 units.)

Major. A minimum of 24 upper division units to include Afro-American Studies 120 (six units) and 12 units selected from one of the following areas and six units from the remaining two areas.

Area I. Afro-American Studies 130, 131, 140, and 145 or 151. Area II. Afro-American Studies 143, 160, 161, 170 and 180.

Area III. Afro-American Studies 142, 170, 171 and 172.

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

# **Afro-American Studies Minor**

The minor in Afro-American Studies consists of a minimum of 15 units in Afro-American Studies, nine units of which must be in upper division courses.

# Lower Division Courses

M. Fundamentals of Computation (0) I

Basic mathematical concepts. A review in arithmetic and its basic operations. Topics include set notation, first degree equations in one unknown, factoring, graphs and systems of linear equations.

1A. Written Communication for the Afro-American (3) I, II

Precise and expository writing based on selections by noted Black personalities in essays, short stories and selections from longer works.

1B. Intensive Writing (3) I, II

Practice of composition skills utilizing an analytical and critical approach to the ideals and philosophies of Black American writers.

# 2A. Composition and Reading (3) I

Practice of composition skills utilizing analytical and critical writing and readings, as exemplified by various nonfictional works of scholarly Black personalities.

# 2B. Composition and Literature (3) I, II

Outstanding works of fictional writings by Black authors.

# 4. Communications (3) I, II

Practice in speaking, critical listening, reasoning and organizing. Theory and techniques

of communications used to evaluate the effect they have on the lives of Blacks and others.

# 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.

### 7A-7B. Afro-American History (3-3) I. II

American history from a Black perspective. (Satisfies American Institutions requirements.)

### 8. Afro-American Music (3) I, II

Musical contributions of Black Americans from African Music to today. Musical styles, events, significant contributors, and the role of sociocultural variables in the development of the music. In addition to African Music, the blues, spirituals-gospel, jazz and art music will be studied.

# 20. Economics and Management in Urban Development (3) I, II

Principles of economics and management and their application to urban development. May be used for General Education requirement in social sciences.

30. Ethnicity and Social Competence (3) I, II An exploration into the concept of Ethnicity as a positive mental health model for Afro-Americans in the process of identity formation and coping strategies. May be used for General Education requirement in social sciences.

# 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.

# 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.

Anthropology / 111

# 110 / Afro-American Studies

### 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.

### 60. Afro-American Literature (3) I. II

Modern and contemporary writing of Black-American authors. The sociopolitical impact the literature has had upon the Afro-American culture.

### 86. Statistics and Research (3) I

Prerequisite: Afro-American Studies 5.

Fundamentals of research and statistics as used for writing reports, papers, books.

# 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

# 120. Integrative Schemes in Organizational Management (3) I. II

Two lectures and three hours of laboratory.

Prerequisite: Afro-American Studies 20.

An investigation of relevant approaches to administration and organization management in relation to the acquisition of skills for the analysis, development, and management of urban programs. May be repeated with new content. Maximum credit six units.

# 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.

131. The Black Family (3) I, II

Structure and functions of the Black Family in contemporary American Society.

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

Prerequisite: Afro-American Studies 4 (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.

# 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.

# 143. The Structure of Black English (3) I, II

The history and structure of Black English. Its similarities to and differences from standard English dialects: implications for educational policy.

145. Social Psychology (3) I, II Examination of social problems which Blacks encounter and the ways in which they

151. Black Consumer Psychology (3) I, II

Prerequisite: Afro-American Studies 50.

Attitude values and decision making of Black people as consumers. Laws and techniques of manipulating consumers.

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.

161. Afro-American Literature (3) I, II

Prerequisite: Afro-American Studies 60.

Contemporary writings of Afro-Americans. Analysis of themes, techniques, etc., of Afro-American fiction, poetry and drama.

170. Comparative History: Afro-American and African Heritage (3) I, II

Conceptual framework of African history and a comparative study of Afro-American institutions. 171. The Black Man in the Twentieth Century (3) I, II

History of social movements and institutions from 1890 to the present. 172. Black Protest Before the Civil War (3) I, II

Antislavery movement and the resistance of Afro-Americans to the institution of slavery and the culmination of the movement during the Civil War.

180. Twentieth Century Afro-American Jazz (3) I, II

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

# 181. Urban Music Education (3) I, II

Teaching the "culturally different" music student. Investigation of cultural and environmental conditions that might influence the teaching of music to the "culturally different" music student.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

# **American Studies**

(Refer to the section of this catalog on Interdisciplinary Programs.)

# Anthropology In the College of Arts and Letters

### Faculty Emeritus: Rogers

Professors: Anderson, Ezell, Goldkind, Shutler, Watson, Whitney Associate Professors: Himes, Leach (Chairman), Lippold, Pendleton, Staniford Assistant Professors: Dubbs, Greenfeld, Moore, Pillsbury, Rohrl, Sonek, Wagner

### Offered by the Department

Master of Arts degree in anthropology.

Major in anthropology with the A.B. degree in liberal arts and sciences. Minor in anthropology.

# Anthropology Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. Anthropology 1 and 2. (Six units.)

Major. A minimum of 24 upper division units in Anthropology to include Anthropology 101, 102, 103, 104, 167, and nine units of electives selected from Anthropology with approval of the adviser. (Anthropology 100A and 100B may not be counted in the upper division requirements for graduation.)

# Anthropology Minor

The minor in anthropology consists of a minimum of 15 units in anthropology, nine units of which must be in upper division courses (except for Anthropology 100A-100B).

### Lower Division Courses

1. Physical and Cultural Origins of Man (3) I, II

Man's place in nature; fossil evidences of early man; theories of human development; racial variability; the growth and development of man's culture; the rise of civilization. Not open to students with credit in Anthropology 100A. (Formerly numbered Anthropology 1A and 1B.)

2. Introduction to Cultural Anthropology (3) I, II

May be taken before Anthropology 1.

Man's relationship to his environment; types of preliterate society; system of social organization, politics, economics, religion, and language. Not open to students with credit in Anthropology 100B. (Formerly numbered and entitled Anthropology 1C, Introduction to Ethnology.)

4. Archaeological Field Methods (3) I, II

May be taken before Anthropology 1. One lecture and six hours of laboratory.

Application of the methods and techniques of archaeology through excavation, laboratory analysis, and preparation of reports.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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.

# 112 / Anthropology

### **Upper Division Courses**

### 100A-100B. Principles of Anthropology (3-3)

Anthropology 100A: Human evolution as a biocultural process from the perspectives of human paleontology and prehistory. Anthropology 100B: Systems of cultural cognition, family organization, government, and religion in non-Western societies, comparison with analogous Western institutions. Anthropology 100A is not open to students with credit in Anthropology 1. Anthropology 100B is not open to students with credit in Anthropology 2. Anthropology 100A-100B may not be used to fulfill minimal upper division requirements in the anthropology major or minor or the special major.

# 101. Principles of Physical Anthropology (3) I

Prerequisite: Anthropology 1 or 100A. Recommended for majors only.

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. (Formerly numbered Anthropology 102.)

102. Principles of Archaeology (3) II Prerequisite: Anthropology 2 or 100B. Recommended for majors only.

The historic background and basic techniques of archaeological excavation. Methods of site excavation with particular emphasis on California and the Southwest. Principles of culture dynamics utilized in archaeological interpretation. (Formerly numbered Anthropology 103.)

# 103. Principles of Cultural Anthropology (3) II

Prerequisite: Anthropology 2 or 100B. Recommended for majors only.

Primary emphasis on the principles and fundamentals guiding the study of cultural anthropology and its various topics of interest. An overview of the more recent trends within the field will be presented.

# 104. Principles of Anthropological Linguistics (3) I

Prerequisite: Anthropology 1 or 2 or 100A or 100B. Recommended for majors only. The structural nature of language. How languages differ, change and influence each other. The language families of the world. The significance of language for human social life in a variety of cultures. (Formerly numbered Anthropology 120.)

# 115. Primatology (3) I

Prerequisite: Anthropology 1 or 100A.

Description, taxonomy, and comparative anatomy of the anthropoid apes, monkeys, and lesser primates. Primate behavior as a basis for the reconstruction of prehistoric human behavior. Extensive use of the primate collections of the San Diego Zoo.

# 116. Human Paleontology (3) II

Prerequisite: Anthropology 1 or 100A.

Comparative anatomy of fossil man and other primates; evolutionary relationships and cultural associations. (Formerly numbered Anthropology 101.)

# 122. Language in Culture (3) II

The full range of anthropological interests in the study of language, and of linguistic interests in the sociocultural context of language. Designed for students in language in other departments as well as in anthropology

# 126. Field Methods in Linguistics (3) II

(Same course as Linguistics 188.)

Prerequisites: Three units of linguistics or Anthropology 104, 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.

147. Prehistory of South America (3) I, II

Prerequisite: Anthropology 102.

Development of native South American cultures from initial occupation to the 16th century. Emphasis on major historical trends, particularly of the Andean area. 148. Cultures of Europe (3) I, II

Prerequisite: Anthropology 2 or 100B.

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

149. Kinship and Social Organization (3) I

Prerequisite: Anthropology 2 or 100B. Comparison of kinship systems and the structure of social relationships throughout the world. The methodological orientations and theories relating to social organization with

# 150. Ethnological Field Methods (3) I

Prerequisite: Anthropology 152.

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.

# 151-S. Ethnographic Field Research Project (6) S

A six-week course. No other course may be taken concurrently.

Supervised collection of ethnographic data in the field and in a subculture or culture that is foreign to the students.

# 152. World Ethnography (3) I, II

Prerequisite: Anthropology 2 or 100B.

The cultural patterns of representative aboriginal peoples. Industries, arts, social organization and supernaturalism considered with a view to environmental adjustment, historical development and functional interrelation. Ethnological theories reviewed and applied in interpreting illustrative aboriginal societies.

153. Primitive Religion (3) II

Prerequisite: Anthropology 2 or 100B.

Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism. Primitive mentality and the supernatural.

154. Social Anthropology (3) II

Prerequisite: Anthropology 152. The development of social anthropology as a distinct subfield of cultural anthropology. Readings and analysis of functionalism as theory and methodology in the explanation of social and cultural processes.

155. Peasant Society and Culture (3) II

Prerequisite: Anthropology 2 or 100B.

The social organization and culture of present-day small agricultural communities with emphasis on changes brought about by modernization.

# 156. Cultural Change and Processes (3) I

Prerequisite: Anthropology 2 or 100B. 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.

# 157. Mesoamerican Ethnohistory (3) II

Prerequisite: Anthropology 1 or 2 or 100A or 100B.

Aboriginal pre- and post-Conquest civilization of Mexico with emphasis on the developments, changes, and characteristics of aboriginal, mestizo, and creole society in Colonial Mesoamerica; stress on appropriate texts and codices.

### 158. Economic Anthropology (3) II

Prerequisite: Anthropology 2 or 100B.

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.

# 159. Cultural Ecology (3) I

Prerequisite: Anthropology 2 or 100B.

Examination and comparison of the relationships which exist between the natural environment and the sociocultural processes in nonliterate and peasant communities.

# 160. Primitive Technology (3) I

Prerequisite: Nine units of anthropology.

Techniques of tool manufacture, subsistence, shelter, clothing and arts and crafts of nonindustrial peoples.

### 161. The California Indian (3) I

Prerequisite: Anthropology 2 or 100B.

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.

### 162. Cultures of South America (3) II

Prerequisite: Anthropology 1 or 2 or 100A or 100B.

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.

163. Contemporary Latin American Cultures (3) I

Prerequisite: Anthropology 2 or 100B.

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.

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### 164. Urban Anthropology (3) I

Prerequisite: Anthropology 2 or 100B.

Cultural roles of urban centers and processes of urbanization in non-Western, nonindustrial societies of past and present. Urban influence on traditional peasant and primitive peoples of Africa, Asia, and Latin America.

165. Culture and Personality (3) I, II

Prerequisite: Anthropology 2 or 100B. 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.

166. Honors Course (1-3) I. II

Refer to Honors Program.

167. History of Anthropological Theory (3) II

Prerequisite: Anthropology 1 or 2 or 100A or 100B.

The development of theories which lie behind the modern sciences of ethnology and archaeology. Applications of the theory of culture to field methods and interpretation of findings.

# 168. Evaluative Procedures in Culture and Personality (3) II

Prerequisite: Anthropology 165.

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.

# 169-S. Backgrounds of Mexican Civilization (3) S

Mexico's archaeological past and its bearing on historic and recent peoples and cultures. Conflicts between Aztec and Mayan cultures and western civilization. The relationship of Mexican civilization to other Latin American cultures.

170. Archaeology of North America (3) I

Prerequisite: Anthropology 1 or 100A.

Origin of the American Indian and survey of the main prehistoric cultures of the North American continent.

171. Ethnology of North America (3) II Prerequisite: Anthropology 2 or 100B.

Native cultures and the role of environmental and historical factors in North America.

172A. Southwestern Prehistory (3) I

Prerequisite: Anthropology 1 or 100A.

Prehistoric Indian cultures in the American Southwest; ecological adaptations and outside cultural influences.

172B. Southwestern Ethnology (3) II

Prerequisite: Anthropology 2 or 100B.

Indian cultures of the American Southwest in historic times; ecological adaptations, responses to white contact, adaptations to modern American life.

173. Advanced Archaeological Field Methods (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Anthropology 4.

Advanced projects in excavation and stabilization of ruins, archaeological surveys, laboratory analysis and preparation of reports.

174. Prehistoric Archaeology of Europe (3) II

Prerequisite: Anthropology 1 and 2 or 100A and 100B.

The Stone Age, Bronze Age, and Iron Age cultures of Europe, North Africa, and the Middle East. Industries, habitations, and art of peoples antecedent to recorded history. Methods of investigation used in reconstructing prehistoric civilizations.

175. Cultures of Southeast Asia (3) II

Prerequisite: Anthropology 2 or 100B.

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.

176. Early Near and Middle Eastern Civilizations (3) I

Prerequisite: Anthropology 1 or 100A. Anthropological foundations of historic primary civilizations of the Near and Middle East in their early phases of development as revealed by archaeological and other sources.

178. Cultures of Oceania (3) II

Prerequisites: Anthropology 2 or 100B. The aboriginal cultures and people of Melanesia, Australia, Micronesia, and Polynesia in prehistoric, historic, and modern times. 179. Applied Anthropology (3) II

Prerequisites: Anthropology 154 and 156, and consent of instructor.

The application of anthropological concepts to the solution of practical problems of culture change in industry, corporate organization and community development.

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180. Preclassic Cultures of Mesoamerica (3) II

Prerequisite: Anthropology 1 or 100A.

The development of civilization in pre-Columbian Mexico and Central America antecedent to the Tolteca, Classic Maya, and related cultures,

181. Classic Pre-Columbian Civilizations of Middle America (3) I Prerequisite: Anthropology 1 or 100A.

Aboriginal Mexican and Central American civilizations through the Age of Exploration and Conquest. Aztecs, Mixtecs, Zapotecs, Mayas, and related cultures.

182. Post-Conquest Cultures of Middle America (3) II

Prerequisite: Anthropology 2 or 100B.

Aboriginal and mixed cultures of Mexico and Central America in Colonial and recent epochs. Aftermath of Conquest and exploitation.

183. Archaic Hellenic, Aegean, and Italian Cultures (3) II

Prerequisite: Anthropology 1 or 100A.

Anthropological foundations of primary civilizations of Greece, the Aegean, and Italy, in their prehistoric phases of development as revealed by archaeological and other sources. 184. Archaeology of Sub-Saharan Africa (3) I

Prerequisites: Anthropology 1 or 100A. A chronological review of the major archaeological cultures in sub-Saharan Africa. The archaeological evidence for the evolution of man and his culture in Africa will be presented in a conjunctive approach.

185. Cultures of Sub-Saharan Africa (3) I

Prerequisite: Anthropology 2 or 100B.

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.

# 186. Cultures of India (3) II

Prerequisite: Anthropology 2 or 100B.

Indigenous peoples and cultures of India and contiguous areas of South Asia. The development of cultural traditions, social organization, and modern trends.

187. Political Anthropology (3) II

Prerequisite: Anthropology 2 or 100B.

Political processes, institutions, and ideologies in primitive and peasant societies.

188A-188B. Archaeological Laboratory Methods (3-3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 173. Anthropology 188A is a prerequisite to 188B.

Semester I: Application of palynology, paleontology and technologies. Semester II: Practical applications of materials from 188A. Individual laboratory research project required.

189. Topics of Arctic Archaeology (3) I

Prerequisites: Anthropology 1 or 100A, and 102.

Discussion of selected areas, periods or problems in the context of broad considerations of prehistoric cultural development and human ecology throughout the arctic and subarctic regions of North America.

190. Archaeology of East Asia (3) II

Prerequisite: Anthropology 1 or 100A.

A chronological review of prehistoric cultural development and human ecology in East Asia.

191. Chinese Society (3) II

Prerequisite: Anthropology 2 or 100B.

Culture and social organization of Chinese people. Traditional China, overseas Chinese, contemporary Taiwan and Hong Kong, recent social change in Mainland China.

192. Japanese Society (3) I, II

Prerequisite: Anthropology 2 or 100B.

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.

196. Topics in Anthropology (3) I. II

Prerequisite: Nine upper division units in anthropology.

A senior level undergraduate proseminar, topic to be announced in the class schedule. Maximum credit six units.

### 197. Investigation and Report (3) I, II

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.

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

**Graduate Courses** 

### 200. Seminar (3)

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

### 201. Seminar in Physical Anthropology (3)

Prerequisites: Anthropology 1 or 100A and 12 upper division units in anthropology. History and theory in physical anthropology stressing the significant literature on such topics as functional anatomy, human paleontology, population genetics, and primatology.

### 202. Seminar in Archaeology (3)

Prerequisites: Anthropology 1 or 100A and 12 upper division units in anthropology. History and theory in archaeological data collection, analysis, and interpretation.

### 203. Seminar in Ethnology (3)

Brerequisites: Anthropology 2 or 100B and 12 upper division units in anthropology. History and theory in ethnology stressing the significant literature on such topics as cross-cultural comparison, structural-functional analysis and description, personality and culture, and sociocultural change.

### 204. Seminar in Linguistics (3)

Prerequisites: Anthropology 104 or 122 and 12 upper division units in anthropology. History and theory of linguistics stressing the significant literature on such topics as cultural cognition, descriptive linguistics, lexicostatistics, and transformational analysis.

220. Seminar in Regional Anthropology (3)

Prerequisite: Twelve upper division units in anthropology.

Study of a major world region such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. Maximum credit six units applicable on a master's degree.

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

# 222. Historical Linguistics (3)

Prerequisites: Anthropology 104 and 126.

Principles and techniques of historical linguistics, with concentration on the dynamics of linguistic change, comparative linguistics, and historical reconstruction as applied to non-Indo-European languages.

# 233. Social Structure (3)

Prerequisite: Twelve upper division units in anthropology.

A structural and functional approach to the social organization of a wide range of cultures. An examination of theories and generalizations regarding the stability and integration of a wide variety of human societies.

# 255. Culture and Society in the Nahua Area (3)

Prerequisites: Anthropology 1 or 2 and 12 upper division units in anthropology. A course designed to permit concentrated studies of the area and those related to it, based on archaeology, aboriginal records, colonial accounts, and modern studies; and to permit various approaches to such studies.

256. Cultures and Societies in Southern Mesoamerica and Central America (3)

Prerequisites: Anthropology 1 or 2 and 12 upper division units in anthropology

Concentrated studies of ancient civilization in areas of higher development, based on archaeology, aboriginal records, colonial accounts, and recent studies; and to permit various approaches to such studies.

# 257. Classical Nahuatl (3)

Prerequisites: Anthropology 1 or 2 and 12 upper division units in anthropology including Anthropology 157, or 180, or 181; reading knowledge of Spanish recommended.

Nahuatl language study and analysis for translation of 16th-17th century texts, use of ancient and modern grammatical works and vocabularies; reading of manuscripts; relationship of the language to appropriate aspects of Nahua culture. 258. Ethnoscience (3)

Prerequisite: Twelve upper division units in anthropology.

Analysis and comparison of native categories, classifications, and bodies of systematic knowledge as demonstrated in preliterate and literate societies.

# 297. Research (3) Cr/NC

Prerequisite: Advancement to candidacy.

Independent investigation in the general field of the thesis.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study directed thoward the preparation of a paper on a specific problem. Maximum credit six units.

# 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Arabic

# In the College of Arts and Letters

Faculty Lecturer: Jadon

Offered by the Department of Classical and Oriental Languages and Literatures Courses in Arabic.

Major or minor work in Arabic is not offered.

# Lower Division Courses

1. Elementary (4) I

Four lectures and one hour of laboratory. Pronunciation, oral and written drills, essentials of grammar, and introduction to basic texts.

# 2. Elementary (4) II

Four lectures and one hour of laboratory. Prerequisite: Arabic 1. Continuation of Arabic 1.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

103. Readings in Literary Arabic (4) I Prerequisite: Arabic 2

Application of principles of grammar and readings on advanced level in literary Arabic.

104. Readings in Literary Arabic (4) II

Prerequisite: Arabic 103. Continuation of Arabic 103.

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

# Art

# In the College of Professional Studies

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

### Faculty

Emeritus: Andrews, Jackson, Ruocco

Professors: Baker, Baxter, Berg, Bigelow, Dirks, Fisch, Higgins, Hopkins, Lingren (Chairman), Longenecker, Rogers, Swiggett, Tanzer, Wallace

Associate Professors: Bowne, Covington, Groover, Hodge, Hunter, Miller, Orth

Assistant Professors: Austin, Childress, Frick, Moaney, Papworth, Perczel, Peterson, Ray Lecturers: Brownlee, Forster, Gronborg, Heivly, Kimball, Litrownik, Miedzinski, Pendell, Tibbs, Tuttle, Veitzer

### Offered by the Department

Master of Arts degree in art.

Major in art with the A.B. degree in liberal arts and sciences.

Major in art with the A.B. degree in applied arts and sciences.

Minor in art.

Teaching major in art for the single subject teaching credential.

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# Art Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

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

# **Emphasis in Studio Arts**

Preparation for the major. Art 1A, 1B, 2A, 2B, 5, 15A, 16A, 17A, 50A, 50B; Philosophy 1. (33 units.)

Major. A minimum of 24 upper division units in art to include Art 100A, 115A, 116A, 156A, 190; Philosophy 141; and six units selected with the approval of the adviser from Art 106A-106B, 112A-112B, 116B, 117A-117B, 117C, 118A-118B, 120A-120B, 153, 154, 155A, 155B, and 199.

# **Emphasis in Art History**

Preparation for the major. Anthropology 1; Art 50A, 50B, 52A, 52B; French, German or Italian, or a reading knowledge of the language selected. (15 units.)

Major. A minimum of 24 upper division units selected from Art 151A, 151B, 153, 154A, 154B, 155A, 155B, 156A, and 157 or 158; and three units of electives selected with the approval of the department from anthropology, art, history or philosophy.

# Art Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. The major in art may be planned with an emphasis in crafts, environmental design, graphic

communication, painting and printmaking, or sculpture. The programs in environmental design and in graphic communication have a preprofessional orientation supplemented by a strong liberal arts background. Environmental design can lead to interior design or city a strong notati arts background. Environmental design can lead to interior design of the 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 scheels with the worl of teaching the transitions of higher educational experience in graduate schools with the goal of teaching at institutions of higher learning. The preprofessional program in art education prepares the student for teaching in either elementary or secondary schools. The crafts program can be developed to specialize in ceramics, furniture or industrial design, jewelry, textile design and weaving.

A minor is not required with this major. However, in graphic communication an English minor is recommended.

# **Emphasis** in Crafts

Preparation for the major. Art 1A, 1B, 2A, 2B, 50A, 50B, 61, and six units of art electives. (27 units.)

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

# **Emphasis in Graphic Communication**

Preparation for the major. Art 1A, 1B, 2A, 2B, 14A, 50A, 50B; and six units selected from Art 7, 14B, 15A, 16A, 18A. (27 units.)

Major. A minimum of 24 upper division units in art to include Art 114A, 114B-114C, 156A; three additional units of art history; and nine units selected from Art 107, 114D, 191A, 191B,

# Emphasis in Environmental Design

Preparation for the major. Art 1A, 1B, 2A, 2B, 8, 33A-33B, 50A, 50B, 95A, 95B; and three units selected from Art 13, 17A, 19A, 61. (36 units.) Recommended: Art 14A, 18A, 80A; Industrial Arts 21; Family Studies and Consumer Sciences 19, 45.

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

Group I: Art 135A-135B, 156A, 195A, 195C, 195D and six units selected from Art 113A, 133, 135C, 160, 186, 187, 188, 191A, 195B, 195E. Group II: Art 156A, 160, 186, 187, 188, 195B and six units selected from Art 117A, 133, 135A-135B, 195A, 195C, 195D.

# Emphasis in Painting and Printmaking

Preparation for the major. Art 1A, 1B, 2A, 2B, 50A, 50B; and nine units selected from Art 15A-15B, 16A, 16B, 18A, 18B. (27 units.)

Major. A minimum of 24 upper division units in art to include Art 156A; three additional units of art history; and 18 units selected in consultation with the adviser from Art 100A, 100B, 106A-106B, 112A-112B, 115A-115B-115C-115D, 116A-116B,116C-116D, 118A-118B, 120A-120B, 126A, 126B, 126D-126E, 136A, 136B, 136C-136D.

# **Emphasis** in Sculpture

Preparation for the major. Art 1A, 1B, 2A, 2B, 17A-17B, 50A, 50B; and three units selected from Art 13, 15A, 16A, 19A, 61, 70, 80A. (27 units.)

Major. A minimum of 24 upper division units to include Art 117A or 127, 117B, 117C, 156A, 198; three additional units of art history; and six units selected from 100A, 113A, 115A, 116A, 170A.

# Alternate Program for Advanced Degree Preparation

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

# Art Minor

The minor in art consists of a minimum of 15 units in art, six units of which must be in upper division courses.

# Art Major

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Art 1A, 1B, 2A, 2B, 50A, 50B, 61, and six units of electives in Art. (27 units.)

Teaching Major. A minimum of 26 upper division units in Art to include Art 156A; three units of Art History; and twenty units from Group I or Group II in consultation with the Art Education Adviser.

Group I: Seventeen units of one major emphasis area, including Art 175 and 176, 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 175 and 176. (20 units.)

# Lower Division Courses

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

The ordering of two-dimensional space through drawing.

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

Six hours.

Prerequisite: Art 1A.

Drawing of mechanical and natural forms by the use of line and value. Emphasis on proportion and structure. Some quick sketching, gesture and contour drawing, 2A. Design and Aesthetics (3) I. II

Six hours.

Fundamentals of space and color design. Basic course used as a prerequisite for advanced work.

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

Six hours.

Prerequisite: Art 2A.

Continuation of Art 2A. Original work in creative design including projects in three dimensions.

5. Art Orientation (3) I

An illustrated lecture course dealing with aesthetic meaning and a survey of the history of western art. Designed to increase the understanding and appreciation of art.



### 120 / Art 7. Graphic Imagery (3) Six hours. Prerequisite: Art 2A. The organization concepts of design applied to experimental photographic and technical reproductive media, and environmental graphics. 8. The House and Its Environment (3) I, II Architecture, interior design, landscape and city planning for forming man's physical and aesthetic environment. 14A. Beginning Graphic Communication (3) I. II Six hours. Prerequisites: Art 1A and 2B. Creative projects exploring the interrelation of fundamental art principles and design using phonetic symbols and typography. 14B. Intermediate Graphic Communication (3) I, II Six hours. Prerequisite: Art 14A. Typographic and design concepts applied to layout for contemporary media. 15A-15B. Life Drawing (3-3) I, II Six hours. Prerequisite: Art 1B. Art 15A is prerequisite to 15B. Drawing from the nude model. 16A. Painting (3) I, II Six hours. Prerequisite: Art 1B. Pictorial composition and techniques of painting. 16B. Oil Painting (3) I, II Six hours. Prerequisite: Art 16A. Landscape and more advanced composition in color. 17A-17B. Sculpture (3-3) I, II Six hours Prerequisite: Art 2B. Recommended: Industrial Arts 5. Art 17A is prerequisite to 17B. Three dimensional design using varied materials. 18A-18B. Watercolor Painting (3-3) I, II Six hours. Prerequisite: Art 1B. Art 18A is prerequisite to 18B. Composition of still-life and landscape in watercolor. 19A. Ceramics (3) I. II Six hours. Prerequisite: Art 2A. Design and construction of hand-built ceramic forms. 19B. Ceramics (3) I, II Six hours. Prerequisite: Art 19A. Continuation of Art 19A. Introduction to use of the potter's wheel and application of glaze for surface enrichment. 27. Life Modeling-Sculpture (3) I, II Six hours. Prerequisite: Art 2B. Creative experimentation with sculptural forms from the human figure. 33A-33B. Visual Presentation (3-3) I, II Six hours. Prerequisites: Art 1B, 2A. Art 33A is prerequisite to 33B, and Art 18A is recommended. Methods, materials, and tools of the professional environmental designer stressing art principles. (Formerly numbered Art 133A and 133B.) 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. 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 50A. 52A. Japanese Art (3) II A study of the arts of Japan.

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

61. Design in Crafts (3) I, II Six hours. Prerequisite: Art 2B. Visual and structural form in crafts. 70. Beginning Jewelry Design (3) I, II Six hours. Prerequisite: Art 61. Design and fashioning of jewelry. 80A-80B. Weaving (3-3) I, II Six hours. Prerequisite: Art 61. Art 80A is prerequisite to 80B. Structure and design of woven fabrics. 94A-94B. Fashion Imagery (3-3) I, II Six hours. Prerequisite: Art 2A. Art 94A is prerequisite to 94B. Design of original contemporary costumes and the drawing of the fashion image. 95A. The Contemporary House (3) I, II Six hours. Prerequisites: Art 1A, 2A, and 8. Elementary problems in neighborhood planning, house design, interior design and landscaping. 95B. Interior Design (3) I, II Six hours. Prerequisite: Art 33A. Elementary functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume. 99. Experimental Topics (2-4) Refer to the catalog statement on Experimental Topics on page 106. 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** 100A. Advanced Drawing (3) I, II Six hours. Prerequisites: Art 15A and 16A. Drawing with color wherein an objective attitude is taken toward the qualitative aspect of visual subject matter. Objects are studied and represented as visual stimuli rather than as stereotypes. 100B. Advanced Drawing (3) I, II Six hours Prerequisite: Art 100A. Drawing with color wherein objects are represented in such a manner as to include kinesthetic responses. Aesthetic organization of materials is stressed. 105. Classroom Environmental Design (3) I, II Six hours. Development of an understanding for aesthetic environmental concepts as related to the classroom. 106A-106B. Printmaking (3-3) I, II Six hours. Prerequisite: Art 15A. Art 106A is prerequisite to 106B. Woodcut, wood engraving, gesso cut and linoleum. 107. Contemporary Environmental Graphics (3) I, II Six hours. Prerequisite: Art 2A. Art 2B and 14A are recommended.

Study of creative design for contemporary architectural and motivational graphics.

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 8.

110. Advanced Crafts in the Elementary Schools (3) I. II

Six hours.

Prerequisite: Art 2A.

An advanced design-craft course in which the activities, materials and tools employed are appropriate for the elementary grades. Not open to students with credit in Art 61.

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# 111A-111B. Industrial Design (3-3) I, II

Six hours.

Prerequisites: Art 1A and 2B. Art 111A is prerequisite to 111B.

Design of objects for manufacture with reference to their use, materials, and in accordance with factory practices and machine techniques. Practice in the techniques of presentation, working drawings, rendering and perspective and scale models.

112A-112B. Design and Composition (3-3) I. II

Six hours.

Prerequisites: Art 2B and 16A. Art 112A is prerequisite to 112B.

Structure in picture making. The controlled use of line, value, color, and texture to organize the effect of depth, movement, volume, etc., in the recognizable image. Oil technique.

113A. Furniture Design (3) I

Six hours.

Prerequisite: Art 2A. Industrial Arts 51 is recommended.

Study of the principles of design through the making of furniture.

113B. Advanced Furniture Design (3) I, II

Six hours.

Prerequisite: Art 113A.

Advanced individual design: Exploration of materials, process and function. Maximum credit nine units.

113C-113D. Advanced Furniture Design (3-3) I, II

Total credit in Art 13, 113A, 113B, 113C, and 113D limited to nine units. Six hours. Prerequisite: Art 113B. Art 113C is prerequisite to 113D. Advanced individual design; exploration of materials, process and function.

114A. Graphic Communication (3) I. II

Six hours

Prerequisite: Art 14B.

Investigation of design concepts relating to advertising.

114B-114C. Advanced Graphic Communication (3-3) I, II Six hours.

Prerequisite: Art 114A. Art 114B is prerequisite to 114C.

The relation of art structure and the aspects of visual communication. 114D. Problems in Graphic Communication (3) I, II

Six hours.

Prerequisite: Art 114C.

Refinement of personally developed design concepts for visual communication with emphasis on individually directed solutions. The development of a portfolio of professional quality. Maximum of six units selected from 114 series applicable on a master's degree.

115A-115B-115C-115D. Life Drawing and Painting (3-3-3-3) I, II Six hours

Prerequisites: Art 15A and 16A. Art 115A is prerequisite to 115B, 115B to 115C, 115C to 115D.

Drawing and painting from nude and costumed models.

116A-116B. Advanced Painting (3-3) I, II

Six hours.

Prerequisite: Art 16A. Art 116A is prerequisite to 116B. Pictorial composition.

116C-116D. Advanced Painting (3-3) I, II Six hours.

Prerequisite: Art 116B. Art 116C is prerequisite to 116D.

The influence of art media and picture plane on aesthetic organization in representational painting.

117A-117B. Advanced Sculpture (3-3) I, II

Six hours.

Prerequisite: Art 17A. Art 117A is prerequisite to 117B.

Creative design in diverse materials. Maximum of six units selected from 117 series applicable on a master's degree.

117C. Advanced Sculpture (3) I, II

Six hours.

Prerequisite: Art 117B.

The influence of art media and tools on aesthetic organization in sculpture in relief and in the round.

118A-118B. Advanced Watercolor Painting (3-3) I, II Six hours.

Prerequisite: Art 18B. Art 118A is prerequisite to 118B. Composition of still life and landscape in watercolor.

119A. Ceramics (3) I. II Six hours. Prerequisite: Art 19B. Basic methods of forming, decorating, glazing and firing pottery forms with emphasis on the use of the potter's wheel. 119B. Ceramics (3) I. II Six hours. Prerequisite: Art 119A. Continuation of Art 119A. Further development of knowledge, skills and philosophy of ceramics through individual creative projects. 119C. Ceramics (3) I, II Six hours. Prerequisite: Art 119B. Continuation of Art 119B with advanced creative projects. 119D. Advanced Ceramics (3) I. II Six hours. Prerequisite: Art 119C. Study of ceramic design through creative projects of clay forms. 120A-120B. Advanced Design (3-3) I, II Six hours. Prerequisites: Art 1B and 2B. Art 120A is prerequisite to 120B. Advanced work in pure design, two and three dimensional. Reexamination of color theory and design principles. 121. Clay and Glaze Technology in Ceramic Design (3) Six hours. Prerequisite: Art 119B. 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. 126A. Intaglio Printmaking (3) I, II Six hours. Prerequisites: Art 2A and 15A. Art 100A and 115A are recommended. Creative intaglio—etching, drypoint, aquatint, engraving and variations. Emphasis on fine print quality and technical development. 126B. Intaglio Printmaking (3) I. II Six hours. Prerequisite: Art 126A. Advanced creative intaglio. Emphasis on fine print quality and the color process. 126C. The History of Printmaking (3) Irregular Prerequisites: Art 50A and 50B. The history of printmaking from its inception to the present. 26D-126E. Intaglio Printmaking in Color (3-3) Six hours. Prerequisite: Art 126B. 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. 127. Advanced Figurative Sculpture (3) I. II Six hours. Prerequisites: Art 17A and 27. Figurative study with emphasis on individual exploration. 129A-129B. History of Ceramics (3-3) I. II Prerequisite: Art 129A is prerequisite to 129B. Philosophical approaches to design of pottery and techniques as related to contemporary ceramics. Field trips. 133. Environmental Media (3) Two lectures and four hours of laboratory. Prerequisite: Art 33B. The communication of Environmental Design using photography, miniatures, mock-ups, and transfers with terminal emphasis in transparency projection.

135A-135B-135C. History and Theory of Environmental Design (3-3-3) I. II Prerequisites: Art 50A and 50B.

Environmental arts. Semester I: From earliest times to the 15th Century. Semester II: 15th to the 19th Century. Semester III: 19th and 20th Centuries.

### 124 / Art 136A. Lithography Printmaking (3) I, II Six hours. Prerequisites: Art 2A and 15A. Art 100A and 115A are recommended. Creative lithography-stone and plate planographic process. Emphasis on fine print quality and technical development. 136B. Lithography Printmaking (3) Six hours. Prerequisite: Art 136A. Advanced creative lithography-emphasis on the color process and fine print quality. 136C-136D. Lithography Printmaking in Color (3-3) Six hours. Prerequisite: Art 136B Advanced creative lithography printmaking in color. Emphasis on fine print quality in color process and color technology unique to this medium. 146A-146B. Serigraphy (3-3) Six hours. Prerequisite: Art 15A. Art 146A is prerequisite to Art 146B. Techniques of reproducing original prints by means of the silkscreen process. 151A. Pre-Columbian Art of Middle and South America (3) Irregular Prerequisites: Art 50A and 50B. South and Middle American art and architecture from earliest time to the arrival of Spaniards. 151B. Colonial Art of Latin America (3) Irregular Prerequisites: Art 50A and 50B. The art and architecture of Latin America from the colonial period to the present. Field trips included. 152A. The Art of India and Southeast Asia (3) Irregular Prerequisites: Art 50A and 50B. History of the art, architecture, and sculpture of India and Southeast Asia. 152B. The Art of Persia and the Islamic World (3) Irregular Prerequisites: Art 50A and 50B. History of the art, architecture, sculpture and minor arts of Persia and the Islamic World. 153. Ancient Art (3) I Prerequisites: Art 50A and 50B. Development of painting, sculpture, architecture and crafts from prehistoric times to the fall of Rome. 154A. Medieval Art (3) II Prerequisites: Art 50A and 50B. Development of painting, sculpture and architecture from the time of Constantine through the Gothic period. (Formerly numbered Art 154.) 154B. Coptic and Byzantine Art (3) Irregular Prerequisites: Art 50A and 50B. The art of the Eastern Church from the reign of Justinian to the Russian Revolution. 155A. Renaissance Art in Italy (3) Irregular Prerequisites: Art 50A and 50B. Architecture, painting and sculpture of the Renaissance period in Italy. 155B. Northern Renaissance Art (3) Irregular Prerequisites: Art 50A and 50B. Architecture, sculpture, and painting north of the Alps during the Renaissance period. 155C. Baroque and Rococo Art (3) Irregular Prerequisites: Art 50A and 50B. Architecture, sculpture, and painting of the Baroque and Rococo periods. (Formerly numbered Art 155B.) 156A. History of Modern Art (3) I, II Prerequisites: Art 50A and 50B. Development of painting, sculpture, and architecture from the French Revolution to the 20th century. Field trips included. 156B. Contemporary Art (3) Irregular Prerequisite: Art 156A. Current movements in sculpture, painting, graphics, and architecture. 157. The History of American Art (3) Irregular Prerequisites: Art 50A and 50B. Development of painting, sculpture, and architecture from Colonial times to the present.

Art / 125 158. Art of Primitive Peoples (3) Irregular Prerequisites: Art 50A and 50B. Arts of primitive peoples of Africa, South Seas, and the North American Indians and their influence upon the art of the twentieth century. 160. The History of Architecture (3) Irregular Prerequisites: Art 50A and 50B, or Art 5. Architecture from primitive times to the present. 161A-161B-161C-161D. Design in Enamels (3-3-3-3) I, II Six hours. Prerequisite: Art 61. Art 161A is prerequisite to 161B, 161B to 161C, 161C to 161D. Design and production of vitreous enamels. Maximum credit six units applicable on a master's degree. 164. History of Costume (3) Irregular Prerequisites: Art 50A and 50B. The historic origins of costume traced through aesthetic, social and political influences dominant during each period. 166. Honors Course (1-3) I, II Refer to Honors Program. 170A. Beginning Jewelry Design (3) I, II Six hours. Prerequisites: Art 2B and 61. Design and fashioning of jewelry. Not open to students with credit in Art 70. 170B. Jewelry and Metalwork (3) I, II Six hours. Prerequisite: Art 70 or 170A. Design and production of jewelry and hollow ware. 170C-170D. Jewelry and Metalwork (3-3) I, II Six hours. Prerequisite: Art 170B. Art 170C is prerequisite to 170D. Advanced individual problems in jewelry. 175. Problems in Art for Teachers (3) I, II Six hours. Art principles and materials as related to teaching situations. 176. Practicum in Art (2) I Prerequisite: Consent of instructor. Professional course usually taken concurrently with student teaching and covering teaching strategy. 180A-180B. Advanced Weaving (3-3) I, II Six hours. Total credit in Art 80A, 80B, 180A, 180B, 180C, and 180D limited to nine units. Prerequisite: Art 80B. Art 180A is prerequisite to 180B. Advanced problems in fabric design and weave construction including tapestry and rug weaving techniques. 180C-180D. Advanced Weaving (3-3) I, II Six hours. Total credit in Art 80A, 80B, 180A, 180B, 180C, and 180D limited to nine units. Prerequisite: Art 180B. Art 180C is prerequisite to 180D. Advanced individual problems in weaving. 181. Nonwoven Textile Construction (3) I, II Six hours. Prerequisite: Art 61. Textile structures with an emphasis on nonloom techniques. 182. Textile Design (3) Six hours. Prerequisite: Art 61. 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. 186. Synergetic Environments (3) Two lectures and four hours of laboratory. Prerequisite: Art 195B. Synthesis of materials, space, sound and light using exploratory methods in full scale projects.

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187. Environmental Prototypes (3) Two lectures and four hours of laboratory. Prerequisite: Art 195B. Research and development of creative architectural concepts with emphasis in space enclosure systems and cybernetics. 188. Environmental Theory (3) Prerequisite: Art 8 or 108 Survey of alternative solutions to the problem of design of the physical environment. 190. Principles and Elements of Visual Aesthetic Organization (3) Three hours. Prerequisites: Senior standing and Art 5. Visual aesthetic materials and the psychological principles involved in aesthetic organization. 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. 191B. Gallery Exhibition Design (3) I, II Six hours. Prerequisite: Art 191A. Advanced problems in the theories and techniques of gallery exhibition design. 193A-193B. Drawing and Illustration for Graphic Communication (3-3) I Six hours. Prerequisites: Art 2A and 115A. Art 193A is prerequisite to 193B. 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. 194A-194B. Advanced Fashion Imagery (3-3) I, II Six hours. Prerequisite: Art 2A. Art 94B is recommended. Art 194A is prerequisite to 194B. 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. 195A. Residential Interior Design (3) I, II Six hours. Prerequisites: Art 95A and 95B. Survey, analysis and conceptual design methods of residential interiors stressing materials, equipment, components and structural detailing. 195B. Environmental Design (3) I, II Six hours. Prerequisite: Art 195A. Survey, analysis and design synthesis of problems of more complexity, through interiors, to landscape, to architectural planning and, finally, concern for city design. 195C. Professional Methods of Interior Design (3) I, II Six hours. Prerequisite: Art 195A. Techniques and analyses of specification writing, estimating, contractual agreements, budget studies and supervision of professional interior design projects. 195D. Contract Interior Design (3) I, II Six hours. Prerequisite: Art 195C. Projects in nonresidential architectural interiors involving space planning systems analysis, specification writing, equipment and materials appropriate to commercial functions. 195E. Interior Design Practicum (3) Nine hours of laboratory. Prerequisite: Credit or concurrent enrollment in Art 195C. Field experience with local professional interior designers in client relationships, business procedures, supervision of subcontracted work and installation, and execution of contracts. 196A-196B. Visual Communication Media (3-3) I, II Six hours. Prerequisite: Art 114A. Art 196A is prerequisite to 196B. Experimental, creative and practical exploration of contemporary communication as related to magazine and editorial layout. Production of a student designed limited edition.

Art / 127 197. Advanced Graphic Imagery (3) I, II Six hours. Prerequisite: Art 7. Investigation of experimental photographic and technical reproductive media. Maximum credit six units. Maximum credit three units applicable on a master's degree. 198A. Senior Project (3) I, II Prerequisite: Consent of the instructor. Investigation in art. Formal presentation of project. (Formerly numbered Art 198.) 198B. Senior Investigation and Report in Art History (3) I. II Prerequisites: Six upper division units in art, and consent of the instructor. Individual research into areas of art history not covered by regular courses. 199. Special Study (1-3) I, II Individual study. Maximum credit six units. Prerequisite: Consent of instructor. **Graduate Courses** 206A-206B. Printmaking (1-3) (1-3) Two hours for each unit of credit. Advanced creative work in selected printmaking media based upon the analysis of the history and philosophies of printmaking from its inception through contemporary concepts. Maximum credit six units applicable on a master's degree. 214. Graphic Communication (1-3) Two hours for each unit of credit. Prerequisite: Art 114D. Advanced individual study in graphic design. Maximum credit six units applicable on a master's degree. 216A-216B. Painting (1-3) (1-3) Two hours for each unit of credit. Prerequisites: Art 112B and 116B. Aesthetic organization of selected visual subject matter in the medium of color in oils. Maximum credit six units applicable on a master's degree. 217A-217B. Sculpture (1-3) (1-3) Two hours for each unit of credit. Prerequisites: Art 117C. Aesthetic organization of selected subject matter in the media of sculpture. Maximum credit six units applicable on a master's degree. 219A-219B. Crafts (1-3) (1-3) Two hours for each unit of credit. Prerequisite: Six upper division units in crafts. Advanced creative work in selected craft media. Maximum credit six units applicable on a master's degree. 221. Advanced Clay and Glaze Technology in Ceramic Design (3) Six hours. Prerequisite: Art 119B. Experimentation with the use of ceramic material and techniques as an integral part of the design process. Maximum credit six units applicable on a master's degree. 222. Art Education Colloquium (3) Prerequisite: Fifteen upper division units in art. Historic and current art education philosophies. 270. Seminar in Jewelry and Metalwork (3) Prerequisite: Art 170A. Problems in the design and execution of works in precious metals. Projects will be determined by the individual student in conference with the instructor. Maximum credit six units applicable on a master's degree. 280. Seminar in Textile Design (3) Prerequisite: Art 180A. Problems in textile design and technology. Projects will be determined by the individual student in consultation with the instructor. Maximum credit six units applicable on a master's

290. Bibliography and Research Methods (2)

degree.

Introduction to research methods and materials, compiling of a specialized bibliography, preparatory to writing a master's thesis.

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291. Seminar in Creative Art (3)

Independent research in specified areas including the presentation of a paper with its oral defense.

Each course may be taken to a maximum of six units. Maximum credit six units of 291 applicable on a master's degree.

- A. Seminar in Painting
- B. Seminar in Sculpture C. Seminar in Printmaking
- D. Seminar in Ceramics
- E. Seminar in Crafts
- Seminar in Graphic Communication
- G. Seminar in Environmental Design
- 292A. Seminar in Ancient Art (3)
- Prerequisites: Art 50A and 50B.

Studies in problems of the development of art styles or important artists within broad limits of ancient art.

- 292B. Seminar in Medieval Art (3)
- Prerequisites: Art 50A and 50B.

Studies in problems of the development of art styles or important artists within broad limits of medieval art.

292C. Seminar in Renaissance Art (3)

Prerequisites: Art 50A and 50B.

Studies in problems of the development of art styles or important artists within broad limits of renaissance art.

- 292D. Seminar in Baroque and Rococo Art (3)
- Prerequisites: Art 50Å and 50B.
- Studies in problems of the development of art styles or important artists within broad limits of baroque and rococo art.
- 292E. Seminar in Modern Art (3)
- Prerequisite: Art 156A.

Studies in problems of the development of art styles of important artists within broad limits of modern art.

# 292F. Seminar in Primitive Art (3)

Prerequisite: Art 158.

Studies in problems of the development of art styles or important artists within broad limits of primitive art.

- 294A-294B. Seminar in the Principles of Design in the Space Arts (3-3)
- Prerequisite: A semester course in art appreciation.
- An intensive study of the activity of creative expression and aesthetic appreciation in the area of visual experience. The aesthetic analysis of original works of art.

# 295. Creative Environmental Design (1-3)

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

# 298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisite: Consent of the staff; to be arranged with department chairman and the instructor.

299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for a master's degree.

# Astronomy In the College of Sciences

### Faculty

Emeritus: Huffer, Smith

Professors: Daub, Nelson (Chairman), Schopp, Young Associate Professor: Angione Assistant Professor: Talbert

# Offered by the Department

Master of Science degree in astronomy.

Major in astronomy with the A.B. degree in liberal arts and sciences. Major in astronomy with the A.B. degree in applied arts and sciences. Minor in astronomy.

# **Astronomy Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Preparation for the major. Astronomy 1, 9; Physics 4A-4B-4C. (16 units.)

Major. A minimum of 24 upper division units to include Astronomy 104A-104B, 112A-112B; and Physics 100A-100B, 102A-102B. Recommended: Astronomy 170; Physics 103, 106, 175, 190.

Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics to include Mathematics 50, 51, 52 and either 118A-118B, or 119 and three additional units of upper division mathematics. Recommended: Mathematics 135A, 135B, 170; Engineering 188.

# **Astronomy Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements on page 60 of this catalog.

Preparation for the major. Astronomy 1, 9; Physics 4A-4B-4C. (16 units.)

Major. A minimum of 24 upper division units to include Astronomy 104A-104B, 112A-112B, 198A, 198B; and Physics 100A-100B, 102A. Recommended: Astronomy 170: Physics 102B, 103, 106, 175, 190.

Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics, to include Mathematics 50, 51, 52, and either 118A-118B, or 119 and three additional units of upper division mathematics. Recommended: Mathematics 7, 135A, 135B, Engineering 188.

# Astronomy Minor

The minor in astronomy consists of a minimum of 15 units in astronomy, nine units of which must be in upper division courses.

# Lower Division Courses

1. Descriptive Astronomy (3), I, II

Methods of astronomy and of the physical nature of members of the solar system, our galaxy and other galaxies. Telescopes will be used for occasional observations. Not open to students with credit in Astronomy 50.

9. Practice in Observing (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Astronomy 1 or 50.

A course designed to supplement Astronomy 1. The course will include constellation study, use of astronomical coordinates, and descriptive observations of celestial objects with telescope.

12. Elementary Navigation (3) I

Prerequisite: Astronomy 1 and 9 recommended.

Compass corrections, time, line of position, use of celestial coordinates, tables such as H.O. 214 for the solution of astronomical triangles, etc.

30A-30B. Survey of Literature in Astronomy (1-1) I, II

Prerequisite: Astronomy 1. Readings in current developments in astronomy.

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### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

103. Astronomical Optics (3) II

Two lectures and three hours of laboratory

Prerequisites: Physics 4C, or Physics 2B and 3B.

Theory and applications of optical instruments used in astronomy. In the laboratory the students are required to complete an approved project in optical instrumentation.

# 104A-104B. Advanced Astronomy (3-3)

Prerequisites: Astronomy 1 and 9 and credit or concurrent registration in both Mathematics 51 and Physics 4C.

Problems in practical astronomy, such as atmospheric refraction, proper motion, photographic and photoelectric photometry, solar system astrophysics, and stellar dynamics. 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, etc. 112A-112B. Astrophysics (3-3)

Prerequisites: Astronomy 1 and Physics 4C. Astronomy 112A is prerequisite to 112B.

An application of modern physics to a study of the sun and the stellar system. A large part of this course will deal with the application of spectroscopy to the study of celestial objects.

166. Honors Course (1-3) I. II

Refer to Honors Program.

# 170. Astrophysical Spectroscopy (3)

Prerequisites: Mathematics 52 and credit or concurrent registration in Astronomy 112A. Theory of atomic spectra and atomic structure leading to interpretation of astronomical spectra. Optics of spectrograph design; line identification, spectral classification, radial velocity measurement, and line profile analysis.

# 180. Celestial Mechanics (3) I. II

Prerequisite: Mathematics 52.

The problem of two bodies based on the solutions of differential equations using Newtonian mechanics. Potential theory; geometrical interpretation of perturbations; calculation of planetary positions.

# 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.

# 198A. Senior Project (1) I

One lecture-discussion period.

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

### reports.

198B. Senior Project (2) II

Six hours of laboratory.

Prerequisite: Astronomy 198A.

Laboratory work, progress reports, oral and written reports.

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

# Graduate Courses

# 200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

An intensive study in advanced astronomy, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree. 210. Binary Stars (3)

Prerequisite: Astronomy 112B.

An intensive study of visual, spectroscopic, and eclipsing binaries, including the determination of orbits.

# 220. Galactic Structure (3)

Prerequisite: Astronomy 112B.

Types, movements and characteristics of stars in the galaxy and a similar study of extragalactic structure.

225. Extragalactic Structure (3)

Prerequisite: Astronomy 112B.

The individual and collective properties of normal and peculiar galaxies. Topics include classification, spectra, masses, luminosity distributions, distance indicators, clustering, and redshifts.

230. Stellar Interiors (3)

Prerequisite: Astronomy 112B.

Structure of the interior of stars including the details of the reactions by which energy is obtained and the evolution of stars.

### 240. Interstellar Matter (3)

Prerequisites: Astronomy 112B and Mathematics 119.

Interstellar absorption and polarization, theory of interstellar grains, physics of a low density gas in a dilute radiation field, nebulae, interstellar absorption lines, dynamics of the interstellar medium, and radio observations of the interstellar medium.

# 250. Stellar Atmospheres (3)

Prerequisite: Astronomy 112A.

Emission and absorption of radiation, continuous spectra, spectral lines, modal stellar atmosphere calculations, and non-L.T.E. problems.

297. Research (1-3) Cr/NC

Prerequisite: Classified graduate standing.

Research in one of the fields of astronomy. Maximum credit six units applicable on a master's degree.

# 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

# 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Athletics

### In the College of Professional Studies

### Faculty

Professor: Karr (Chairman)

Head Coaches: Davis, Hill, Gilbert, Templeton Coaches: Dietz, Kofler, Madison, Matson, Tollmer, Zampese Coaching Specialist: Vezie

# Offered by the Department

Courses in Athletics. Major or minor work in athletics is not offered.

### Lower Division Courses

99. Experimental Topics (2-4) I, II

Refer to the catalog statement on Experimental Topics on page 106. 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** 

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

180. Intercollegiate Sport Practicum (2-3)

Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures for varsity team members. A sport may be taken only once for credit in Athletics 180 and/or 181. (Formerly numbered and entitled Physical Education 180, Theory and Practice of Intercollegiate Sports.)

Subject fields of 180 are as follows:

0	ffered 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)

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# 132 / Biology

# 181. Competitive Sport Practicum (2-3)

Laboratory experience in field of interest, with emphasis on skill, rules, and organizational procedures for athletic coaching minors. A sport may be taken only once for credit in Athletics 180 and/or 181.

Subject fields of 181 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) Golf (2) Rowing (2) K Tennis (2) L Track (3) M Volleyball (2)

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

# Biology

# In the College of Sciences

Faculty

Professors: Baer, Brandt, Clark, Collier, Cooper, Cox, Farris, Flittner, Ford, Hazen (Chairman), Johnson, McBlair, Miller, Neel, Parsons, Ratty, Rinehart, Shepard, Sloan, Taylor Associate Professors: Awbrey, Daugherty, Diehl, Ebert, Futch, Hurlbert, Krisans, Paolini, Sanders, Schapiro, Thwaites, Zedler, P.

Assistant Professors: Barnett, Davis, Hays, Zedler, J. Lecturer: Dukepoo

# Offered by the Department

Doctor of Philosophy degree in genetics and in ecology.

Master of Arts degree in biology.

Master of Science degree in biology.

Major in biology with the A.B. degree in liberal arts and sciences. Major in biology with the A.B. degree in applied arts and sciences. Major in biology with the B.S. degree in applied arts and sciences. Minor in biology.

Curricula which prepare for the fields of dentistry, conservation, fisheries, marine biology, medicine, veterinary medicine, and wildlife.

Single subject teaching credential in life sciences in area of biology.

# **Biology Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. Students must choose French, German, or Russian to meet the foreign language requirement for graduation. A minor is not required with this major.

Preparation for the major. Biology 1, 2 and 15; Chemistry 1A-1B and 11 or 12; Mathematics 21 and 22; Physics 1A-1B, or 2A-2B and 3A-3B, or 4A-4B-4C. (35-39 units.)

Major. A minimum of 24 upper division units to include Biology 101, 110 and 155 (to be taken in the junior year); an advanced course in the biological sciences for which Biology 101, 110 or 155 is prerequisite; Biology 190 or 191 or 195; and electives from natural science selected with the approval of the adviser.

# **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 All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. In addition students must complete 12 units of a single foreign language (chosen from French 1, 2, and 3 or 8A-8B; or German 1, 2, and 3 or 8A-8B; or Russian 1, 2, and 3 or 8A-8B), or equivalent knowledge demonstrated by a test of reading knowledge administered by the foreign language department concerned in A minor is not required with this major.

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Preparation for the major. Biology 1, 2 and 15; Chemistry 1A-1B and 11 or 12; Mathematics 21 and 22; Physics 1A-1B, or 2A-2B and 3A-3B, or 4A-4B-4C. (35-39 units.)

Major. A minimum of 24 upper division units to include Biology 101, 110 and 155 (to be taken in the junior year); an advanced course in the biological sciences for which Biology 101, 110 or 155 is prerequisite; Biology 190 or 191 or 195; and electives from natural science selected with the approval of the adviser.

# **Biology Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Biology 1, 2 and 15; Chemistry 1A-1B and 11 or 12; Mathematics 21 and 22; Physics 1A-1B, or 2A-2B and 3A-3B, or 4A-4B-4C. (35-39 units.)

Major. A minimum of 36 upper division units to include Biology 101, 110 and 155 (to be taken in the junior year); an advanced course in the biological sciences for which Biology 101, 110 or 155 is prerequisite; Biology 190 or 191 or 195; and electives from natural science selected with the approval of the adviser.

# **Biology Minor**

The minor in biology consists of a minimum of 16 units in biological sciences to include Biology 1 and 2, and nine upper division units in biological sciences selected with approval of the biology adviser.

# Biology

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in life sciences which includes the area of biology are being revised. For further information consult the department,

### Lower Division Courses

1. General Biology (3) I, II

Prerequisites: None; concurrent registration in Biology 2 recommended. A beginning course in biology stressing processes common to living organisms.

2. General Biology Laboratory (1) I, II

Three hours of laboratory. Prerequisite: Credit or concurrent registration in Biology 1.

A laboratory course in biology stressing processes common to living organisms.

- 4. Natural History of Plants and Animals (3) I. II
- Two lectures and three hours of laboratory. Prerequisite: Biology 1.

An introduction to plants and animals in relation to their environments and to one another. with emphasis on local forms and their habitats.

### 9. Human Physiology (5) I, II

Three lectures and six hours of laboratory.

Prerequisites: Zoology 8 or 60; Chemistry 2A and 2B.

Functions of the human body; emphasis on the circulatory, muscular, and nervous systems. Not open for credit to students with credit for Biology 140.

### 15. Introduction to Quantitative Biology (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Biology 1, 2, and Mathematics 21

Methods and experience in defining and solving quantitative problems in biology, including the design of experiments, and parametric and nonparametric statistical techniques.

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.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101. Cellular Physiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 15; Chemistry 1A-1B, and 11 or 12; Physics 1A-1B, or 2A-2B and 3A-3B, or 4A-4B-4C.

Physiological processes at the cellular level.

109. Regional Field Studies in Biology (1-3)

One- to three-week periods during vacations and summer sessions. Prerequisites: At least 12 units in the biological sciences, including Biology 1 and 2, and consent of instructor. Application for collecting permit must be made at least six weeks before class begins at Bureau of Marine Sciences (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.

110. Ecology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 15 and Chemistry 1A-1B.

Relationships between organisms and the environment; field study in local marine, fresh water, mountain, chaparral, and desert habitats.

111. Aquatic Biology (4) I, II
 Two lectures and six hours of laboratory.
 Prerequisites: Biology 15 and 110; Chemistry 1A-1B.
 Biological, chemical and physical considerations of inland waters.

112. Fisheries Biology (3) II Two lectures and three hours of laboratory. Prerequisite: Biology 110.

Fisheries of commercial importance. The dynamics of exploited populations.

113. Biological Oceanography (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Biology 110, Zoology 50, Physics 2A. Application for collecting permit must be made at least six weeks before class begins at Bureau of Marine Sciences (AS-111).

Ecological concepts as applied to pelagic and benthic marine organisms and their environment. Field and laboratory experience in oceanographic techniques, particularly the coastal environment.

114. Advanced Ecology (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Biology 110. The ecology of individuals, populations, or communities. May be repeated with new content. Maximum credit six units applicable on a master's degree.

115. Conservation of Wildlife (3) I, II Prerequisite: Biology 1.

Plant and animal resources with emphasis on their conservation and intelligent use.

121. Systems Ecology (5) I, II Four lectures and three hours of laboratory.

Prerequisites: Biology 110 and consent of instructor.

Provides a foundation in the theories and techniques necessary for a systems approach to ecology, including computer programming and topics in applied mathematics useful in 122. Environmental Measurement (3) I, II Two lectures and three hours of laboratory.

Prerequisites: Biology 110 and consent of instructor.

The utilization of electronic equipment to record ecological data under field conditions, including field power supplies, effects of fluctuations in environmental conditions, types of sensors, amplifiers and data recorders, and the interfacing of components. 123. Simulation of Ecological Systems (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 121 and consent of instructor.

Properties of different types of models, Monte Carlo methods, the design of simulated experiments, ways of evaluating models, the use of simulation studies as a means of guiding research. The computer will be extensively used.

140. Principles of Human Physiology (3) I, II Prerequisite: Biology 1 or Zoology 8.

Principles of human physiology. Body maintenance and nerve and muscle physiology. Not open to students with credit in Biology 9. (Formerly numbered Biology 22.)

141. Human Physiology Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 140.

Laboratory work in human physiology. Not open to students with credit in Biology 9. (Formerly numbered Biology 23.)

142A-142B. Comparative Animal Physiology (4-4) I. II

Two lectures and six hours of laboratory.

Prerequisites: Biology 101 and consent of instructor. Application for collecting permit for 142A must be made at least six weeks before class begins at Bureau of Marine Sciences (AS-111)

Semester I: Feeding and digestion, blood and circulation, nutrition, respiration and metabolism, excretion and osmoregulation. Semester II: Receptor, effector, and integrative systems. In both semesters, consideration of function ranges from molecular to organismal levels. All major phyla are considered. Individual laboratory research. (Formerly numbered Biology 142.)

144. Comparative Endocrinology (3) I, II

Prerequisite: Biology 101, Botany 130, Microbiology 105, or Zoology 140. Recommended: Chemistry 115A-115B or 116A-116B; Biology 142B.

Endocrine mechanisms at cellular, organismic, and population levels in plants and animals.

144L. Comparative Endocrinology Laboratory (2) II

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 144.

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.

148. Photophysiology (3) II

Prerequisite: Biology 101.

Bioluminescence and the physiological effects of visible and ultraviolet radiations on plants and animals.

148L. Photophysiology Laboratory (1) II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 148.

The generation, measurement and control of visible and ultraviolet radiations, and the measurement and analysis of selected biological effects of these radiations.

150. Radiation Biology (3) I, II

Prerequisites: Biology 1 or equivalent; Physics 2A-2B and 3A-3B. Recommended: Chemistry 1A-1B, Biology 101 and Physics 121. Principles underlying radiological reactions of ionizing radiations. Effects of ionizing

radiations at the biochemical, cell, organ, and organism levels.

150L. Radiation Biology Laboratory (2) I, II

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 150.

The laboratory determination of the effects of ionizing radiation on biological systems.

151. Radioisotope Techniques in Biology (3) I, II

One lecture and six hours of laboratory.

Prerequisites: Biology 15; Chemistry 1A-1B; Physics 1A-1B, or 2A-2B and 3A-3B. Recommended: Chemistry 4 or 5 and Biology 101.

The principles and application of radioisotopes in biology. Radionuclide measurement, safe handling, tracer and radioautography techniques.

### 155. Genetics (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 15.

Principles of plant and animal genetics with experiments and demonstrations illustrating the mechanisms of heredity.

156. Developmental Biology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 155 and Chemistry 11 or 12. Recommended: Biology 101. Analysis of development with emphasis on embryonic differentiation.

157. Cytogenetics (4) I

Two lectures and six hours of laboratory.

Prerequisite: Biology 155.

The physical basis of heredity. Study of the chromosomes and chromosome behavior in relation to problems in heredity and evolution.

158. Human Genetics (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 155.

Genetics as related to human biology, with consideration of the applied fields of medical genetics, genetic counseling, and population studies.

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# 159. Human heredity (3) I, II

Selected principles of human inheritance with emphasis on relationships to other fields of human studies. Not open to students with credit in Biology 155 or 158 or to biology majors. 160. Evolution and Population Genetics (4) I, II Two lectures and six hours of laboratory.

Prerequisite: Biology 155.

Theory of evolution and modeling of genetic systems.

### 161. History of Biology (3) I, II

Prerequisite: A college course in biology.

Lectures and reports tracing scientific development of biology with emphasis on the influence of personalities and trends of the times. Not more than three units in the history of biology may be counted for graduate credit.

# 162. Source Material in the History of Biology (3)

Prerequisite: Biology 161.

A study of original papers of significance to the history of biology. Not more than three units in the history of biology may be counted for graduate credit.

163. Microbial Genetics (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 155.

The design, methods and execution of research in microbial genetics.

165. Biology of Natural Populations (3) I, II

Prerequisite: A college course in biology.

The relation of modern concepts of genetics, ecology and physiology to natural populations with emphasis on the problems of human populations. Not open to majors in the biological sciences.

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

Refer to Honors Program.

167. Biology for Teachers (4)

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2.

Advanced study of biological principles including classification, physiology, morphology, and evolution. Designed primarily for those electing a biology minor for elementary or secondary teaching curricula. Not open to students majoring in the biological sciences.

### 169. Ecological Genetics (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 110 and 155.

Field and laboratory study of genetic adjustments and adaptations of natural populations to their environments.

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.

171. Mutagenesis (3)

Prerequisite: Biology 155.

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.

172. Behavioral Genetics (3) I, II

Prerequisite: Biology 155.

The genetic involvement of single and multiple gene systems in animal behavior.

173. Advanced Genetics (3) I, II

Prerequisite: Biology 155.

Current topics in molecular, organismal or population genetics. Maximum credit six units.

175. Statistical Methods in Biology (3) I

Two lectures and three hours of laboratory. Prerequisite: Biology 101, 110 or 155.

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.

181. Advanced Cellular Physiology (3) I, II Prerequisite: Biology 101.

Current topics in cellular physiology.

182. Immunochemistry (3) I, II

Prerequisite: Biology 101 or Microbiology 103.

Structure and function of the immunoglobulins and the chemical and physical nature of the antigen-antibody reaction.

182L. Immunochemistry Laboratory (1) I, II

Prerequisite: Credit or concurrent registration in Biology 182.

The characterization of the immunoglobulins and the measurement of the antigenantibody reaction.

190. Senior Investigation and Report in Physiology (2) I, II Prerequisites: Biology 101, senior standing and consent of instructor. Investigation and report on current physiological literature.

- 191. Senior Investigation and Report in Ecology (2) I, II Prerequisites: Biology 110, senior standing and consent of instructor. Investigation and report on current ecological literature.
- 195. Senior Investigation and Report in Genetics (2) I, II Prerequisites: Biology 155, senior standing and consent of instructor. Investigation and report on current genetic literature.

### 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 198 or a combination of this course with Microbiology or Zoology 198.

199. Special Study (1-3) I. II

Individual study. Maximum credit six units.

Prerequisites: Fifteen units in biological sciences with grades of A or B and consent of instructor.

### **Graduate Courses**

# 200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

An intensive study in advanced biology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

210. Seminar in Cellular Physiology (2)

Prerequisites: Biology 101 and consent of instructor.

Maximum credit four units applicable on a master's degree.

220. Seminar in Developmental Biology (2)

Prerequisite: Biology 156.

May be repeated with new content. Maximum credit four units applicable on a master's degree.

221. Developmental Genetics (3)

Prerequisites: Biology 101 and 156.

Regulation of genetic information in developing systems.

222. Morphogenesis (3)

Prerequisites: Biology 101 and 156.

Regulation of pattern formation in developing systems; cell migration, cell division, cell death, dependent differentiation.

230. Speciation (3)

Prerequisites: Biology 110 and 155, or Biology 160.

Concepts and principles of the origin of species.

231. Seminar in Ethology and Comparative Psychology (3)

(Same course as Psychology 231.)

Prerequisite: Biology 110, or Psychology 114 or 117, or Zoology 170, and consent of the graduate adviser.

Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.

240. Seminar in Terrestrial Ecology (2)

Prerequisite: Biology 110.

Ecological concepts as applied to the terrestrial environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

241. Seminar in Aquatic Ecology (2)

Prerequisite: Biology 110.

Ecological concepts as applied to the fresh water and marine environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

# 242. Population and Community Ecology (3)

Two lectures and three hours of laboratory.

Prerequisite: Biology 110.

Formulation, analysis, and experimental testing of the theories of the structure and dynamics of ecological systems at the population and community level.

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# 243. Physiological Ecology (3)

Two lectures and three hours of laboratory.

Prerequisites: Biology 110 and consent of instructor. The comparative physiological characteristics of natural plant and animal populations in relation to their habitats and environments.

# 244. Physical Aspects of Ecology (3)

# Prerequisite: Biology 110.

Two lectures and three hours of laboratory.

Analysis and measurement of physical factors of the environment and of the processes by which energy and matter are exchanged between organisms and the environment; the significance of the physical environment in ecological processes.

# 245. Aquatic Ecology (3)

Prerequisites: Biology 110 and consent of instructor. Application for collecting permit must be made at least six weeks before class begins at Bureau of Marine Sciences (AS-111).

Two lectures and three hours of laboratory. Ecological concepts as applied to benthic and pelagic population and communities in fresh water and marine environments.

### 246. Behavioral Ecology (3) Two lectures and three hours of laboratory.

Prerequisites: Biology 110 and consent of instructor. Recommended: Zoology 170 or

Psychology 141. Behavioral mechanisms relating animals to their physical and biotic environment.

# 250. Biogeography (3)

Prerequisite: Biology 110 or 160. Concepts and principles of the distributional history of plant and animal groups, and the origins and dispersal of modern faunas and floras.

# 260. Seminar in General Physiology (2)

Prerequisite: Biology 101.

May be repeated with new content. Maximum credit four units applicable on a master's degree.

# 261. Seminar in Environmental Radiation (2)

Prerequisites: Biology 150 and 151.

The sources, characteristics, distribution, measurement, and fate of radioactive contaminants in the biosphere and interactions with the biota. Maximum credit four units applicable on a master's degree.

### 262. Cytoplasmic Inheritance (3)

Prerequisites: Biology 101, 155, and consent of instructor.

Literature and techniques related to research in non-Mendelian genetics.

263. Seminar in Comparative Physiology (2) Prerequisites: Biology 142A or 142B and consent of instructor. Comparative aspects of function at the molecular through organismal levels. Maximum credit four units applicable on a master's degree.

### 264. Methods in Physiology (2)

Six hours of laboratory.

## Prerequisite: Biology 101.

Current methods employed in physiological measurements. Maximum credit four units applicable on a master's degree.

### 265. Molecular Biophysics (3)

Prerequisites: Biology 101 and Mathematics 22.

The description and analysis of biological processes and systems in terms of the properties of molecules and of basic principles.

### 270. Seminar in Genetics (2)

Prerequisite: Biology 155.

Maximum credit four units applicable on a master's degree.

### 276. Physiological Genetics (3)

Prerequisites: Biology 155 or 158; Chemistry 12.

### Recommended: Chemistry 115A-115B.

Biochemical aspects of genetics of microbial and human systems.

### 290. Bibliography (1)

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

### 291. Investigation and Report (3)

Analysis and research techniques in biology.

### 297. Research (1-3) Cr/NC

Research in one of the fields of biology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

# 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Botany

# In the College of Sciences

# Faculty

Emeritus: Harvey

Professors: Gallup, Kummerow, Wedberg Associate Professors: Alexander (Chairman), Preston, Rayle Assistant Professors: Carmichael, Johnson

### Offered by the Department

Master of Arts degree in biology with an emphasis in botany. Major in botany with the A.B. degree in liberal arts and sciences. Major in botany with the B.S. degree in applied arts and sciences. Minor in botany.

Single subject teaching credential in life sciences in area of botany.

# **Botany Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. It is recommended that students choose French, German, or Russian to meet the foreign language requirement for graduation.

A minor is not required with this major.

Preparation for the major. Biology 1, 2, and 15; Chemistry 1A-1B, and 11 or 12; Mathematics 21 or 40; and Physics 1A-1B, or 2A-2B and 3A-3B. (32 units.)

Major. A minimum of 24 upper division units to include Biology 155 and either Biology 110 or Botany 114, Botany 100 and 101 or 102 or 103, and 130 and 190A, 190B, and electives in the natural sciences. Recommended: Botany 140 and Microbiology 101.

# **Botany Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. Biology 1, 2, and 15; Chemistry 1A-1B, and 11 or 12; Mathematics 21 or 40; and Physics 1A-1B, or 2A-2B and 3A-3B. (32 units.) Recommended: German or French or Russian; Geology 2 and 3 or 4 and 5.

Major. A minimum of 36 upper division units in the biological sciences to include Biology 110 and 155; Botany 100 and 101 or 102 or 103; Botany 114, 130, 190A, and 190B; Microbiology 101; and five units of electives. Recommended: Botany 140.

# **Botany Minor**

The minor in botany consists of a minimum of 15 units in botany, six units of which must be in upper division courses.

### Botany

# For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in life sciences which includes the area of botany are being revised. For further information consult the department. Lower Division Courses

### 1. Plants and Man (3) I, H

Basic structure and function of plants with emphasis on the interrelationships of plants and man.

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99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

100. General Botany (4) I, II Three lectures and three hours of laboratory. Primarily for majors in the biological sciences. Structure, physiology, reproduction and Prerequisites: Biology 1 and 2. evolution of the major plant groups.

101. Phycology (4) I, II Two lectures and six hours of laboratory. Prerequisites: Biology 1 and 2. Morphology and phylogenetic relationships of the algae.

102. Mycology (4) I, II Two lectures and six hours of laboratory. Prerequisites: Biology 1 and 2. The structure, food relations, and classification of fungi.

103. Vascular Plants (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2.

Structure, development and phylogenetic relationships of the bryophytes and vascular plants.

111. Advanced Phycology (3) I, II

Prerequisite: Botany 101.

Physiology, ecology, culture and economic aspects of the algae. Maximum credit six units with three units applicable on a master's degree.

112. Cultivated Trees and Shrubs (3) I

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.

### 114. Plant Taxonomy (4) II

Two lectures and six hours of laboratory, field trips. Prerequisite: Biology 155.

The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.

118. Plant Study of the California Deserts (3) Formerly X-119. Offered in Extension only. One lecture and six hours of laboratory, field trips. Flowering plants of the desert region.

# 119-S. Field Botany (4) S

Two lectures and six hours of laboratory.

Prerequisite: A course in college biological science or consent of instructor. Local native vegetation with emphasis on ecological units within floristic areas. Primarily for students not majoring in the College of Sciences.

### 126. Plant Pathology (4) I

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2. Recommended: Botany 102. 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.

## 130. Plant Physiology (4) I, II

Two lectures and six hours of laboratory

Prerequisites: Biology 1, 2; Chemistry 1A-1B, and 11 or 12.

The activities of plants, including food manufacture, absorption, conduction, transportation, respiration, growth and movement.

# 132. Plant Metabolism (3)

Prerequisite: Botany 130 or Biology 101.

An examination of metabolic pathways in plants and their regulation and control.

# 133. Experimental Plant Metabolism (2)

Six hours of laboratory.

Prerequisites: Credit or concurrent registration in Botany 132 and consent of instructor. Experimental approaches to the study of plant metabolism and development.

140. Plant Anatomy (4) II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2. Recommended: Botany 100.

The arrangement of structural elements within plant organs, with emphasis on cell and tissue types.

162. Agricultural Botany (2) I

Field trips to be arranged.

Prerequisites: Biology 1 and 2. Recommended: Botany 100 or Zoology 121. California crop plants, their general identification, cultural methods, and regional

distribution.

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

172. Palynology (3) I

One lecture and six hours of laboratory.

Prerequisite: A course in college biological science.

Principles and methods of pollen and spore diagnosis, with reference to use in taxonomy, paleontology, anthropology, and medicine.

### 190A. Senior Investigation and Report (1) I

One discussion period and two additional hours to be arranged. Prerequisites: Botany 101 or 102 or 103, and senior standing. Selection and design of individual project; oral and written reports.

190B. Senior Investigation and Report (2) II

- One discussion period and five additional hours to be arranged.
- Prerequisite: Botany 190A.

Individual investigation, progress reports, oral and written final reports.

# 196. Selected Topics in Botany (2-3) I, II

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.

# 199. Special Study (1-3) I, II

Individual study. Maximum credit six units. Prerequisite: Fifteen units in botany with grades of A or B or consent of instructor.

### **Graduate Courses**

### 200. Seminar (2 or 3)

Prerequisite: Consent of instructor.

An intensive study in advanced botany, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

### 201. Seminar in Phycology (2)

Prerequisite: Botany 101.

Recent developments in phycology. Maximum credit four units applicable on a master's degree.

202. Seminar in Mycology (2)

Prerequisite: Botany 102.

Current problems in the taxonomy, morphology or physiology of the fungi. Maximum credit four units applicable on a master's degree.

### 203. Seminar in Vascular Plants (2)

Prerequisite: Botany 103. Problems in the evolution of the vascular plants. Maximum credit four units applicable on a master's degree.

226. Seminar in Plant Pathology (2)

Prerequisite: Botany 126. Advanced topics in the biology of plant pathogens. Maximum credit four units applicable

on a master's degree.

230. Seminar in Plant Physiology (2)

Prerequisite: Botany 130.

Current investigations in one of the areas in plant physiology. Maximum credit four units applicable on a master's degree.

297. Research (1-3) Cr/NC

Research in one of the fields of botany.

Maximum credit six units applicable on a master's degree.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

**Business Administration / 143** 

# 142 / Business Administration

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

# **Business Administration** In the School of Business Administration

A member of the American Assembly of Collegiate Schools of Business

### Faculty

# Accounting Department

Professors: Brodshatzer, Dodds, Ferrel, Harned, Meier (Chairman), Odmark, Snudden Associate Professors: Bailey, Lightner, Williamson Assistant Professors: Meigs, Samuelson, Toole

# Lecturer: Sykes

**Finance Department** Professors: Chapman, Hippaka, Hungate (Dean), Nye, Reints, Reznikoff, Wijnholds Associate Professors: Block, Fisher, H., Hutchins, Neuberger, Schmier, Short, Smith, Vandenberg (Chairman)

Assistant Professors: Cowan, Fisher, R.T., Potter, Wilbur

# Information Systems Department

### Emeritus: Gibson

Professors: Archer, Crawford (Associate Dean), Langenbach, LeBarron, Pemberton (Chairman), Straub

Associate Professor: Spaulding Assistant Professors: Chrysler, Mahoney, Stenvall, Tilaro

Lecturers: Crownover, Padelford, Richardson, Wight

# Management Department

Emeritus: Torbert Professors: Atchison, Belasco, Belcher, Galbraith, Ghorpade, Hampton, Mitton, Peters, Pierson, Sherrard (Chairman), Srbich

Assistant Professors: Beatty, Boschken, Hesse, Trippi

# Marketing Department

Emeritus: deJulien

Professors: Barber, Darley (Chairman), Haas, Hale, Lindgren, McFall, Sharkey, Wotruba Associate Professors: Akers, Soldner, Vanier

Assistant Professors: Brooks, Redinbaugh, Settle, Vidali

# Offered by the School of Business Administration

Master of Science degree in business administration, Master of Business Administration. (Described in the Graduate Bulletin. Also refer to the section in this catalog on the Graduate Division.)

Majors with the B.S. degree in business administration in the following fields: accounting, finance, information systems, insurance, management, marketing, real estate. (Described in the section on the School of Business Administration.)

Minors in the following fields: accounting, business management, employee relations, finance, information systems, insurance, marketing, production and operations management, real estate. (Described in the section on the School of Business Administration.)

Teaching major in business for the single subject teaching credential.

### Lower Division Courses

1A-1B (4) or 1A-1B (2-2). Accounting Fundamentals I, II

Three hours of lecture and laboratory per two units of credit.

Prerequisite: Business Administration 1A is prerequisite to 1B.

Organizing, recording, and communicating economic information relating to the business entity.

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.

# 30B. Business Law (3) I. II

Prerequisite: Business Administration 30A.

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 118 instead of 30B

40. The Business Enterprise (3) I, II

Not open to students who are majors or minors in any department of the School of Business Administration.

The business enterprise and its function in society; interrelations of ownership, entrepreneurship, and administration; interactions within the firm and within and among industries.

71. Beginning Typewriting (2)

Four hours.

Fundamentals of typewriting. Development of personal-use skills. Not open to students with credit for high school typewriting.

72. Advanced Typewriting (2) Four hours.

Application of typewriting skills in solution of typical business problems.

73. Computational Machines Laboratory (1) I. II Two hours of laboratory.

Laboratory course in figuring and calculating machine principles and operation.

74. Communicative Machines Laboratory (2) I, II

Four hours of laboratory. Prerequisite: Business Administration 71.

Laboratory course in communication and duplicating machine principles and operation.

75A-75B. Shorthand (3-3)

Five hours of lecture and activity.

Prerequisite: Business Administration 72; 75A is prerequisite to 75B.

Gregg shorthand theory; dictation and transcription.

76. Advanced Shorthand (3) Prerequisite: Business Administration 75B. Development of speed in writing and transcription.

80. Written Communications in Business (3) I. II

Prerequisite: English 5 or 6.

Principles of effective writing applied to business and industrial situations and to the organization and presentation of reports.

83. Information Processing and Computer Programming (3) I, II

Introduction to concepts of information processing and computer programming.

84. Systems Programming (3) I, II

Prerequisite: Business Administration 83.

The theory and techniques of data manipulation, utilizing a problem-oriented language. 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

100. Intermediate Accounting (4) I, II

Prerequisite: Business Administration 1B.

Theories and principles underlying financial statements and determination of income of partnerships and corporations.

101. Specialized Accounting Problems (4) I, II

Prerequisite: Business Administration 100.

Problems involved in partnerships, consignments, consolidations, receiverships, foreign exchange, fund accounting, and other specialized areas.

102. Managerial Cost Accounting (4) I. II

Prerequisite: Business Administration 1B.

Management use of accounting data for planning and control; theories and practices of cost accounting, standard cost systems, distribution analysis, and capital budgeting,

# 103. Accounting for Managers (4) I, II

Prerequisite: Credit or concurrent registration in Business Administration 132. Managerial accounting and financial accounting for nonaccountants. Not open to students

with credit in Business Administration 100 or 102.
# 106. Income Tax Accounting (4) I, II

Prerequisite: Business Administration 1B. Theory and procedures in the preparation of federal and California income tax returns for individuals, partnerships and corporations.

107. Advanced Income Tax Accounting (2) I, II

# Prerequisite: Business Administration 106.

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.

108. Governmental Accounting (2) I, II

Prerequisite: Business Administration 100. 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.

# 112. Auditing (4) I, II

Prerequisites: Business Administration 101 and 102. General principles and concepts of auditing; consideration of the design of accounting systems; duties, ethics, and responsibilities of the auditor; procedures for verification of financial statements; auditor's reports.

114. Accounting Systems (3) I, II Prerequisites: Business Administration 100 and 102.

General system theory and system terminology. New mathematical and statistical techniques for solving special system problems. Planning, controlling, and reporting procedures will be developed for accounting systems employing the use of digital computers.

# 115. Accounting Theory (3) I, II

Prerequisites: Business Administration 100 and 102 and one other upper division course in accounting.

Critique of contemporary accounting theory; recommendation for improvement of financial accounting; research in accounting theory.

### 118. Advanced Business Law (3) I, II

Prerequisites: Business Administration 30A 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 30B.

# 119. Advanced Accounting Problems (3) I, II

# Prerequisite: Business Administration 112.

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.

#### 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.

### 121A. Property Insurance (3) I

Prerequisite: Business Administration 120.

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.

### 121B. Casualty Insurance (3) II

Prerequisite: Business Administration 120.

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.

122. Social Insurance (3) II

Prerequisite: Economics 1B.

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.

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.

124. Life Insurance Principles and Practices (3) II

Prerequisite: Business Administration 120.

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.

# 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.

# 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. (Formerly numbered **Business Administration 127.)** 

### 127. Planning of Capital Expenditures (3) I. II

Prerequisites: Business Administration 126 and credit or concurrent registration in 190. 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.

### 128A. Investments (3) I, II

Prerequisite: Business Administration 126.

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. (Formerly numbered Business Administration 128.)

# 128B. Security Analysis and Investment Strategies (3) I, II

Prerequisite: Business Administration 128A.

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.

### 129. International Business Finance (3) I. II

Prerequisite: Business Administration 126.

The financing of international business transactions; international payments and their environment; international financial institutions.

### 130. Financial Analysis and Management (3) I. II

Prerequisites: Business Administration 127 and Economics 135.

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.

### 131. Law in a Business Society (3) I, II

Prerequisite: Business Administration 30A.

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.

# 132. Fundamentals of Management (3) I, II

Prerequisite: Completion of lower division courses required in the major or minor. What a manager does, how he selects objectives, organizes essential activities, plans, directs and controls operations; fundamentals which guide a manager's decisions.

### 134. The Social Environment of Business (3) I. II

Prerequisite: Senior standing.

An interdisciplinary study of American business enterprise in its cultural environment. The foundations of business; historical modifications; present relationship between business and society. The moral and ethical responsibilities of business and the businessman.

135. Fundamentals of Production and Operations Management (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Business Administration 132.

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.

### 136. Quality Control (3) I, II

Prerequisites: Business Administration 135 and 190.

Techniques for planning and controlling quality of produced and purchased items; emphasis on statistical and quantitative methods particularly applicable to quality, reliability, and maintainability.

### 146 / Business Administration

137. Systems and Methods Analysis (3) I, II

- Two lectures and three hours of laboratory.
- Prerequisite: Business Administration 135.

Examination of systems approach as applied to methods analysis and work measurement. Modeling, analysis, synthesis, and management of systems. Analysis of case studies.

138. Operations Planning and Control Systems (3)

Prerequisites: Business Administration 135 and 190.

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.

### 140. Employee Relations (3) I, II

Prerequisite: Business Administration 132.

Problems of business and industry in dealing with employees, special attention to company and public policy, staffing, employee development, labor relations and employee motivation. Comparisons of current practices to underlying problems and theories.

# 141. Applications in Management (1-3) I, II

Prerequisites: Business Administration 132 and concurrent registration in Business Administration 135, 140, 145 or 149.

Developing specific skills in areas of management.

142. Wage and Salary Administration (3) I, II

Prerequisite: Business Administration 140.

Major problems in the determination and control of compensation from employment. Comparison of underlying theory to current practice.

143. Problems in Employee Relations (3) II

Prerequisite: Business Administration 140.

The employee relations function. Analysis of current practices as effective solutions to problems in this area. Guided research into the nature of employment relations.

# 145. Human Factors in Management (3) I, II

Prerequisite: Business Administration 132 or Public Administration 144.

Organizations as social systems; power and authority; communication, motivation and leadership; impact of technology on management and workers, resistance to change; human needs and the imperatives of management.

# 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.

# 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.

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

# 151. Marketing Management (3) I, II

Prerequisites: Business Administration 156 and 157.

The managerial aspects of marketing. The development of marketing strategy and plans with the aid of social science concepts. Integrates the specific elements of the marketing

# 152. Retailing Principles (3) I, II

Prerequisite: Business Administration 150.

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

# 153. Advertising Principles (3) I, II

Prerequisite: Business Administration 150.

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; 154. Marketing Problems (3) I, II

Prerequisite: Business Administration 150.

Complex cases in marketing involving analysis of business situations.

156. Consumer Behavior (3) I, II

Prerequisite: Business Administration 150.

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.

157. Marketing Research (3) I, II

Prerequisites: Business Administration 150 and 190.

Formal research techniques and analysis for marketing decisions; principles of decision making.

158. Marketing Research Laboratory (1)

Three hours of laboratory. Prerequisite: Business Administration 157.

Applications of market research techniques to selected topics. Uses and limitations of various methods of analysis. Orientation and use of computer center is included.

159. Analysis of Marketing Information (3) I, II

Prerequisites: Business Administration 150 and 190.

The analysis and interpretation of marketing and business information. Decision-making procedures used in conjunction with marketing information.

160. Advertising Management (3)

Prerequisites: Business Administration 153 and 156.

The management of the advertising and sales promotion function.

161. Traffic Management (3) I

Prerequisite: Economics 1B or 103B.

Organization and functions of a traffic department, routing policy on shipments, freight rates and classifications, receiving and shipping, loss and damage claims, warehousing, packing and loading, documentation, export and import shipments, government regulations.

# 162. Industrial Marketing (3) I, II

Prerequisites: Business Administration 132 and 150.

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.

# 163. Sales Management (3) I. II

Prerequisite: Business Administration 150.

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.

### 164. Purchasing and Buying (3) I, II

Prerequisites: Business Administration 132 and 150.

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.

165. International Marketing (3) II

Prerequisite: Business Administration 150.

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.

166. Honors Course (1-3) I. II

Refer to Honors Program.

170. Real Estate Principles and Practices (3) I, II

Prerequisite: Economics 1B or 103B.

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.

171. Law of Real Property (3) I, II

Prerequisites: Business Administration 30B and 170.

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.

172. Property Investment and Management (3) I, II

Prerequisite: Business Administration 170.

The rental markets, property management programs, collection procedures, lease forms, tenant and owner relations, rental techniques, maintenance and rehabilitation procedures, and investment property analysis.

### 148 / Business Administration

### 173. Real Estate Finance (3) I, II

Prerequisites: Business Administration 30B and 170.

Methods of financing real estate; sources of real estate credit; loan servicing; governmental financial agencies; acquisition and sale of mortgages and trust deeds.

# 174. Real Estate Appraisal Theory (3) I, II

Prerequisites: Business Administration 170.

Introduction to theories, functions, and purposes of appraisals of residential and income properties: methods of valuation, techniques of market data analysis, rehabilitation estimates.

### 175. Real Estate Appraisal Problems (3) II

Prerequisite: Business Administration 174.

Implementation of advanced value theory and appraisal technique in the solution of valuation problems involving condemnation, and industrial, commercial, land, and special purpose properties.

# 180-S. Workshop in Business Education (2) S

Developments in business education areas such as (A) bookkeeping, (B) distributive and basic business education, (C) secretarial, and (D) typewriting. Opportunity provided for work on individual problems. May be repeated with new content. Maximum credit eight units.

### 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.

# 183. Executive Secretarial Management (3)

Prerequisites: Business Administration 74 and 75B.

Executive secretarial responsibilities and functions, including a review for the Certified Professional Secretary Examination.

# 184. Information Systems Management (3) I, II

Prerequisite: Business Administration 83; Economics 2 or Mathematics 19.

Administrative theories as they apply to typical information systems; interrelationship of personnel, equipment, and services; emphasis on quantitative and qualitative aspects of information systems.

# 185. Automated Management Information Systems (3) I, II

Prerequisites: Business Administration 84; Economics 2 or Mathematics 19. Concepts and techniques for the design, development, and implementation of EDP-based management information systems to improve decision making.

186. Information Storage and Retrieval Systems (3) I, II

Prerequisite: Business Administration 185.

Systems for abstracting, storing, and retrieving information with automated equipment. (Formerly numbered Business Administration 187.)

# 187. Advanced Programming Techniques (3) I, II

Prerequisite: Business Administration 185.

Software packages utilized in EDP systems in business. (Formerly numbered Business Administration 188.)

# 188. Data Processing Practicum (3) I, II

Prerequisites: Business Administration 186, 187, 190.

Fundamentals of systems flow charting and computer programming; computer applications to typical automated data processing problems. (Formerly numbered Business

190. Quantitative Analysis for Business (3) I, II

Prerequisites: Mathematics 20; Economics 2 or Mathematics 19.

Quantitative methods applied to business decision making.

# 191. Quantitative Methods (3)

Prerequisites: Mathematics 20; Economics 2 or Mathematics 19.

A study of various management science techniques such as simulation, transportation and simple linear programming and queuing theory.

# 192. Advanced Quantitative Methods (3)

Prerequisite: Business Administration 191

The derivation and application of management science techniques to management decision making. Simulation of static and dynamic models. Development of advanced linear

# 193. Management Science (3)

Prerequisite: Business Administration 192.

Study of current applications of operations research techniques to the solution of business and industrial problems. Readings, projects, cases, and field work as appropriate.

# 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. (Formerly numbered Business Administration 189.)

# 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. (Formerly numbered Education 1210.)

# 195. Selected Topics in Business Administration (1-3) I, II

Prerequisite: Consent of Dean of School of Business Administration.

Selected areas of concern in business administration; topic to be listed in class schedule. May be repeated with new content with consent of Dean of School of Business Administration. Maximum credit six units.

### 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.

### 197. Business Forecasting (3) I. II

Prerequisites: Business Administration 126, 150, and 190 or 191.

Business fluctuations; forecasting, and related problems confronting the business firm; forecasting techniques; specific forecasts. The use of forecasts in the firm.

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.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

### **Graduate Courses**

# Classified graduate standing is a prerequisite for all 200-numbered courses.

200. Financial Accounting (3)

Basic concepts and principles of financial accounting; accounting as a data processing system; measurement of business income; financial statements.

### 201A. Organization Theory (3)

The business organization viewed as a system. Development of organization theory, functions and structure of organizations, control and adaptation, interaction of systems levels and organizational values.

# 201B. Behavior in Organizations (3)

Prerequisite: Business Administration 201A.

Nature of the human resource in organizations. Analysis of organizational systems and managerial actions to direct and control human behavior. 202A-202B. Quantitative Methods (3-3)

In 202A: Measure of central tendency and variation, sampling and various statistical tests such as analysis of variance, F, t, and X<sup>2</sup> tests. Simple and multiple correlation. In 202B: The design of statistical experiments and various operations research techniques such as simulation, linear programming, queuing theory, and Markov chain analysis.

### 203. Marketing (3)

The marketing activities of a firm in relation to management and society. Application of economic theory to marketing institutions and functions. Not open to students with credit for Business Administration 150 or its equivalent.

### 204. Law for Business Executives (3)

Development, significance, and interrelationships of law and business. Analysis of essential aspects of law pertaining to business including materials from the law of contracts, sales, agency, business organizations, property, negotiable instruments, secured transactions. Effects of government regulation of labor and business.

# 205. Financial Principles and Policies (3)

Prerequisite: Business Administration 200.

Finance and financial institutions as they relate to the firm and the flow of funds. Emphasis on the supply of and demand for capital; principles and tools of business finance; money and capital markets.

# 206. Managerial Economics (3)

Prerequisite: Economics 203.

Role of economic theory in management analysis and decision. Study of demand, cost, and supply theories from a business viewpoint.

### 207. Research and Reporting (3)

Prerequisite: Business Administration 202B. Principles of research design and data accumulation. The analysis and effective presentation of data related to business and industry.

208. Managerial Accounting (3) Prerequisite: Business Administration 200.

Accounting in relation to the decision-making process; various cost systems; relevancy of various cost concepts; direct costing, flexible budgets, distribution costing; break-even analysis; capital budgeting; and other techniques of management planning and control.

# 209. Computer Programming and Systems Analysis (3)

Prerequisite: Business Administration 202A.

Fundamentals of computers, problem-oriented computer language, flow-charting logic and techniques, analysis of the synthesis of computer-based systems.

# 210. Theory and Analysis of Financial Statements (3)

Prerequisite: Business Administration 200.

The theories, principles, and concepts underlying financial statements; measurement and presentation of enterprise resources, equities, and income in accordance with generally accepted accounting principles; consideration of price level problems.

# 211. Advanced Accounting (3)

Prerequisite: Business Administration 210.

Principles and concepts as related to the measurement, determination, and presentation of resources, equities, and income of parent and affiliated companies; concepts of fund accounting; specialized reporting for partnership formation, income distribution, and liquidation.

# 212. Income Tax Accounting (3)

Prerequisite: Business Administration 200.

Provisions of the federal tax law, including preparation of returns for individuals, partnerships, corporations, estates, trusts; procedures for reporting deficiency assessments,

refunds, and other administrative practices. 213. Auditing (3)

Prerequisite: Business Administration 211.

Critical analysis of the application of auditing principles in verification of financial statements; review of AICPA and SEC bulletins and regulations; consideration of professional ethics, audit standards, procedures, sampling techniques, and report writing; trends and developments in auditing profession.

# 214. Seminar in Accounting Information Systems (3)

Prerequisites: Business Administration 202B and 208.

Systems design and related controls. Emphasis on mathematics, statistics, and computers

in planning and reporting.

215. Seminar in Managerial Accounting (3)

Prerequisite: Business Administration 208.

Managerial cost accounting concepts and procedures, including budgetary planning, cost control, advisory functions, measurement of divisional profitability, product pricing, and 219. Seminar in Accounting Theory (3)

Prerequisite: Business Administration 211.

Historical development of accounting principles and theory; problems in valuation, income determination, and statement presentation.

220. Legal Aspects of Labor-Management Relations (3)

Legal aspects of union organizational activities, representation proceedings, unfair labor practices, collective bargaining and contracts, grievances and arbitration, strikes, picketing, 221. Insurance Principles and Practices (3)

Nature and extent of personal business, and social risk. Risk handling techniques; insurance principles and practices; basic contracts analysis; insurance underwriting and rating; insurance problems and trends; personal and business risk management. 222. World Business Environment (3)

# Prerequisite: Economics 203.

The nature, dimensions and motives of International Business. Impact of environmental factors. The nature of the multinational corporation, the importance of national and multilateral controls and policies for International Business management.

223. Seminar in Business Finance (3)

Prerequisite: Business Administration 205.

Application of principles of finance to current problems in financial management, with emphasis on planning and development of tools for use in decision making. Consideration of case materials, study of the literature, and development of individual student reports.

224. Seminar in Investments (3)

Prerequisite: Business Administration 205.

Examination of firms from an investment point of view; historical and current developments affecting investment values; sources of information; techniques of analysis; measurement of risks, returns, and investment values.

225. Seminar in Insurance (3)

Prerequisite: Business Administration 221.

Risk management in effective business operations. Programming of personal and business risk problems. Insurance institutions.

226. Seminar in Security Analysis and Portfolio Management (3)

Prerequisites: Business Administration 209 and 224.

Security valuation and price forecasting. Portfolio management theory. Risk management and reduction analysis. Establishment of performance objectives.

227. Seminar in Quantitative Analysis for Financial Decisions (3)

Prerequisites: Business Administration 202B, 205 and 209.

Quantitative techniques and the computer as employed to optimize financial decisions. 228. Seminar in International Business Finance (3)

Prerequisite: Business Administration 205.

International finance applied to the business firm.

229. Seminar in Financial Markets (3)

Prerequisite: Business Administration 205.

Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.

230. Production and Operations Management (3)

Prerequisite: Business Administration 202B. Theory, concepts and decision analysis related to effective utilization of major factors of production in manufacturing and service industries. Utilizes the system approach to achieve unification of the production elements in terms of both analysis and synthesis. Not open to students who have credit for a basic course in production management.

# 231. Methods Engineering and Job Design (3)

Prerequisite: Business Administration 230.

Use of industrial engineering for management decisions-job simplification and motion economy; micromotion analysis, time standards and determination, performance rating, allowances, statistical work measurement, learning curves, formula construction, machine interference and the establishment of production times from standard data.

# 232. Quality Control (3)

Prerequisite: Business Administration 230.

Statistical techniques for controlling quality, reliability and maintainability; types of control and limit charts.

# 233. Operations Planning and Control Systems (3)

Prerequisite: Business Administration 230.

Analysis and design of single- and multiple-product integrated production and inventory control systems. Combined detailed and aggregate planning of operations with deterministic or stochastic demand over finite and infinite horizon.

# 234. Seminar in Production and Operations Management (3)

Prerequisite: Business Administration 230.

Case studies of selected industries, emphasizing integration of the manufacturing and operations functions with the major goals of the organization.

# 236. Operations Research: Deterministic Systems (3)

Prerequisites: Business Administration 202B and 209.

Mathematical optimization techniques for deterministic systems. Advanced topics in linear programming; nonlinear, dynamic, and integer programming; selected examples of application.

237. Operations Research: Stochastic Systems (3)

Prerequisites: Business Administration 202B and 209.

Use of probability and statistical decision theory for decision making under conditions of uncertainty. Markov processes, queuing theory, and the theory of games.

238. Computer Applications in Operations Research (3)

Prerequisite: Business Administration 236.

Computer simulation techniques for analysis of complex decision problems. Implementation of optimization algorithms through use of the digital computer.

# 239A. Seminar in Management Science: Theory (3)

Prerequisite: Business Administration 236.

Examination of recent developments in management science/operations research theory and methodology.

# **Business Administration / 151**

239B. Seminar in Management Science: Application (3)

Prerequisite: Business Administration 236

Quantitative techniques for managerial planning and decision making. Applications of operations research and other concepts to industrial situations. (Formerly numbered Business Administration 239.)

# 240. Seminar in Manpower Planning and Staffing (3)

Prerequisite: Business Administration 201B, or one of the following: Public Administration 241, Economics 250, Psychology 220, Sociology 220.

Theories and models of manpower planning; inventorying and forecasting of manpower needs and requirements; labor force analysis; recruitment; the staffing process; measurement tools and techniques.

# 241. Seminar in Union-Management Relations (3)

Prerequisite: Business Administration 201B, or one of the following: Public Administration 241, Economics 250, Psychology 220, Sociology 220.

Interaction of unions and business organizations with particular emphasis on collective bargaining. Effects on management and society. Trends in collective bargaining and in the organization of employees.

# 242. Seminar in Compensation (3)

Prerequisite: Business Administration 201B, or one of the following: Public Administration 241, Economics 250, Psychology 220, Sociology 220.

The organizational process of compensating employees. Compensation theory from economics psychology, and sociology. Compensation systems and their effects on organizations and individuals.

# 243. Seminar in Organizational Development (3)

Prerequisite: Business Administration 201B, or one of the following: Public Administration 241, Economics 250, Psychology 220, Sociology 220.

The process of developing human resources and organizations. Theories of organizational development; tools and techniques, analysis of manpower and organizational development programs.

249. Seminar in Human Resources Administration (3)

Prerequisite: Business Administration 201B or six units in Human Resources Administration.

Analysis of issues and application of behavioral science theory in acquiring, developing, rewarding, and utilizing human resources.

250. Seminar in Marketing and the Economy (3)

Prerequisite: Business Administration 203.

Advertising, selling, sales promotion, and merchandising as they relate to society, business and the economy.

# 251. Seminar in New Products Marketing (3) Prerequisite: Business Administration 203.

The study of new products management in relation to planning and implementation of marketing strategy. 252. Marketing Institutions (3)

Prerequisite: Business Administration 203.

Analysis of development of wholesaling and retailing and of growth, change, and efficiency of these institutions in the American and other economies.

253. Seminar in Marketing Price Policy (3)

Prerequisite: Business Administration 203.

Study of pricing strategy and price determination in business organizations. 254. Seminar in Sales Management (3)

Prerequisite: Business Administration 203.

Sales management and personal selling decisions and strategies in business organizations. 255. Seminar in International Marketing (3) Prerequisite: Business Administration 203.

The impact of cultural, social, political, economic, and other environmental variables on international marketing systems and the decision-making process of multinational marketing

256. Seminar in Consumer Behavior (3)

Prerequisite: Business Administration 203.

The study of consumer behavior in relation to marketing strategy and the changing environment of business.

257. Seminar in Industrial Marketing Management (3)

Prerequisite: Business Administration 203.

The management of marketing decisions and strategies peculiar to the industrial market.

# **Business Administration / 153**

258. Seminar in Industrial and Government Procurement Management (3)

Prerequisites: Business Administration 201A and 203.

Procurement methods used in industry and government; internal departmental operations, interrelationships with other departments; supplier selection, pricing/cost analysis; contract negotiations, special characteristics of government procurement.

# 259. Market Analysis and Research (3)

Prerequisites: Business Administration 202B and 203.

Application of statistical and mathematical methods to market problems, consumer research, and product analysis. 260. Principles of Real Estate (3)

Functions and regulation of the real estate market, real estate finance, property management, real estate appraisal theory, specialized properties, urban development, and contemporary real estate problems. (Formerly numbered Business Administration 222.)

# 261. Seminar in Real Estate (3)

Prerequisite: Business Administration 260.

Current problems in real property. Regional land use planning. (Formerly numbered **Business Administration 226.**)

262. Seminar in Real Estate Investment (3)

Prerequisite: Business Administration 260.

Investment characteristics of real property. Analysis of real estate investment by institutions, corporations, individuals, and government. Measuring investment yield potential of industrial, commercial, and residential projects. Real estate investment and

# 263. Seminar in Real Estate Finance (3)

Prerequisite: Business Administration 260.

Theories and factors governing the financial functions of lenders, borrowers, governmental agencies, and collateral in financing real estate. 264. Seminar in Valuation of Real Property (3)

Prerequisite: Business Administration 260.

Valuation of real property by the cost, income, and market approaches to value. Evaluation of property taken in eminent domain proceedings, air rights, inverse condemnation, lease-hold interests.

270. Seminar in Business Education (3)

Study of some phase of business education, such as administration and supervision; distributive and basic business education; trends in and methods of teaching shorthand and typewriting.

273. Computer Hardware and Software Systems (3)

Prerequisite: Business Administration 209.

Computer architecture, programming languages, programming systems, and operating systems.

# 274. Information Theory (3)

Prerequisite: Business Administration 209.

Data structures, data communications, computer-centered information networks, and addressing and indexing schemes.

275. Measurement and Control of Information Systems (3)

Prerequisites: Business Administration 273 and 274.

Information systems models, information utility, performance measurement, applications and systems evaluations, and computer-based adaptive control concepts and organization.

276. Seminar in Advanced Information Topics (3)

Prerequisite: Business Administration 274.

Self-reproducing automata, artificial intelligence, self-organizing information systems,

- 278. Seminar in Management of Information Systems (3) Prerequisite: Business Administration 274.

Advanced information systems. Emphasis on current managerial trends and developments and on individual student research.

- 279. Seminar in Data Systems Design (3)
- Prerequisites: Business Administration 202B and 274.
  - Research in the analysis and design of data processing systems.

281. Behavioral Sciences for Management (3) Prerequisite: Business Administration 201B.

Applications of findings from behavioral sciences to management problems and decisions. Study of organization cultures and subcultures. Impact of human behavior on the enterprise.

# 282. Group Processes and Leadership (3)

Prerequisite: Business Administration 201B.

Perceptions and processes in work groups. Experience in interpersonal networks, influence and rewards, stereotypes; managing differences and conflicts.

283. Origins and Nature of American Business Enterprise (3)

Prerequisite: Business Administration 201B.

Factors underlying the American system of business enterprise: modern corporations, the corporation man, technological change, the business community and politics, and other significant issues.

### 284. Policy Formulation (3)

Prerequisites: Advancement to candidacy and consent of instructor.

Building and maintaining enterprises in our society; determining objectives; developing policies and plans for achievement; measuring and controlling organizational activities; reappraising objectives and policies on the basis of new developments.

### 285. Seminar in Business Planning (3)

Prerequisites: Business Administration 201A, 203, 205, and nine units in Business Administration courses numbered 210 or above.

Strategic decision making, long-range forecasting, and corporate planning with major emphasis on product-market relationships.

# 286. Seminar in Comparative Management (3)

Prerequisite: Business Administration 201B.

Concepts, theories, techniques, and practices of management in various countries.

287. Quantitative Forecasting and Planning (3)

Prerequisite: Business Administration 236 or 237.

Mathematical approach to intermediate and long-range forecasting of economic and technological variables which affect the firm. Development of solution algorithms and heuristic procedures for solution of dynamic planning problems.

# 288. The Entrepreneur (3)

Prerequisite: Business Administration 201B.

Examination of the entrepreneurial approach; concepts, theory and techniques of managerial innovation and implementation; analysis of entrepreneurial skills.

### 289. Seminar in Organization and Management (3) Prerequisite: Business Administration 201B.

Analysis of problems in business and other organizations. Organization and decision theory and contemporary developments in management science are emphasized.

290. Directed Readings in Business Administration (3)

Prerequisite: Advancement to candidacy.

Preparation for the comprehensive examination for those students in the M.B.A. program under Plan B.

# 295. Seminar in Selected Topics (3)

Selected areas of concern in business administration; topic to be announced in the class schedule.

Maximum credit six units applicable on a master's degree.

297. Research (3) Cr/NC

Prerequisite: Advancement to candidacy.

Research in one of the fields of business administration.

# 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Chemistry In the College of Sciences

The department is on the approved list of the American Chemical Society.

Faculty

Emeritus: Joseph, Robinson, Rowe

Professors: Abbott, Bennett, Cobble, Golding, Grubbs, Harrington, Hellberg, Isensee, Jensen, Jones, Landis, Malik, Mathewson, O'Neal, Richardson, Ring, Sharts, Spangler, Stewart, Wadsworth (Chairman), Walba, Wick, Woodson Associate Professors: Coffey, Malley, Roeder

Assistant Professor: Dahms

### Offered by the Department

Doctor of Philosophy degree in chemistry.

Master of Arts degree in chemistry.

Master of Science degree in chemistry.

Major in 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.

Major in chemistry with the A.B. degree in liberal arts and sciences. Minor in chemistry.

Single subject teaching credential in physical sciences in the area of chemistry.

# **Chemistry Majors**

# In Applied Arts and the Sciences

Three majors in chemistry are offered in applied arts and sciences. A chemistry major is also offered in liberal arts and sciences.

The chemistry majors available in applied arts and sciences are as follows: (1) Chemistry major with the B.S. degree and Certificate of the American Chemical Society, a program designed to qualify graduates for many types of positions as chemists and for admission to graduate work in chemistry;

(2) Chemistry major with the A.B. degree and Certificate of the American Chemical Society, a program designed to prepare students for graduate work in chemistry; and

(3) Related Professions major, a program available only to students who are taking a premedical or predental curriculum.

# Certificate of the American Chemical Society

The Department of Chemistry is on the approved list of the American Chemical Society. Programs leading to a chemistry major with the B.S. degree or the A.B. degree are designed to meet the standards prescribed for the Certificate of the American Chemical Society. The program leading to the Related Professions major is not offered with the Certificate, Provision is made for students taking the chemistry major in liberal arts and sciences to obtain the A.B. degree with or without the Certificate.

# **Chemistry Major**

With the B.S. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

The curriculum outlined below for the B.S. degree in applied arts and sciences is based upon the recommendations of the Committee for Professional Training of Chemists of the American Chemical Society. It qualifies graduates for many types of positions as chemists and provides the training required by most universities for admission to graduate work in chemistry

A minor is not required with this major.

Preparation for the major. Chemistry 1A-1B, 5, 12, and 13; Physics 4A-4B-4C; and Mathematics 50, 51, and 52. (44 units.)

Major. A minimum of 36 upper division units to include Chemistry 110A-110B, 112, 113. 116A, 127A, 155, 156A-156B, one unit of 198, and 12 units of upper division electives in chemistry or in related subjects with approval of the department.

Foreign language requirement. German 8A or Russian 8A.

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# OUTLINE FOR THE B.S. DEGREE AND CERTIFICATE

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and the second state of the second state of the	Sem	Sem	Second year	sem.	Dem.
First year	benn.	Denn.	Chamistry 5	4	-
Chemistry 1A-1B	5	5	Chemistry 5	4	4
+Mathematics 4 40 50	5	5	Chemistry 12-112	1	1
+ Mathematics +, +0, 00 minut	1	4	Chemistry 13–113	1	1
Physics 4A	2		Mathematics 51, 52	4	4
*Basic Subject	2	2	Physics 4B 4C	4	4
*Social Sciences	3	2	Commen 1 or Russian 1	and the	4
*Physical Activities	1	1	German I of Russian T	-	
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Chemistry 110A-110B	3	3	Chemistry 116A	2	
Chemistry 155		2	Chemistry 127A	3	- 0.0
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German 2, 8A or	1000	-	Chemistry Flactives	6	6
Russian 2, 8A	. 4	. 2	Chemistry Electives		7
t American Institutions	. 3	3	General Electives	-	-
SRielogy 1	3			15	13
*Uppenition	3	3		10	
"Humanities					
	16	15			

# **Chemistry Major**

With the A.B. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

A minor is not required with this major.

Preparation for the major. Chemistry 1A-1B, 5, 12, and 13; Physics 4A-4B-4C; and Mathematics 50, 51, and 52. (44 units.)

Major. A minimum of 24 upper division units in chemistry to include Chemistry 110A-110B, 112, 113, 127A, 155, 156A-156B, one unit of 198; and three units of upper division electives in chemistry to be selected from Chemistry 116A, 118, 127B, 131, 154.

Foreign language requirement. German 8A or Russian 8A.

### OUTLINE FOR THE A.B. DEGREE AND CERTIFICATE

	Units			Units		
	Ist	2nd		lst	2nd	
First year	Sem.	Sem.	Second year	Sem.	Sem.	
Chemistry 1A-1B	5	5	Chemistry 5	4		
+Mathematics 4, 40, 50	5	5	Chemistry 12-112	4	4	
Physics 4A	-	4	Chemistry 13-113	1	1	
*Basic Subject	3	-	Mathematics 51, 52	4	4	
*Social Sciences	3	3	Physics 4B, 4C	4	4	
*Physical Activities	_1	1	German 1 or Russian 1	-	4	
	17	18		17	17	
	U	nits		U	Units	
	lst	2nd		lst	2nd	
Third year	Sem.	Sem.	Fourth year	Sem.	Sem.	
Chemistry 110A-110B	. 3	3	Chemistry 127A	3	A an aller	
Chemistry 155	Relia :	2	Chemistry 156B	2		
Chemistry 156A		2	Chemistry 198	1	A 18 - 48-	
German 2, 8A or			Chemistry Electives	3		
Russian 2, 8A	. 4	2	General Electives	3	12	
FAmerican Institutions	. 3	3		12	12	
§Biology 1	. 3	-		12	12	
*Humanities	3	_3				
	16	15				

\* Refer to catalog section on General Education requirements. • Students eligible to take Mathematics 50 in their first semester should do so and substitute for Mathematics 4 and/or 40 two to five units of general electives.

<sup>4</sup> If this requirement is met by examination the appropriate number of units should be added to general electives. <sup>5</sup> Premedical and predental students will also take Biology 2 and decrease general elective units by 1.

# **Chemistry Major**

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

This plan is designed for only those students who desire the training in a premedical or 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 early before the second semistry of work at San Disease State division standing must apply before the second semester of work at San Diego State University. With an appropriate choice of electives, graduates can meet the requirements for admission to medical, dental, and pharmaceutical schools.

Preparation for the major. Chemistry 1A-1B, 4 (or 5), 12 and 13; Physics 4A-4B; Mathematics 4, 40 (unless exempted by examination), 50, 51, and Biology 1, 2. (46 units.)

Major. A minimum of 24 upper division units in chemistry to include Chemistry (109A-109B, 109C, 170) or (110A-110B, 155, 156A-156B), 112, and eight units of upper division electives in chemistry. Chemistry 115A-115B or 116A-116B is recommended for all premedical students.

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

Foreign language requirement. Recommended: German 8A or Russian 8A.

# **Chemistry Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. It is recommended that students choose German to meet the foreign language requirement for graduation. A minor is not required with this major.

This major is designed for students desiring emphasis in chemistry as part of a liberal arts and sciences education or as preparation for entering a related profession.

Preparation for the major. Chemistry 1A-1B, 4 and 12; Physics 1A-1B, or 2A-2B and 3A-3B; and Mathematics 21 and 22. (33 units.)

Major. A minimum of 24 upper division units in Chemistry to include Chemistry 109A-109B, 109C, 112, 170; and eight units of upper division electives.

# **Chemistry Minor**

The minor in chemistry consists of Chemistry 1A-1B, 4 or 5, 11 or 12, and six upper division units in chemistry. (24 units.)

# Chemistry

# For the Single Subject Teaching Credential in Physical Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in physical sciences which includes the area of chemistry are being revised. For further information consult the department.

# **Chemistry Placement Examination**

All students who plan to enroll in Chemistry 1A or 10A and who have not completed Chemistry 2A at San Diego State University with a grade of C or better must take the chemistry placement examination. This test may be used to satisfy the prerequisite requirements for Chemistry IA and may also serve as a basis for the selection of students for the honors chemistry program. The schedule for this examination will be posted on the chemistry bulletin board. Provision is also made for this examination to be taken by the entering freshman or the transfer student prior to registration. Refer to the calendar,

### Lower Division Courses

# 1A-1B. General Chemistry (5-5) I, II

Three lectures and six hours of laboratory. Prerequisites: High school chemistry, qualification on Chemistry Placement Examination, and two years of college preparatory mathematics; or a grade of C or better in Chemistry 2A at this university.

General principles of chemistry with emphasis on inorganic materials. Qualitative analysis is included in the second semester. Duplicate credit will not be allowed for the corresponding course in Chemistry 10A, 10B, or 1E. Students with credit for both Chemistry 1A and 2A will receive a total of 5 units of credit toward graduation.

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1E. General Chemistry for Engineers (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Chemistry 1A.

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 1B.

2A. Introductory General Chemistry (3) I, II

Two lectures and three hours of laboratory.

Elementary principles of chemistry. Not open to students with credit in Chemistry 1A.

2B. Elementary Organic Chemistry (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Chemistry 1A or 2A.

Introduction to the compounds of carbon including both aliphatic and aromatic substances. Not open to students with credit in Chemistry 1B or 1E.

3. Introductory Biochemistry (3) I. II

Three lectures with demonstrations.

Prerequisite: Chemistry 2B.

Fundamental principles of the chemistry of living processes. This course intended primarily for majors in home economics, nursing, and related fields.

4. Techniques of Analytical Chemistry (5)

Three lectures and six hours of laboratory.

Prerequisite: Chemistry 1B or 2B.

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 5.

5. Analytical Chemistry (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Chemistry 1B; and credit or concurrent registration in Mathematics 22 or 50.

Theory and practice of volumetric, gravimetric and electrical methods of analysis. Not open to students with credit in Chemistry 4. Duplicate credit will not be allowed for equivalent work in Chemistry 10A-10B.

7A-7B. Chemical Principles for the Environment (3-3) I. II

Two lectures and two hours of discussion.

Prerequisite: Chemistry 2B, 7A, 11, or 12 is prerequisite to 7B.

Semester I: Nuclear structure, atomic structure, chemical bonding, organic chemistry. Environment topics include nuclear power, thermal pollution, radiation hazards, ecosystems, ecosphere, energy balances, chemical pollution, biodegradation, water purification, and sewage.

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

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 10A-10B takes the place of Chemistry 1A-1B and 5 for these students as prerequisites for further courses in chemistry.

11. Introductory Organic Chemistry (4) I, II

Three lectures and three hours of laboratory.

Prerequisite: Chemistry 1B.

Aliphatic and aromatic compounds including reaction mechanisms. For students needing only one semester of organic chemistry. Not open to students with credit in Chemistry 12.

12. Organic Chemistry (4) I, II

Three lectures and three hours of laboratory. Prerequisite: Chemistry 1B.

Properties and synthesis of organic compounds including reaction mechanisms. First half of a year course. Not open to students with credit in Chemistry 11.

13. Organic Chemistry Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Open only to students enrolled concurrently in Chemistry 12. The theory and practice of laboratory operations.

Experimental design, gathering of data, and processing of data in chemistry. 99. Experimental Topics (2-4) Refer to the catalog statement on Experimental Topics on page 106. 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** 109A-109B. Fundamentals of Physical Chemistry (3-3) Prerequisites for 109A: Chemistry 4, Mathematics 22, and Physics 2B and 3B. Not open to students with credit in Chemistry 110A. Prerequisites for 109B: Chemistry 109A. Not open to students with credit in Chemistry 110B. Fundamental principles of theoretical chemistry. This course cannot apply to the A.B. and certificate or B.S. major in chemistry. 109C. Fundamentals of Physical Chemistry Laboratory (2) II Six hours of laboratory. Prerequisite: Credit or concurrent registration in Chemistry 109B. Physico-chemical experiments, errors of measurement and technical report writing. 110A-110B. Physical Chemistry (3-3) I, II Prerequisites for 110A: Chemistry 5 and credit or concurrent registration in Physics 4C and Mathematics 52. Not open to students with credit in Chemistry 109A. Prerequisites for Chemistry 110B: Chemistry 110A. Not open to students with credit in Chemistry 109B. Theoretical principles of chemistry with emphasis on mathematical relations. 112. Organic Chemistry (4) I, II Three lectures and three hours of laboratory. Prerequisite: Chemistry 12. A continuation of Chemistry 12. 113. Organic Chemistry Laboratory (1) I, II Three hours of laboratory. Prerequisite: Open only to students enrolled concurrently in Chemistry 112. Theory and practice of laboratory operations. 114A-114B. Clinical Biochemistry (4-4) Two lectures and six hours of laboratory. Prerequisites: Chemistry 4 or 5, and 11 or 12. Principles of biochemistry and analytical methods applied to blood, urine, and other body fluids. This course cannot apply to the major in chemistry. 115A-115B. Fundamentals of Biochemistry (3-3) I, II Prerequisites: Chemistry 4 or 5, and 11 or 12. The chemistry of intermediary metabolism and its regulation. Not open to students with credit in Chemistry 116A-116B. 116A-116B. General Biochemistry (3-3) Prerequisites: Chemistry 109B or 110B, and 112.

The structure, function, metabolism, and thermodynamic relationships of chemical

entities in living systems. Not open to students with credit in Chemistry 115A-115B.

117. Biochemistry Laboratory (2) I, II

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Chemistry 115A or 116A.

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.

118. Advanced Physical Chemistry (3) II

Prerequisite: Chemistry 110B.

Mathematical tools essential to solving problems in chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.

### 127A. Inorganic Chemistry (3) I, II

Prerequisite: Credit or concurrent registration in Chemistry 109B or 110B.

The physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond.

22. Glass Blowing (1) I, II Three hours of laboratory.

Prerequisite: Chemistry 1B.

Elementary training in the manipulation of glass.

55. Problem Solving in Chemistry (1) I. II

Three hours of laboratory.

Prerequisites: Chemistry 5 and 12.

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# 127B. Inorganic Chemistry (3) I, II

Prerequisite: Chemistry 127A. An advanced systematic study of representative and transition elements and their compounds.

131. Theoretical Organic Chemistry (3) I, II

Prerequisites: Chemistry 109A or 110A, and 112.

The application of modern electronic theory to the physical and chemical properties of organic compounds.

### 135. CHEM Study (3) II

One lecture and six hours of laboratory.

Prerequisite: Chemistry 1B.

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.

### 154. Organic Qualitative Analysis (3) I, II

One lecture and six hours of laboratory.

Prerequisites: Chemistry 112 and credit or concurrent registration in Chemistry 109A or 110A.

The identification of organic compounds and mixtures.

155. Advanced Instrumental Methods (2) I, II

Prerequisites: Chemistry 112 and credit or concurrent registration in 110B. Advanced theory of chemical instrumentation.

156A-156B. Advanced Laboratory Techniques (2-2) I, II

Six hours of laboratory

Prerequisite: For 156A: Credit or concurrent registration in Chemistry 155. Credit or concurrent registration in Chemistry 55 is recommended. Chemistry 156A is prerequisite to 156B

Instrumental methods and physical chemistry concepts applied to advanced projects in chemistry. Emphasis on maintenance of the laboratory notebook with some report writing. 160A-160B. Principles of Chemical Engineering (3-3)

(Same course as Engineering 160A-160B.)

Prerequisite: Credit or concurrent registration in Engineering 108 or Chemistry 109A or 110A

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.

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

Refer to Honors Program.

# 170. Radiochemical Analysis (4) II

Two lectures and six hours of laboratory.

Prerequisite: Chemistry 109A or 110A.

Principles and techniques of radioactivity applied to the various fields and problems of chemistry. Instrumentation, tracer application, activation analysis, nuclear reactions and radiolysis.

### 180. Chemical Oceanography (3) II

Three lectures and occasional field trips. Prerequisite: Credit or concurrent registration in Chemistry 109B or 110B.

The application of the fundamentals of chemistry to the study of oceans.

# 191. Chemical Literature (1)

Prerequisite: Upper division standing in chemistry.

An introduction to the availability, scope and use of the chemical literature. 196. Selected Topics in Chemistry (1-3)

Prerequisite: Consent of instructor.

Selected topics in modern chemistry. May be repeated with new content. Maximum credit six units.

# 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.

### 199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Consent of instructor. Open only to students who have shown ability to do A or B work in Chemistry.

### **Graduate** Courses

200. Seminar (1-3)

An intensive study in advanced chemistry, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

210. Advanced Topics in Physical Chemistry (1-3) Prerequisite: Consent of instructor. Selected topics in physical chemistry. Maximum credit six units applicable on a master's degree. 211. Chemical Thermodynamics (3) Prerequisite: Chemistry 110B. Chemical thermodynamics and an introduction to statistical thermodynamics. 212. Chemical Kinetics (3) Prerequisite: Chemistry 110B. Theory of rate processes; applications of kinetics to the study of reaction mechanisms. 213. Quantum Chemistry (3) Prerequisite: Chemistry 110B. Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory. 214. Molecular Structure (3) Prerequisite: Chemistry 110B. Theory and techniques used in the determination of molecular structure. 220. Advanced Topics in Inorganic Chemistry (1-3) Prerequisite: Chemistry 127A. Selected topics in inorganic chemistry. Maximum credit six units applicable on a master's degree. 221. Mechanisms of Inorganic Reactions (3) Prerequisite: Chemistry 127A. Mechanisms in inorganic reactions with an emphasis on coordination chemistry. 222. Chemistry of the Nonmetals (3) Prerequisite: Chemistry 127A. An advanced systematic study of the nonmetallic elements and their compounds. 230. Advanced Topics in Organic Chemistry (1-3) Prerequisite: Chemistry 112. Selected topics in organic chemistry. Maximum credit six units applicable on a master's degree. 231. Mechanisms of Organic Reaction (3) Prerequisites: Chemistry 110B and 112. Reactivity and mechanism in organic reactions. 232. Advanced Organic Chemistry (3) Prerequisite: Chemistry 112. Applications and limitations of organic reactions from the viewpoint of synthesis, 250. Advanced Topics in Analytical Chemistry (1-3) Prerequisite: Chemistry 110B. Selected topics from the field of analytical chemistry. Maximum credit six units applicable on a master's degree. 260. Advanced Topics in Biochemistry (1-3) Prerequisite: Chemistry 116B. Selected topics in biochemistry. Maximum credit six units applicable on a master's degree. 261. Advanced Biochemical Techniques (2) Prerequisite: Chemistry 116A. Six hours of laboratory. Theory and practice of current research techniques in biochemical research. 262. Enzymology (2) Prerequisite: Credit or concurrent registration in Chemistry 109B or 110B. Theory and techniques used in the study of the mechanism of action of enzymes. 270. Nuclear Chemistry (2) Prerequisite: Chemistry 110B. Theoretical applications of radioactivity to chemistry, radiation chemistry, decay laws and processes, nuclear structure and reactions. 290. Bibliography (1) Exercise in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis. 291. Research Seminar (1)

Prerequisite: Consent of department chairman.

Discussions on current research by students, faculty, and visiting scientists. Each student will make a presentation based on the current literature.

297. Research (1-3) Cr/NC

Prerequisite: Consent of instructor. Research in one of the fields of chemistry. Maximum credit six units applicable on a

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298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisite: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# 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.

1. Elementary (4)

Four lectures and one hour of laboratory.

Pronunciation, oral practice, readings on Chinese culture and civilization, minimum essentials of grammar.

2. Elementary (4)

Four lectures and one hour of laboratory. Prerequisite: Chinese 1. Continuation of Chinese 1.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

103. Readings in Contemporary Chinese (4) Prerequisite: Chinese 2.

Readings in contemporary authors: poetry, short stories, essays.

104. Readings in Classical Chinese (4)

Prerequisite: Chinese 103.

Readings from Hsiao Ching, Mencius, Confucian Analects, and other classical sources. 155. Advanced Reading in Chinese (3-4)

Prerequisite: Chinese 104.

Extended, intensive reading in Chinese with emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units.

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.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units. Prerequisite: Consent of instructor.

# **Classical and Oriental Languages and Literatures** In the College of Arts and Letters

### Faculty

**Emeritus: Burnett** Professors: Schaber (Chairman), Warren Associate Professor: Genovese Assistant Professors: Eisner, Gefter, Woo, Yun

### Offered by the Department

Major in classics with the A.B. Degree in liberal arts and sciences.

Teaching major in foreign languages (concentration in Latin) for the single subject teaching credential.

Minor in classical humanities.

Minor in classics.

Courses in Arabic. (Refer to this section of the catalog under Arabic.) Courses in Chinese. (Refer to this section of the catalog under Chinese.) Courses in classics. (Refer to this section of the catalog under Classics.) Courses in Greek. (Refer to this section of the catalog under Greek.) Courses in Hebrew. (Refer to this section of the catalog under Hebrew.) Courses in Japanese. (Refer to this section of the catalog under Japanese.) Courses in Latin. (Refer to this section of the catalog under Latin.)

(For other courses in translation see comparative literature, history, humanities and philosophy.)

# Classics

### In the College of Arts and Letters

#### Faculty

Professors: Schaber, Warren Associate Professor: Genovese Assistant Professor: Eisner

Offered by the Department of Classical and Oriental Languages and Literatures Major in classics with the A.B. degree in liberal arts and sciences. Minor in classical humanities.

Minor in classics.

Teaching major in foreign languages (concentration in Latin) for the single subject teaching credential.

# **Classics** Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

# **Concentration in Classical Humanities**

Preparation for the major. Greek 1 and 2, or Latin 1 and 2. (10 units.)

Major. A minimum of 30 upper division units to include Classics 102A-102B, History 111A-111B, and Philosophy 101; nine units from classics, Anthropology 183, Art 153, Religious Studies 110, or Speech Communication 150; six units of Greek or Latin; and three units of Classics 199 as a directed senior project.

### **Concentration in One Language**

Preparation for the major. Greek 1 and 2, or Latin 1 and 2. (10 units.)

Major. A minimum of 30 upper division units to include 15 units from classics, History 111A, 111B, or Philosophy 101; 12 units of Greek, or 12 units of Latin; and three units of classics, Greek, or Latin.

Prerequisites are waived for classical humanities majors

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### **Concentration in Two Languages**

# Preparation for the major. Greek 1, 2, and Latin 1, 2. (20 units.

Major. A minimum of 30 upper division units to include 12 units from classics, History 111A, 111B, or Philosophy 101; nine units of Greek; and nine units of Latin.

# **Classical Humanities Minor**

The minor in classical humanities consists of a minimum of 15 units, nine units of which must be in upper division courses; in addition to courses in classics, up to six units may be selected from Anthropology 183, Art 153, Comparative Literature 52A, History 4A, 111A, 111B, Philosophy 101, Religious Studies 110, or Speech Communication 150.

# **Classics** Minor

The minor in classics consists of a minimum of 15 units, six units of which must be selected from upper division classics, Greek, or Latin courses, History 111A, 111B, or Philosophy 101. Nine units must be selected from Latin or from Greek.

### Classics (Concentration in Latin)

# For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the single subject teaching credential are being revised. For further information consult the department.

#### Lower Division Courses

#### (See also courses in Greek and Latin.)

20. Latin and Greek Word Derivation (3) A general and elementary course in philology. A study of Latin and Greek stems of most frequent occurrence in English, and of the English words derived from them. (Formerly numbered General Language 20.)

### 50. Scientific Terminology (2) I

Etymological and grammatical analysis of scientific terminology of Greek and Latin derivation.

### 70. The Heritage of Greece and Rome (3)

Greek and Roman art, literature, and institutions as reflected in the Western tradition. 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

### 102A-102B. Classical Literature (3-3)

Reading in translation of Greek and Latin masterpieces. Semester I: Prose and the epic; authors include Homer, Herodotus, Thucydides, Vergil, Apuleius. Semester II: Drama and the short poem; authors include Aeschylus, Sophocles, Euripides, Aristophanes, Sappho, Catullus, Ovid. Taught in English. Classics 102A is not prerequisite to 102B. (Formerly numbered Comparative Literature 102A-102B.)

110. Greek and Roman Mythology (3) Mythological elements in Greek and Roman art, literature, and religion.

# 140. Classical Civilization (3)

Greek and Roman civilization from Bronze Age to Late Empire. Integration of history, philosophy, literature, the arts, and society.

# 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.

# 199. Special Study (1-3) I, II

Prerequisite: Consent of instructor. Individual study. Maximum credit six units.

# **Comparative Literature** In the College of Arts and Letters

# Faculty

Faculty assigned to teach courses in comparative literature are drawn from departments in the College of Arts and Letters.

### Offered by Comparative Literature

Major in comparative literature with the A.B. degree in liberal arts and sciences. Minor in comparative literature.

# **Comparative Literature Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. No more than 48 units in comparative literature and English courses can apply to the degree.

A minor is not required with this major.

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

Major. A minimum of 24 upper division units to include 18 units in comparative literature courses. With the approval of the adviser, six units in one of the following interest areas: (1) Foreign Language Literature. Recommended for students who expect to do graduate work in comparative literature. Courses may be taken in literature of any foreign language. (2) English Language Literature. Courses may be taken in American and British literature. (3) Comparative Studies. Courses may be taken in areas with a "studies" orientation such as Afro-American Studies, Mexican-American Studies, Urban Studies, Women's Studies, Jewish Studies, and the like.

# **Comparative Literature Minor**

The comparative literature minor consists of a minimum of 15 units in comparative literature, nine units of which must be in upper division courses. The comparative literature minor is not available to students majoring in English.

### Lower Division Courses

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

#### 52A-52B. World Literature (3-3) I, II

Selected works from various continents and cultures. Semester I: prior to 1500; Semester II: since 1500.

#### 70A-70B. Asian Literature (3-3)

A survey of the literature of Asia. Semester I: traditional literature; Semester II: modern literature.

### 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.

### 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.

### **Upper Division Courses**

105. The Bible as Literature (3) I, II

Same course as English 105. Prose and poetry of the King James version. (Formerly numbered Comparative Literature 115.)

### 120. Medieval Literature (3)

Representative selections from authors of the Middle Ages. (Formerly numbered and entitled Comparative Literature 155, Literature of the Middle Ages.)

### 122. Continental Renaissance (3)

Representative selections from authors of the Renaissance period in continental Europe. (Formerly numbered Comparative Literature 156.)

124. Seventeenth and Eighteenth Century Continental Fiction (3)

Selected works by novelists and short story writers of continental Europe prior to 1800. 125. Nineteenth Century Continental Fiction (3)

Selected works by novelists and short story writers of continental Europe between 1800 and 1900. (Formerly numbered and entitled Comparative Literature 101A, Modern Continental Fiction.)

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### 126. Modern Continental Fiction (3)

Selected works by novelists and short story writers of continental Europe since 1900. (Formerly numbered Comparative Literature 101B.)

### 145. Modern Latin American Literature (3) I, II

Reading selections from major Latin American authors.

150. The Epic (3)

Selected epic poems from world literature; emphasizes the Western epic tradition from Homer to the present.

#### 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.

### 152. Drama (3)

Forms and themes in drama. Focus of course to be set by instructor. May be repeated once with new content. (Formerly numbered and entitled Comparative Literature 152A-152B, World Drama.)

### 153. Poetry (3)

A comparative approach to themes and forms in poetry. Focus of course to be set by instructor. May be repeated once with new content.

#### 160. Proseminar (3)

An intensive study of a topic to be selected by the instructor. May be repeated once with new content.

#### 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.

# 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.

#### 180. Afro-American Literature (3)

Selected works by black authors in Africa, North and South America, and the Caribbean; intercontinental influences and the theme of black identity.

# 185. Yiddish Literature (3) I, II

Selected works from the Jewish communities of Central Europe.

### 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.

# 190. Literary Movements (3) Cr/NC

A movement or theme in world literature—such as symbolism, realism, existentialism, alienation, or revolution. Maximum credit six units.

# 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.

### 192. Major Individual Authors (3)

In-depth study of the works of a major author, such as Sophocles, Dante, Cervantes, Goethe, Dostoyevsky or Proust. Maximum credit six units.

### 193. Literature and Other Disciplines (3) Cr/NC

Comparative study of relationship between literature and another field, such as art, music, philosophy, psychology, political science, or social science. Examples: novel and film, black literature and black music, theatre and politics. May be repeated with new content. Maximum credit six units.

# 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

# 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. 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.

199. Special Study (1-3) I, II Cr/NC

Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

# **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

Major in criminal justice administration; with the B.S. degree in applied arts and sciences. Master of Science degree in criminal justice administration.

# **Criminal Justice Administration Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Political Science 2, Sociology 1, Public Administration 90 and a lower division course in statistics. Students who plan to enter the criminal justice field (police, courts, corrections) are strongly advised to take a minimum of 21 units of lower-division work in criminal justice or criminology at an institution offering work in this field.

Major. A minimum of 36 upper division units to include Public Administration 140, 197 or 198; and Criminal Justice Administration 146; 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.

# **Upper Division Courses**

110. Law Enforcement Administration (3)

Prerequisite: Sociology 1.

Administrative relationships within the criminal justice process with special reference to problems of courts and police and probation agencies.

- 111. Administration of Juvenile Justice (3)
- Prerequisite: Sociology 114 or Criminal Justice Administration 110 or 146.

Administration of programs for treatment of juvenile offenders by police, probation and courts.

#### 112. The Administration of Criminal Law (3)

Prerequisite: Criminal Justice Administration 110 or 146 or Political Science 135 or 139A. Basic concepts of the criminal law; elements of crime and the administrative processes of law enforcement.

113. Selected Topics in Criminal Justice Administration (3)

Selected current topics in criminal justice administration. Maximum credit six units,

116. Contemporary Correctional Administration (3) II

Prerequisite: Sociology 113 or 114.

The problems encountered in administering modern correctional institutions, forestry and road camps, detention homes, and jails. (Formerly numbered Sociology 116.)

- 117. Juvenile Deviance and The Administrative Process (3)
- Prerequisite: Sociology 114, or Criminal Justice Administration 110 or 146. The activity of those in the administrative system who process juvenile deviance.

#### 146. Administration of Justice (3) I, II

Prerequisite: Public Administration 140 or Political Science 138 or 139A.

Fundamental problems in judicial administration in law enforcement, organization and management, and issues in judicial reform and in public safety.

### 188. Probation and Parole (3) I

Prerequisite: Criminal Justice Administration 116 or 146.

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. (Formerly numbered Social Welfare 188.)

### **Graduate Courses**

210. Seminar in the Administration of Criminal Justice (3) Prerequisite: Criminal Justice Administration 110 or 146.

Administrative problems of criminal justice systems.

# 211. Seminar in Correctional Group Method (3)

Prerequisite: Sociology 113 or 114 or Criminal Justice Administration 111 or 188. An exploration of current research and use of group methods in the correctional segment of the criminal justice system.

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212. Seminar in the History of Correctional Reform (3)

Prerequisite: Criminal Justice Administration 111 or 188 or Sociology 113 or 114. The historical development of concepts and practices in the field of corrections with emphasis upon developments in the United States.

216. Seminar in Correctional Administration (3) Prerequisite: Criminal Justice Administration 116.

Selected problems in the administration of correctional problems and institutions. Maximum credit six units applicable on a master's degree.

# Drama

### In the College of Professional Studies

### Faculty

Emeritus: Povenmire, Sellman Professors: Amble, Powell, Stephenson (Chairman) Associate Professors: Harvey, Howard, Owen Assistant Professors: Annas, Bellinghiere, Lessley, McKerrow

### Offered by the Department

Master of Arts degree in drama. Major in drama with the A.B. degree in applied arts and sciences. Minor in drama.

Single subject teaching credential in English in area of drama.

### **Drama** Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Drama 5, 30, 31, 40, and 50. (15 units.) Note: Drama 10 and 20 should be taken as part of the general education requirements.

Major. A minimum of 24 upper division units in drama to include Drama 120, 132, 140A, 157, 158, 160A, 160B, and four units of electives in drama (except Drama 142 and 199) selected with the approval of the adviser.

In addition to course requirements the student must participate in a total of five Major Theatre performances and three Studio or Experimental Theatre activities.

# **Emphasis** in Design for Drama

Preparation for the major. Drama 5, 30, 31, 40, and 50. (15 units.) Note: Drama 5 and 10 should be taken as part of the General Education requirements.

Major. A minimum of 24 upper division units in drama to include Drama 140A, 140B, 145A, 148, 152A, 157, 160A, 160B. In addition to course requirements the student must participate in a minimum of five Major Theatre performances and three Studio or Experimental Theatre activities.

### **Emphasis in Design for Television**

Preparation for the major. Drama 5, 40, 50, Telecommunications and Film 2A-2B, 10 and 83. (23 units.)

Major. A minimum of 24 upper division units to include Drama 140A, 140B, 148, 152A, Telecommunications and Film 150, 156, 180, and 162 or 184.

# Drama Minor

The minor in drama consists of a minimum of 21 units in drama to include Drama 5, 30, 31, 40, 50 and six units of upper division electives in drama.

# Drama

# For the Single Subject Teaching Credential in English

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in applied arts and sciences.

The requirements for the single subject teaching credential in English which includes the area of drama are being revised. For further information consult the department.

### Lower Division Courses

# 5. Introduction to the Theatre (3) I, II

Three lectures per week and 15 hours of laboratory per semester.

A survey of theory and practice in the contemporary theatre, including its literary, critical, and technical aspects viewed against historical backgrounds.

10. Voice and Diction for the Theatre (3) I, II

Prerequisite: Drama 5.

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.

### 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:

# 30. Elementary Acting (3) I, II

Prerequisite: Drama 5.

Three lectures per week and 30 hours of laboratory per semester.

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.

### 31. Intermediate Acting (3) I, II

Three lecture-demonstrations per week and 30 hours of laboratory per semester. Prerequisite: Drama 30.

Continuation of Drama 30, emphasizing the application of fundamental skills to the problems of emotion, timing, characterization, and ensemble acting.

### 32. Movement and Mime for the Theatre (3) I

# Prerequisite: Drama 5.

Two lectures and three hours of laboratory.

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.

### 40. Dramatic Production (3) I. II

- Prerequisite: Drama 5.
- Two lectures and three hours of laboratory.

Technical practices and organization of production for theatre and television. Practice in drafting and construction of scenery for the college productions.

### 47. Sound in the Theatre (2) I

One lecture and three hours of laboratory.

Techniques, theory, and procedures necessary to develop sound, music, and effects integrated into theatre production.

50. Elementary Stage Costume and Makeup (3) I

#### Prerequisite: Drama 5.

Two lecture-demonstrations and three hours of laboratory.

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.

### 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.

# 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

# 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.

# 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.

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# 111. Styles in Creative Dramatics (3) I, II

Prerequisite: Drama 110.

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.

115. Directing for Children's Theatre (3) II

Prerequisite: Drama 55.

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.

120. Play Analysis (3) I, II

Prerequisites: Drama 5 and 20.

Representative dramas for the stage are read, discussed and analyzed in writing in terms of environment, structure, action, character and style.

121. Theatre Criticism (3) I

Prerequisite: Drama 120.

A consideration of the problems and practices of dramatic criticism as applied to theatrical production in the past and present.

122. Playwriting, the One-Act Play (3) I, II

Lectures, discussion and reading of one-act plays written by the students.

123. Playwriting, the Long Play (3) II

Prerequisite: Drama 122

Lectures and analytical discussions of full-length plays written by students.

125. Original Dramatic Works: Production Laboratory (3) II

Nine hours of laboratory.

Prerequisites: Drama 31 and consent of instructor.

Staging of original one-act and full-length plays, in traditional and experimental productions, working in conjunction with the students in the playwriting and directing classes.

126. Theory of Production for the Musical Stage (3) I

Prerequisites: Drama 31 and consent of instructor.

Theory and principles of production of modern musicals.

129A-129B. Children's Theatre Workshop (3-3)

Prerequisite: Drama 115.

Production of plays for child audiences, with emphasis on elementary and junior high levels. Practical experience through participation in university-sponsored productions.

130. Accents and Dialects for the Stage (3) II Prerequisites: Drama 10 and 30.

Various accents and dialects most frequently occurring in stage productions.

131. Advanced Acting Theory (3) I, II Prerequisite: Drama 30 or 31. The theories and principles of acting.

132. Advanced Acting (3) I, II Prerequisite: Drama 31.

Problems in characterization: acting styles of the great periods in theatre history.

137. High School Play Directing (2)

Two hours of laboratory

Prerequisites: Drama 40 and 157.

Theory and practice of selecting, directing, and producing dramatic presentations in high school, with emphasis on low-budget and creative methods and techniques most practicable and effective in the high school drama program. 140A. Scenic Design (3) I

Prerequisite: Drama 40.

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

140B. Styles in Scenic Design (3) II

Prerequisite: Drama 140A.

History of scenic design and the application of contemporary styles to various types of dramatic production for stage, television and cinema.

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.

145A-145B. Stage Lighting (3-3) I, II

Two lectures and three hours of laboratory. Prerequisite: Drama 145A is prerequisite to 145B.

Light, color, lighting instruments, and control equipment, including the design and

planning of lighting for plays.

148. Advanced Dramatic Production (3)

Two lectures and three hours of laboratory.

Prerequisite: Drama 40.

Scenery drafting and construction, with attention to the multiple-set play. Planning of scenery construction and rigging for stage and television productions.

151. Costume, Movement, and Manners (3) I

Prerequisite: Drama 50.

Interrelationship of period costumes on the movement and manners of the time and their application on the stage.

152A-152B. Costume History and Design for the Theatre (3-3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Drama 50. Drama 152A is prerequisite to 152B.

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.

B. Restoration period to the present. Designing costumes for the whole play.

### 154. Costume Construction Techniques (3) I

Two lecture-demonstrations and three hours of laboratory.

Prerequisites: Drama 140A and 152A-152B.

Period pattern drafting, draping, cutting, construction. Wig, millinery, armour, mask, accessory construction. Costume paint and dye techniques.

### 157. Stage Direction (3) I, II

Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.

Prerequisites: Drama 120, 132 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 127A.)

158. Stage Direction: Scenes (2) I, II

One lecture and three hours of laboratory; attendance of one-act plays and selected performances.

Prerequisites: Drama 157 and consent of instructor.

Experience and group evaluation in directing scenes in acting classes. (Formerly numbered Drama 128.)

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 157 and consent of instructor. (May be substituted for Drama 158 as requirement in directing.)

Experience and group evaluation in directing one-act plays before departmental or public audiences. (Formerly numbered Drama 127B.)

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 160B may be taken without 160A.

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

Refer to Honors Program.

175. Theatre Management and Promotion (3) I, 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.

178. Directing the Period Play (3) II

Two lectures and three hours of laboratory.

Prerequisite: Drama 159.

Staging and directing problems related to the production of plays from the great periods in theatre history. Special attention to dramatic values, style, mood, creative directing and production approaches.

180. Methods and Materials of Instruction (2) I

Professional preparation emphasizing organization and practices in the teaching of Dramatic Arts. (Formerly numbered Education 1210.)

### 172 / Drama

### 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.

199. Special Study (1-3) I, II

Individual Study. Maximum credit six units. Prerequisite: Consent of instructor.

### Graduate Courses

### 200. Research and Bibliography (3)

Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to the various areas of speech. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.

### 235. Seminar in Children's Theatre (3)

Prerequisites: Drama 110 and 115.

Modern developments and trends in children's theatre in educational, civic, and professional programs in the United States and England.

243. Seminar in Staging Practices for Theatre and Television (3)

An investigation of the recent developments of modern staging facilities. The application of technological advances and electromechanical devices to the scenic arts for theatre and television.

244. Seminar in Stage Direction (3)

Prerequisite: Drama 157.

Projects in the aesthetic principles and the practices of stage direction with an emphasis on styles and historic periods.

245. Seminar in Lighting for Stage and Television (3)

Prerequisite: Drama 145A or 145B.

Projects concerned with the aesthetic and technical problems of stage lighting.

246. Seminar in Design for Stage and Television (3)

The principles of design in the theatre with an emphasis on the historical development of theatrical costume or scenic environment. The investigation of recent tendencies in styles and their evolution. Each section may be taken once for credit.

A. Costume Design

Prerequisite: Drama 152A or 152B.

B. Scenery Design

Prerequisites: Drama 140A and 140B or 148.

247. Seminar in History of Theatre and Drama (3)

Prerequisites: Drama 120, 160A, and 160B.

A. British and Continental Theatre

B. American Theatre

248. Seminar in Dramatic Theory (3)

Prerequisites: Drama 120, 160A, 160B, and 200.

Problems in producing works of such playwrights as Ibsen, Strindberg, Chekhov, Shaw. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3) Cr/NC

Individual Study. Maximum credit six units applicable on a master's degree.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

### In the College of Arts and Letters

Faculty

Emeritus: Chadwick, Ryan

Professors: Anderson, Babilot, Barckley, Bridenstine, Flagg, Gifford, Jencks, Leasure, McClintic, Neuner, Poroy, Turner, Venieris

Associate Professors: Clement, Hambleton, Hardesty, Kartman, Madhavan, Nam, Popp, Sebold (Chairman)

Assistant Professor: Stewart

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.

Single subject teaching credential in social sciences in the area of economics.

### **Economics** Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Two plans are provided for the major in economics: Plan A for those students expecting to pursue the study of economics beyond the A.B. degree; and Plan B for those students with a liberal arts interest, or for those who are interested in prelegal education or a combined economics-business program.

### Plan A

Preparation for the major. Economics 1A and 1B, or 103A and 103B; 2; and Mathematics 50. (14 units.)

Major. A minimum of 24 upper division units in economics to include Economics 104A, 104B, 107, 141, and 12 units of electives. Economics 103A and 103B may not be used to fulfill minimal upper division requirements.

Minor. A minor is not required with this major; however, the student is strongly advised to take a minor in mathematics. Recommended courses are Mathematics 40, 50, 51, 52, 121A-121B, 140A-140B, and 150A-150B.

#### Plan B

Plan B is a flexible program to meet the needs of several groups of students. Advisory programs of study are available in the Economics Department office for the following groups: (a) prelaw majors; (b) a broad-ranging liberal arts interest; and (c) a combined economics and business interest.

Preparation for the major. Economics 1A and 1B, or 103A and 103B, and 2. Students planning careers in law or business are advised to take at least one semester of accounting.

Major. A minimum of 24 upper division units in economics to include Economics 100A, 100B, and 12 to 18 units of electives. Six of the 24 units may be in a related field to be selected with the approval of the departmental Academic Requirements Committee. (Economics 103A and 103B may not be used to fulfill minimal upper division requirements in the major.)

Minor. A minor is not required with this major.

# **Economics** Minor

The minor in economics consists of a minimum of 15 units in economics, nine units of which must be in upper division courses; Economics 103A and 103B are not acceptable.

### Economics

For the Single Subject Teaching Credential in Social Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

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 single subject teaching credential in social sciences which includes the area of economics are being revised. For further information consult the department.

# 174 / Economics

### Lower Division Courses

# 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 103A.

### 1B. Principles of Economics (3) I, II

### Prerequisite: Economics 1A.

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 103B.

### 2. Statistical Methods (3) I, II

Prerequisite: Mathematics 3 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 for, or concurrent enrollment in, another course in statistics.

#### 3. Current Topics in Economics (3) I, II

A nontechnical course covering selected current policy issues and problems such as poverty, war and defense, educational economics, urban problems, and economics of racial discrimination.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

#### 100A. Intermediate Economic Theory (3) I, II Prerequisite: Economics 1B or 103B.

Economic theory with special reference to the theory of the firm and the industry; value and distribution. Credit will not be given for both 100A and 104A.

### 100B. Intermediate Economic Theory (3) I, II

Prerequisite: Economics 1B or 103B.

Economic theory with special reference to national income analysis and the theory of investment. Credit will not be given for both 100B and 104B.

### 101. History of Economic Thought (3) I, II

Prerequisite: Economics 1B or 103B.

The development of economics. Contributions of schools of thought and individual writers are examined with regard to their influence on economic theory and policy.

### 102. Comparative Economic Systems (3) I. II

Prerequisite: Economics 1B or 103B.

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.

103A. Economic Principles, Institutions, and Policies (3) I, II

Prerequisite: Six units in political science, history, or sociology.

Income and employment theory and its applications. Not open to students with credit in Economics 1A. May not be used to fulfill minimal upper division requirements in the economics major or minor or special major.

103B. Economic Principles, Institutions, and Policies (3) I, II

Prerequisite: Economics 1A or 103A.

Price theory and its applications. Not open to students with credit in Economics 1B. May not be used to fulfill minimal upper division requirements in the economics major or minor or special major.

104A. Microeconomic Analysis (3) I

Prerequisites: Economics 1B or 103B, and Math 50.

Mathematical interpretation of microeconomic theory. Credit will not be given for both 100A and 104A.

# 104B. Macroeconomic Analysis (3) II

Prerequisites: Economics 1B or 103B, and Math 50.

Mathematical interpretation of macroeconomic theory. Credit will not be given for both 100B and 104B.

### 105. Welfare Economics (3) II

Prerequisites: Economics 1B or 103B, and 100A.

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.

107. Quantitative Economics (3) I

Prerequisites: Economics 1B or 103B, and Math 50.

The quantitative approach to economic problems. The use of mathematics in economic analysis.

### 109. Advanced Economic Theory (3) II

Prerequisites: Economics 100B or 104B, and 107.

Recent contributions to the advanced theory of the firm, consumer demand, employment and growth.

110. Economic History of Europe (3) I

Prerequisite: Economics 1B or 103B.

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.

111A-111B. Economic History of the United States (3-3)

Prerequisite: Economics 1B or 103B.

American economic development and national legislation in the fields of agriculture, industry, and commerce. Semester I: 1600-1865. Semester II: 1865 to the present.

112. Capitalist Economy (3) Prerequisite: Three units in economics.

The relationship between the dominant economic and political institutions of capitalist organization and the major social problems of modern capitalism.

114. Economic Problems of Latin America (3) I

Prerequisite: Economics 1B or 103B. Economic development, institutions, and problems of Latin America.

115. Economic Problems of South and East Asia (3) I

Prerequisite: Economics 1B or 103B.

Economic development, institutions, and problems of China, India and Pakistan, Japan, and Southeast Asia.

118. The Economies of the Soviet Union and Eastern Europe (3)

Prerequisite: Economics 1B or 103B.

The development, institutions, and problems of the Soviet and East European economies. 119. Economic Problems of Africa and the Middle East (3) II

Prerequisite: Economics 1B or 103B.

Economic development, institutions, and problems of Africa and the Middle East.

# 120. Economics of the Ocean (3)

Prerequisite: Economics 1B or 103B.

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.

### 131. Public Finance (3) I, II

Prerequisite: Economics 1B or 103B.

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.

### 132. Public Economics (3) Prerequisite: Economics 100A or 131.

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.

# 135. Money and Banking (3) I, II

Prerequisite: Economics 1B or 103B.

The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.

136. Policies for Macroeconomic Stabilization (3)

# Prerequisite: Economics 1A or 103A.

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.

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### 138. Urban and Regional Economics (3) I, II

Prerequisite: Economics 1B or 103B.

Major influences affecting city location and growth; role of private and governmental institutions in influencing residential and other uses of land; major considerations in appraising, managing, financing, marketing, developing and taxation of urban property. Discussion of San Diego problems.

### 139. Location Theory (3)

Prerequisite: Economics 138.

The optimal location of economic activities. The effects of spatial distribution of resources and markets on the locational equilibrium of the firm.

#### 141. Econometrics (3) II

Prerequisites: Economics 2 and 107.

Measurement in economics. The construction and testing of simple economic hypotheses. Use of economic models involving multiple-regression analysis.

### 142. Business Cycles (3) I

Prerequisite: Economics 1B or 103B.

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.

# 150. Labor Problems (3) I, II

Prerequisite: Economics 1B or 103B.

Labor organizations and their policies, wages, strikes, unemployment, social insurance, child labor, labor legislation, plans for industrial peace, and other labor problems.

152. Collective Bargaining (3) II Prerequisite: Economics 1B or 103B.

Structures of labor relations; management and union problems; public policy and collective bargaining; simulation of collective bargaining experiences.

### 153. Comparative Labor Problems (3) I

Prerequisite: Economics 1B or 103B.

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.

154. Economic Aspects of Human Resources (3) I, II

Prerequisite: Economics 1B or 103B.

Analysis of health, education, and manpower within the context of government expenditure, economic growth, and the theory of human capital.

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

Refer to Honors Program.

167. Contemporary Issues (3) I, II Prerequisites: Economics 100A and 100B.

Current policy issues and problems from an economic point of view. Maximum credit six units. An undergraduate seminar.

# 170. Government and Business (3) I. II

Prerequisite: Economics 1B or 103B.

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.

171. Transportation Economics (3) I

Prerequisite: Economics 1B or 103B.

Economic impact of the availability and cost of transportation services. Organization, rate-making practices, financing and regulation of transportation agencies: air, surface, and water. Current issues of national transportation policy.

# 172. Public Utilities (3) II

Prerequisite: Economics 1B or 103B.

Economics and regulation of utility enterprises. Growth, pricing, demand and cost behavior, financing, regulatory principles and techniques. Public power and other current policy issues.

173. Economics and Ecology (3) I, II

Prerequisite: Economics 1B or 103B.

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.

174. Economic Concentration and Monopoly Power (3) I

Prerequisite: Economics 1B or 103B.

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.

175. Industry Studies (3) II

Prerequisite: Economics 1B or 103B.

Evaluation of the structure, conduct and performance of selected industries in terms of social and economic goals.

185. Poverty in the United States (3) II

Prerequisite: Economics 1B or 103B.

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.

# 189. Population and Economic Growth (3)

Prerequisite: Economics 1B or 103B. Interrelationship between the components of population change (fertility, mortality, and

migration) and economic growth in developed and underdeveloped areas.

190. International Economic Problems (3)

Prerequisite: Economics 1B or 103B. Not open to students with credit in Economics 191 or 192.

International problems, economic communities, organizations, and other selected topics. 191. International Trade Theory (3)

Prerequisites: Economics 100A and 100B, or 104A and 104B.

The pure theory of international trade and commercial policy.

192. International Monetary Theory and Policy (3) Prerequisite: Economics 100B or 104B or 135.

Balance of payments, international capital movements and foreign exchange in relation to current theories and policies.

### 194. Capital and Growth Theory (3)

Prerequisites: Economics 100A and 100B, or 104A and 104B.

Factors affecting the capital supply and the rate of growth of a developed economy.

195. Economics of Underdeveloped Areas (3) II

# Prerequisite: Economics 1B or 103B.

The nature and causes of economic underdevelopment. Problems of and policies for the economic development of underdeveloped areas of the world.

# 197. Research Design and Method (3) I, II

Prerequisite: Economics 2.

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.

# 198. Investigation and Report (3) I, II

Open to economics majors only.

Independent study and investigation. Guidance in the collection, organization, and presentation of factual material. May be repeated for a maximum of six units; maximum credit in 198 and 199 limited to six units.

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

### Graduate Courses

200A. Seminar in Advanced Economic Theory (3) Prerequisites: Economics 100A and 100B, or 104A and 104B; and 107. Theory of consumer and producer behavior. Determination of prices and resource allocation patterns in a market economy; partial and general equilibrium.

Theory of money, employment, and income determination. Alternative theories of consumption, investment, price level and rate of interest. Causes of instability in short and long run.

# 201A-201B. Seminar in the Development of Economic Thought (3-3)

Prerequisite: Twelve units in economics. A critical study of the development of economic thought.

200B. Seminar in Advanced Economic Theory (3) Prerequisites: Economics 100A and 100B, or 104A and 104B; and 107.

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### 202. Seminar in Comparative Economic Systems (3)

Prerequisite: Economics 102 or 115 or 118.

Topics in comparative economic systems; the Soviet economy, the economy of communist China, and related subjects.

203. Economic Analysis (3)

Prerequisite: Classified graduate standing.

The theory of the firm in a market economy. Not open to students with credit in Economics 100A and 100B; not applicable toward a master's degree in economics.

206. The Public Economy (3)

Prerequisite: Economics 131 or Public Administration 162.

Determinants of the supply and demand for public goods; the social decision-making processes in determining public goods; supply; financing public goods; taxes and expenditures; planned program budgeting and cost-benefit analysis. Not applicable toward a master's degree in economics.

### 208. Development Planning (3)

Prerequisite: Economics 195.

Role of government in development. Choice of target and policy variables. Planning techniques and their application to the national development problems.

210. Seminar in Economic History (3)

Prerequisite: Economics 110 or 111A or 111B.

Individual study and group discussion on selected topics in economic history.

231. Seminar in Public Finance (3)

Prerequisite: Economics 131.

Advanced study of public finance problems and literature; research.

235. Seminar in Monetary Economics (3)

Prerequisite: Economics 135.

Analysis of theoretical issues associated with the demand for money, the money supply and process of money creation. Emphasis upon interaction of monetary and real factors in domestic-international money and financial markets.

### 238. Seminar in Urban and Regional Economics (3) Prerequisite: Economics 138.

Urban and regional economics; individual research and reports.

241. Seminar in Econometrics (3)

Prerequisite: Economics 141.

The construction of large economic models. Identification, causal ordering and estimation. Simultaneous-equation techniques and other selected topics.

250. Seminar in Labor Economics (3) Prerequisite: Economics 150 or 152.

Individual study and group discussion of selected topics in labor economics.

253. Comparative Labor Seminar (3)

Prerequisite: Economics 150 or 153.

Research in comparative labor problems, including problems of labor and social legislation, medical economics, poverty problems, labor force structural problems, and international labor movements.

272. Seminar in Utilities and Water Resources (3)

Prerequisite: Economics 172 or 173.

Advanced study and group discussion of selected topics in utility economics and regulation, and the economics of water resource development.

274. Seminar in Economic Concentration and Monopoly Power (3) Prerequisites: Economics 174, or Economics 100A and 170. Selected topics in the field of economic concentration and monopoly.

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's thesis.

292. Seminar in International Economics (3) Prerequisite: Economics 190 or 191.

Resource allocation, income distribution, commercial policies, capital movements, balance of payments, and international monetary institutions. 295. Seminar in the Economics of Underdeveloped Countries (3)

Prerequisite: Economics 195.

Theories regarding underdevelopment and policies for development of economically underdeveloped countries. 297. Research (3) Cr/NC

Prerequisites: Classified graduate standing and consent of instructor. Independent research project in an area of economics.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Education

In the School of Education

Member of the American Association of **Colleges for Teacher Education** 

### Faculty

Emeritus: Alcorn, Apple, Bacon, Bradley, Campbell, Corbett, Hammack, E., Hammack, I., Hunter, Kinder, Linley, Madden, White, Yarborough

Professors: Anderson, E.L., Anderson, P.S., Anthony, Arciniega (Dean), Baker, Ballantine, Blanc (Assistant Dean), Briggs, Bruce, Brydegaard, Charles, Crum, Cummins, Erickson, Fishburn, Fisher, Friedrich, Gast, Gates, Gega, Goodson, Gray, Groff, Halfaker, Hawley, Hill, W.O., Holt, Huls, Inskeep, Kendall, La Pray, Lienert, LuPone, Malcolm, McClard, Meek, Miller, Mitchell, Nardelli (Associate Dean), Person, Petteys, Platz, Prouty, Rixman, Ross, Rowland, Samuels, Schrupp, Servey, Singer, Smith, H.R., Smith, R.D., Stautland, Stough, Tossas, Trimmer, Wetherill, Wilding

Associate Professors: Becker, Becklund, Bee, Berg, Burian, Burnside, Carnevale, Chamley, Clark, Cleveland, Doorlag, Duckworth, Elliott, Fearn, Forbing, Ford, Harrison, Holman, Kaatz, Mazon, McCabe, McCoy, McLevie, Melton, Mooers, Moreno, Morris, W. P., Murphy, Nagel, Pehrson, Retson, Richman, Shaw, Steckbauer, Strom, Walsh, Warburton, Yesselman

Assistant Professors: Altamura, Atherton, Birch, Botkin, Cochran, Curry, Dawson, Hill, P.J., Klann, Manjos, McAllister, McFarlane, Morris, J., Reel, Thompson, Treadway, Weir Lecturer: Wright

Offered by the School of Education

Master of Arts degree in education with concentrations in ten areas and a Master of Science degree in counseling. (Described in the Graduate Bulletin. Also refer to the section in this catalog on the School of Education.)

B.V.E. degree. (Described in the section on the School of Education.)

Teaching credentials in all areas. Refer to the section on the School of Education. Minor in Educational Technology and Librarianship.

# Educational Technology and Librarianship Minor

The minor in Educational Technology and Librarianship consists of a minimum of 15 units in Education in the area of Educational Technology and Librarianship, six units of which must be in upper division courses.

# Lower Division Courses

99. Experimental Topics (2-4)

Refer to catalog statement on Experimental Topics on page 106. 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** 

# Single Subject Credential

# 100A. The Secondary School (3) I, II

To screen, advise, and complete admission requirements. Includes field work assignment, demonstration of oral and writing competencies, and initial teacher professional competencies.

- 100B. Humanistic and Social Aspects of Teaching (4) I, II Prerequisites: Education 100A and admission to Secondary Teacher Education. To be
- taken concurrently with Education 100C and 100F.

Teacher competencies as they relate to values, awareness, self-concept, rights and responsibilities, school organization, and secondary school problems.

100C. Behavioral and Psychological Aspects of Teaching (4) I, II

Prerequisites: Education 100A and admission to Secondary Teacher Education. To be taken concurrently with Education 100B and 100F.

Teacher competencies as they relate to learning theories, adolescent growth, self-assessment, measurement and evaluation.

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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.

100E. Instructional Media, Equipment and Production (1) Cr/NC I, II

Basic audiovisual equipment operation, production of inexpensive instructional materials, and application of learning theory to the utilization of instructional materials.

100F. Student Teaching (3) I, II

Prerequisites: Education 100A and admission to Secondary Teacher Education. To be taken concurrently with Education 100B and 100C.

On-site, part-time experience to implement teacher competencies developed in Education 100B and 100C.

### 100G. Student Teaching II (9) I, II

Prerequisites: Education 100A, 100B, 100C, 100D, 100E, 100F. To be taken concurrently with Education 100H.

On-site, full-time experience to implement teacher competencies as developed from the total professional sequence.

### 100H. Student Teaching Proseminar (3) I, II

Prerequisites: Education 100A, 100B, 100C, 100D, 100E, 100F. To be taken concurrently with Education 100G.

To plan and organize instruction in relation to all competencies acquired and to be implemented in an on-site, full-time student teaching assignment.

### **Social Foundation**

### 100J. The Secondary School (4) I, II

Prerequisite: To be taken concurrently with Education 180B.

American education in its social and historical setting. The secondary school curriculum, and philosophies, issues, and social forces that influence the school. Not open to students with credit in Education 101 or 102. (Formerly numbered Education 100.)

# 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. Not open to students with credit in Education 100J.

105. Education for Minority Youth (3) I, II, S

Specific behavior patterns of minority youth and their effect upon the school learning process.

### **Psychological Foundations**

# 110. Psychological Foundations of Education for Secondary Teachers (5) I, II

Five lectures and instructional media laboratory. Prerequisites: Admission to Teacher Education and education program approved by the

Coordinator of Secondary Education. To be taken concurrently with Education 180A. The nature of growth and development, principles and theories of learning, guidance

practices, tests and measurements. Not open to students with credit in Education 112 or 113. 111. The Learner in the Elementary School (3) I, II, S

Prerequisites: Psychology 1 and admission to Elementary Teacher 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 70 and Psychology 106.

# 112. The Learning Process in the Elementary School (3) I, II, S

Prerequisite: Education 111.

Psychological principles for effective classroom teaching; techniques of measurement and evaluation for the diagnosis and improvement of learning.

# 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. Not open to students with credit in Education 110.

114-S. Interpretation of Early Childhood Behavior (3) Irregular

For kindergarten-primary teachers, treating the analysis and interpretation of early childhood behavior. Emphasis on understanding and interpreting the causative factors in typical behavior of children to parents, social workers, teachers, and others concerned with the guidance of kindergarten-primary children.

115. Guidance in Elementary Education (3) I, II, Irregular

A study of the basic principles of guidance and their function in the educational process as applied in the elementary school.

### 116A-116B-116C. Child Study Laboratory I, II

Offered only in Extension.

Prerequisite: Education 116A is prerequisite to 116B, and 116B to 116C.

Development of background and procedures for child study and their application to field situations. Field work required. For teachers in service.

### 117. Teacher Effectiveness Training (2 or 3)

Prerequisites: Psychology 1 and credit or concurrent registration in student teaching. Skill training in modifying undesirable behavior of individuals or groups, resolving conflicts, solving problems, and fostering improved thinking through group discussion.

#### 137. Reading Difficulties (3) I, S

Two lectures and two hours of laboratory.

Prerequisites: Education 112, and 131A or 122

Reading difficulties, their causes, prevention and correction. Remedial practices in reading useful to the classroom teacher, school counselor and reading specialist.

### 151. Measurement and Evaluation in Elementary Education (3) I, II, S

Should follow Education 112 for elementary credential candidates.

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.

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. Not open to students with credit in Education 120.

153. Quantitative Methods in Educational Research (3) I, II

Basic tests of statistical significance with special reference to the interpretation of educational data.

### Methods-Secondary

### 120. The Teaching Process (3) I, II

To develop teacher competency at the secondary level in professional and community relationships, general methods and materials, planning for teaching, and evaluating learning activities.

121. Methods and Materials of Instruction: Major (2) Minor (2) except Education 121E (3) Lecture courses, except that Education 121K and 121N meet 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 section 121 are as follows:

ffered in the Fall Semester
B. Methods in English
C. Methods in Home Economics
D. Methods in Industrial Arts
E. Methods in Foreign Languages
F. Methods in Mathematics
K. Methods in Physical Science
L. Methods in Speech Communication
M Methods in Social Science
N. Methods in Life Science
fored in the Spring Semester
P. Mothods in English
D. Methous in Linguist

C. Methods in Home Economics

- D. Methods in Industrial Arts E. Methods in Foreign Languages
- F. Methods in Mathematics K. Methods in Physical Science
- M. Methods in Social Science
- N. Methods in Life Science
- V. Methods in General Science

### **Offered Irregularly**

- P. Methods in Health Education
- H. Methods in Phys. Ed. (Men)
- I. Methods in Phys. Ed. (Women)

# 122. Reading in Secondary Education (3) Irregular

The nature of the reading program, development of techniques and skills, vocabulary development, reading in the content fields, the differentiated attack, measurement, diagnosis, and remediation.

126. Workshop in Secondary Education (3 or 6) Irregular

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.

# 128A. Principles of Adult Education (2)

History, philosophy, objectives and administration of adult education.

128B. Methods and Materials in Adult Education (2)

Identification, selection and utilization of teaching methods, techniques and materials appropriate for adults.

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128C. Psychological Foundations of Adult Education (2) Educational psychology and developmental problems of adults.

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.

128E. Workshop in Adult Education (1-3)

Prerequisite: Possession of a valid teaching credential.

Designed to meet the needs of individuals or groups of adult educators who wish to study special problems in adult education.

156. Community College Occupational Education (3)

Prerequisite: Two years of occupational experience in a community college subject matter area

Principles, practices, scope and functions of education.

157. Community College Occupational Curriculum (3) Prerequisite: Education 156.

Materials and methods of instruction, curriculum development and evaluation.

158. Occupational Student (3)

Prerequisite: Education 156 or 157.

The learning process and individual differences, behavioral characteristics of youth, race and ethnic relations in the schools.

159. Directed Teaching (2 or 4)

Prerequisite: Education 156, 157 or 158.

Systematic observation, participation, and teaching under supervision in an occupational area in a community college.

### Methods-Elementary

130. First Elementary Education Practicum (2) I, II (3) S

Four hours of activity for 130A; four hours of activity for 130B; six or more hours of activity and instructional media laboratory for 130C.

Prerequisite: Concurrent registration in Education 111, or consent of Coordinator of Elementary Education.

Curriculum, principles, methods and materials of instruction (including educational technology), and participation in elementary education, in the areas listed A through C below.

A. Arithmetic

**B.** Language Arts

C. Student Teaching (not offered in the summer)

131. Second Elementary Education Practicum (2) I, II, S, except 131D (3) or 131E (4) Four hours of activity for 131A; four hours of activity for 131B; six or more hours of activity and instructional media laboratory for 131C or 131D or 131E.

Prerequisites: Education 111 and 130; concurrent registration in Education 112 or consent of Coordinator of Elementary Education.

Curriculum, principles, methods and materials of instruction (including educational technology), and participation in elementary education, in the areas listed A through E below.

A. Reading B. Social Studies

C, D, or E. Student Teaching (not offered in the summer)

132. Third Elementary Education Practicum (2) I, II, S, except 132D (4) or 132E (5)

Four hours of activity for 132A; four hours of activity for 132B; four hours of activity for 132C; ten or more hours of activity for 132D or 132E.

Prerequisites: Education 112 and 131.

Curriculum, principles, methods and materials of instruction (including instructional media), and participation in elementary education, in the areas listed A through E below.

A. Science

B. Art

C. Music

D or E. Student Teaching (not offered in the summer)

133. Children's Literature in Elementary Education (3) Irregular

A survey of children's literature; the selection and use of material in the elementary classroom.

134-S. Laboratory in Elementary Education (3) S

A general course in observation and theory, including a study of arithmetic, reading, language, music, science, social studies, art, spelling. Students in this course will observe in the summer demonstration school and discuss with the staff the teaching procedures.

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### 135. Workshop in Elementary Education (3 or 6) Irregular

To meet the needs of individuals or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching will be provided for members in attendance. Interested persons should correspond with the Coordinator of Elementary Education, San Diego State University. May be repeated with new content. Maximum credit six units.

138A. Curriculum in Elementary Education (3) Irregular Emphasis on the selection and development of content, teaching methods and materials as they relate to social needs; evaluation procedures; psychological principles and the nature of the learner. (Formerly numbered Education 138.)

138B. Social Studies Unit Construction in Elementary Education (3) Irregular Prerequisite: Education 131B.

Selecting and organizing content, analyzing materials, and developing instructional units in elementary social studies for classroom use.

#### 139. Kindergarten-Primary Practicum (3) I, II, S

The theory of early childhood education and the materials and teaching techniques used in the kindergarten. This course must be taken concurrently with Education 132C when the student teaching assignment is in the kindergarten.

### **Educational Technology and Librarianship**

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.

141. Production of Instructional Materials (3) I, II, S

Two lectures and three hours of laboratory. Planning and preparing instructional materials for classroom use. Independent study centers, transparencies, film, charts, lettering aids, learning games.

143-S. Workshop in Educational Television (6) S

(Same course as Telecommunications and Film 172.)

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.

# 144. Instructional Materials Design (3) I, II, S

Prerequisite: Education 110 or 112.

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.

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. (Formerly numbered and entitled Educational Technology and Librarianship 136, School Library Administration.)

### 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. (Formerly numbered Educational Technology and Librarianship 110.)

# 147. Selection of Instructional Materials (3) I, II

Prerequisite: Education 145.

Selection criteria and development of written policy statements. Annotations, reviewing media, standard catalogs and bibliographies. (Formerly numbered Educational Technology and Librarianship 118.)

148. Cataloging and Classification (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Education 145.

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. (Formerly numbered and entitled Educational Technology and Librarianship 119, Technical Processes.)

149. History of Books and Libraries (3) II

Books and libraries from earliest times to the present; their influence on our schools and culture. (Formerly numbered Educational Technology and Librarianship 184.)

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150. Workshop in Educational Technology and Librarianship (1-3) Selected problems in educational technology and librarianship. Maximum credit six units. (Formerly numbered Educational Technology and Librarianship 191.)

**Honors** Course

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

Refer to the honors program.

# **Exceptional Children**

161. Measurement and Evaluation in Special Education (4) II

Three lectures and three hours of laboratory. Prerequisites: Education 120; 151 or 152; and Psychology 105.

Consideration of representative tests and evaluation procedures appropriate to the several areas of exceptionality; problems in psychoeducational diagnosis and appraisal; assembling and utilizing test results for the educational and/or rehabilitation program.

# 162. Emotionally Disturbed Children and Youth (3) I, S Prerequisite: Education 167.

Nature, needs and problems of emotional deviants; survey of settings and roles of those who help, and ways they help.

163. Curriculum and Methods for Teaching Emotionally Disturbed Children and Youth (3) II or Irregular

Prerequisites: Education 162 or 167.

Selection, organization and presentation of curricular materials for emotionally disturbed children and youth.

164. Education of the Neurologically Handicapped (3) I

Prerequisites: Education 167 and Psychology 109.

Educational and psychological problems of brain-injured children and youth; identification procedures, educational programs, instructional methods, preparation of materials.

#### 167. Exceptional Children (3) I, II, S

Characteristics and adjustment problems of mental, physical and emotional deviants.

168. Curriculum and Methods for Teaching Mentally Retarded Children in the Elementary School (3) II. S

Prerequisite: Psychology 109 or Education 167.

Selection, organization and presentation of curricular materials for mentally retarded children at all levels in the public schools. Concentration will be on the elementary level. (Recommended for students with specialization in Elementary Teaching.)

169. Curriculum and Methods for Teaching Mentally Retarded Children in the Secondary School (3) I, S

Prerequisite: Psychology 109 or Education 167.

Selection, organization and presentation of curricular materials for mentally retarded children at all levels in the public schools. Concentration will be on the secondary level. (Recommended for students with specialization in Secondary Teaching.)

### 170. Workshop in Special Education (2-4) I, II, S

Curriculum and methods of teaching in an area of exceptionality; observation of demonstration class; development of materials of instruction. May be repeated once in a second area of exceptionality. Maximum credit six units applicable on any degree.

171. Practicum in Mental Retardation (2) I, II

One lecture and two hours of laboratory.

Prerequisites: Admission to Special Education, and credit or concurrent registration in Psychology 109.

Supervised observation and participation in classroom and related school activities for mentally retarded. Course work includes discussion, analysis and reports of observations.

172. Counseling Exceptional Children (3) I, S Prerequisites: Education 110 or 112, and Education 167 or Psychology 109. Educational, mental, social and vocational counseling of exceptional individuals and their parents. Interrelationships of home, school and community agencies.

173. Education of the Severely Mentally Retarded (3) II, S

Prerequisites: Education 167 and Psychology 109, and admission to Special Education.

Organization and planning of instructional activities; materials and equipment; utilization of resources, records, and reports; and classroom management of those under 50 IQ and those with neurological impairments.

179. Curriculum and Instruction for Teaching the Deaf (3) II

Prerequisite: Concurrent registration in Education 185.

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.

### Student Teaching

180A-180B. Directed Participation: Secondary (1-1) I, II

Prerequisite: Education 110 to be taken concurrently with 180A; Education 100J to be taken concurrently with 180B.

A comprehensive orientation to a secondary school with directed observation and participation in the classroom.

180C-180D. Directed Teaching: Secondary (3-3) I, II

Prerequisites: Admission to teacher education and concurrent registration in Education 252 is required for Education 180C. Education 180C is prerequisite to 180D.

Systematic observation, participation and teaching under supervision in a junior or senior high school. A weekly seminar or conference is required. Education 180D is also offered in the summer.

181A. Directed Teaching: Elementary (1) I, II, S

181B. Directed Teaching: Elementary (2) I. II. S

181C. Directed Teaching: Elementary (3) I. II. S

Prerequisites: Admission to teacher education and education program approved by the Coordinator of Elementary Education. Any grade below C is unacceptable for a credential. Systematic observation, participation and teaching under supervision in elementary schools. During each semester of student teaching a weekly conference period is required as indicated in the time schedule.

182. Directed Teaching: Mentally Retarded (4) I, II

Application to take the course should be made during the preceding semester.

Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of the mentally retarded.

183. Directed Teaching: Educational Technology and Librarianship (2-4) I, II

Prerequisites: Admission to teacher education and concurrent completion of a teaching minor in library science.

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.

### 184. Directed Teaching: Speech Correction (4) I, II

Application to take the course should be made during the preceding semester.

Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of speech correction.

185. Directed Teaching: Hearing Impaired (4)

Application to take the course should be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of hearing impaired.

### **Conference and Special Courses**

# 190-S. Conference on the Teaching of Mathematics (1) S

Lectures, discussions and demonstrations on problems in teaching of mathematics in the elementary and secondary schools. Designed for teachers, supervisors and administrators interested in current developments in this area. Maximum credit three units.

# 191-S. Guidance Conference (1) S

Prerequisite: Consent of conference director.

A series of lecture and discussion sessions centering on current problems in counseling and guidance. Designed to serve the needs of any person desiring to keep informed of developments in this area. Maximum credit three units.

### 192-S. Audiovisual Conference (1) S

Course does not fulfill credential requirement.

A series of lectures, discussions and demonstrations centering on problems in the use of audiovisual instructional materials. Designed for teachers, administrators, audiovisual representatives, and others interested in current developments in this area. Maximum credit three units.

# 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.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently.

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### **Graduate Courses**

Students with undergraduate standing are not admitted to 200-numbered courses in Education.

Twelve units of professional education are prerequisite for enrollment in all graduate courses, except Education 201, 223, and 251, which require special clearance from the Coordinator of Higher Education Programs; and courses in Counselor Education.

### Sociological Foundations

201. The Community College (3)

Two lectures and three hours of activity.

Overview of philosophy, history, aims, scope, function, outcomes, principles and problems of the community college. Relation of the community college to secondary and higher education.

#### 202. Social Foundations (2 or 3)

Prerequisite: Education 131C

Sociological, historical, and philosophical foundations of American education and their influences on present-day educational practices.

### 204. Comparative Education (3)

The contemporary educational ideas and practices of various countries of the world and their impact on our culture and education.

# 206. Philosophy of Education (3)

Prerequisite: Education 100J or 101.

Advanced study of philosophical backgrounds of educational thought; a study of comparative philosophies, and an analysis of selected current trends and problems.

207. Educational Sociology (3) Prerequisite: Education 100J or 101.

A study of the social, economic, political and moral setting in which present-day American education functions.

# 208. Workshop in Community Influences on Learning and Curriculum Planning (1-3) Prerequisite: Teaching experience.

Advanced study of community influences on learning and child growth and development, and of group techniques; implications for curriculum planning. Provides opportunity for work on individual problems of the participants. Maximum credit six units.

# 209. Workshop in Community College Education (2-6)

Prerequisite: Teaching or administrative experience in a community college. To provide community college faculty members with opportunities to explore ways to improve curriculum and instruction in the community college.

### Procedures of Investigation and Research

### 211. Procedures of Investigation and Report (3)

Research methods in education. Location, selection and analysis of professional literature. Methods of investigation, data analysis and reporting. Required of all applicants for advanced degrees in education. (Formerly numbered Education 290A-290B.)

### 212. Educational Research Design (3)

Prerequisite: Education 211.

Principles and methods of planning and conducting systematic investigations of educational problems-including historical, descriptive and experimental methods of research. Practice in the definition of problems, formulation of hypotheses, construction of samples, control of variables, and interpretation of results.

### **Educational Psychology**

### 220. Advanced Educational Psychology (3)

Prerequisite: Education 110 or 112.

Advanced study of the research in educational psychology and its application to learning and human growth.

221. Seminar in Educational Measurement (3)

Prerequisite: Education 120, 151, or 152.

Problems in educational testing. Emphasis on construction, administration and validation of teacher-made tests.

223. Educational Psychology: Community College (2)

Field work required.

Prerequisite: Credit or concurrent registration in Education 201.

The nature of the community college student; the learning process, including contributions of audiovisual materials. The functions of student personnel services in the community college.

246. Advanced Diagnosis in Reading (3)

Prerequisites: Psychology 204 and Education 137, or consent of instructor.

Principles and techniques of individual and group diagnosis of reading difficulties. Experience in administration and interpretation of individual and group instruments in diagnosis.

247. Advanced Diagnosis and Treatment of Learning Difficulties (3)

Prerequisites: A teaching credential and Education 151 or 152.

Principles and techniques of diagnosis and treatment of difficulties in learning the school subjects. Supervised experience in working with individual pupils and their parents.

### **Counselor** Education

224. Administration of Pupil Personnel Services (3) Prerequisite: Education 230.

The organization and administration of school guidance services, including the use of community resources and a study of laws relating to children and child welfare.

### 225A-225B. Determinants of Human Behavior (3-3)

Implications of theory and research in behavioral sciences for the understanding of human behavior. Education 225A deals with personality theories and psychological determinants of behavior; 225B with social and cultural determinants.

226. Guidance Services in Public Education (3)

Prerequisite: Education 110, or Education 111 and 112.

Historical, philosophical and legal bases of pupil personnel services; staff roles and relationships in a variety of organizational patterns.

### 229. Workshop in Counseling (3)

Prerequisite: Consent of instructor.

Application of principles and procedures to specific situations for improvement of counseling services. Individual problems emphasized.

### 231. Theory and Process of Appraisal (4)

Three lectures and three hours of laboratory.

Measurement theory and procedures, including interpretation of test results. Not open to students with credit in Education 237. Offered during summer sessions only in combination with Education 232 as Education 237.

232. Theory and Process of Vocational Choice (4)

Three lectures and three hours of laboratory and/or field work.

Vocational choice theory, occupational and educational materials used in career planning. Not open to students with credit in Education 237. Offered during summer sessions only in combination with Education 231 as Education 237.

233. Theory and Process of Counseling (4) Prerequisites: Education 225A and 231.

Counseling process theories, approaches to and techniques for counseling, and research concerning counseling effectiveness. Supervised practice in counseling, analyzing counseling, and writing counseling reports. Not open to students with credit in Education 238 or Psychology 152 or Psychology 233. Offered during summer sessions only in combination with Education 234 as Education 238.

# 234. Theory and Process of Group Counseling (4)

Three lectures and three hours of laboratory.

Prerequisites: Education 225B and 233. Group process and individual growth, theories of group interaction, sensitivity training and group leadership techniques. Not open to students with credit in Education 238. Offered during summer sessions only in combination with Education 233 as Education 231.

# 235A. Introduction to the Rehabilitation Process (3)

Two lectures and three hours of laboratory.

Prerequisite: Admission to Counselor Education.

Background and legislation related to vocational rehabilitation; overview of client services and role and function of the rehabilitation counselor as a professional person. Orientation to community rehabilitation agencies.

# 235B. Medical Aspects of Disability (3)

Two lectures and three hours of laboratory.

Prerequisite: Education 235A.

Orientation to medicine and illness in relation to work capacity and work outlook. Focus on major diseases and impairments resulting in vocational disability. Lecture and clinical seminars.

235C. Psychological Aspects of Disability (3)

Two lectures and three hours of laboratory.

Prerequisite: Education 235B.

Analysis of the psychological component to illness and disease. Focus on functional disorders and vocational implications. Lecture and clinical seminars. (Formerly numbered Education 235A.)

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# 235D. Placement of the Disabled (3)

Two lectures and three hours of laboratory.

Prerequisite: Education 235C.

Determination of employment needs of disabled clients, case study method. Follow-through to placement. Continuous survey of employment needs and opportunities in the wider community. (Formerly numbered Education 235C.)

# 237-S. Appraisal and Vocational Choice (6) S

Five lectures and three hours of laboratory. Measurement theory, interpretation of test results, vocational choice theory, occupational and educational information in career planning. Not open to students with credit in Education 231 or 232. Application to take the course must be made early during the preceding semester.

238-S. Counseling: Individual and Group (6) S

Five lectures and three hours of laboratory.

Counseling theory and techniques, individual and group. Not open to students with credit in Education 233 or 234. Application to take the course must be made early during the preceding semester.

239A-239B. Professional Seminar in Guidance (3-3)

Prerequisites: Education 211; six units from Education 231, 232, 233, and 234, or equivalent. Study of selected areas in counseling and guidance culminating in a written project with emphasis on research and on counseling as a profession.

#### **Elementary Education**

# 240. Curriculum Construction and Evaluation in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211.

Advanced study of the research in curriculum development, construction and evaluation. 241. Seminar in Arithmetic in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211.

A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school arithmetic.

242. Seminar in Reading in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211. Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences and interests. Students will develop individual projects or problems.

243A. Seminar in Social Studies in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211. Problems in teaching social studies in the elementary school with emphasis on the study

of the scientific research in the field. (Formerly numbered Education 243.)

243B. Seminar in Elementary Social Studies Curriculum Development (3)

Prerequisite: Education 131B, and credit or concurrent registration in Education 211. Current theories of instruction pertaining directly to elementary social studies teaching and curriculum development; critique of current social studies courses of study and guides; experience in elementary social studies curriculum planning at the classroom, school and district levels.

### 244. Seminar in Language Arts in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211.

Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of the scientific research in the field.

248. Seminar in Science in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211.

Advanced study of the problems of teaching science in the elementary school with emphasis on the literature of science education.

### **Secondary Education**

230. Guidance Problems in Secondary Education (3)

Prerequisites: Education 110 or equivalent, and student teaching or teaching experience. The theory and practice of guidance, emphasizing advanced mental hygiene concepts needed by teachers and counselors.

250. Curricular Problems in Secondary Education (3)

Prerequisite: Student teaching or teaching experience.

Present status and development of the secondary school curriculum with emphasis on curriculum construction and curriculum evaluation. Opportunities provided for study of problems submitted by students.

251. Instructional Methods and Materials: Community College (2)

Prerequisites: Education 223 and concurrent registration in Education 316.

The teaching process at the community college level, including lesson planning, utilization of audiovisual and other instructional materials and procedures of evaluation. 252. Seminar for Student Teachers (3)

Prerequisites: Education 110 and 100J. To be taken concurrently with Education 180C. Advanced study in the application of principles and research related to planning instruction, selecting and using materials, evaluating instruction and pupil progress, maintaining class morale; school law and finance for classroom teachers.

# 254. Advanced Problems in Secondary School Instruction (3)

Prerequisites: Teaching experience and consent of instructor.

An analysis of the scientific research and philosophical principles in secondary school instruction.

255. Advanced Curriculum and Instruction in Mathematics (3)

Prerequisite: Education 121F and teaching experience.

Factors directing the changing mathematics current research in the teaching of secondary mathematics.

# 256. Recent Trends in Secondary Curriculum (3)

Prerequisites: Twelve units in secondary education and consent of instructor.

Current practices and trends in secondary schools. Extensive individual work on related problems of interest to members of the class.

257. Workshop in Intercultural Education (4)

A cooperative workshop sponsored by the university and the San Diego City Schools to study trends in intercultural education in American schools, including units, curricular and instructional materials and techniques.

258. Research in Curricular Problems (1-3)

Prerequisites: Consent of the Coordinator of Secondary Education and instructor. Individual study by graduate students who have demonstrated exceptional ability.

259. Seminar in Secondary School Reading (3)

Prerequisites: Education 122 and 211.

Sources of research on reading; reading and criticism of selected studies; identification of research trends and needs.

### Educational Administration

#### 260. Principles of School Administration (3)

Federal, state and local school administrative relationships including the financial and legal structure at these three levels.

### 261. Education Leadership (3)

Prerequisite: Teaching credential.

Concepts and techniques of leadership, analysis of the factors and practice in the procedures of group and individual leadership in four areas: (a) the community; (b) the teaching staff; (c) the student personnel; (d) the professional field of educational administration and supervision. (Formerly numbered Education 278.)

262. Legal and Financial Aspects of School District Policies (3)

Prerequisite: Teaching credential. Relationship of the school district to attendance units. The legal basis for policy formation in the selection and retention of certified personnel, in the admission and assignment of pupils, in the instructional programs and in related budgetary considerations.

263. Curriculum Development and Evaluation (3)

Prerequisite: Teaching credential.

Curriculum development in both elementary and secondary schools, with emphasis on interrelationships between these levels, responsibilities of curricular and supervisory personnel, and use of research.

264A-264B-264C. Seminar in Elementary School Administration and Supervision (2-2-2)

Prerequisites: Education 260, 261, 262, 263, and admission to Program of Educational Administration; concurrent registration in Education 266A, 266B, 266C

Analysis of theories and practices in the administration and supervision of the elementary school.

265A-265B-265C. Seminar in Secondary School Administration and Supervision (2-2-2) Prerequisites: Education 260, 261, 262, 263, and admission to Program of Educational

Administration; concurrent registration in Education 267A, 267B, 267C Analysis of theories and practices in the administration and supervision of the secondary school.

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266A-266B-266C. Field Experience in Elementary School Administration and Supervision

Prerequisite: Concurrent registration in Education 264A, 264B, 264C. (1-1-1) Cr/NC

Field experience in the elementary schools. Approval of local school district required in the semester prior to registration.

267A-267B-267C. Field Experience in Secondary School Administration and Supervision (1-

Prerequisite: Concurrent registration in Education 265A, 265B, 265C. 1-1) Cr/NC

Field experience in the secondary schools. Approval of local school district required in the semester prior to registration.

268. Seminar in School Administration and Supervision (3) Prerequisites: Teaching credential, Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.

School administration and supervision in a specialized field, such as the community college, a subject field, or designated services. Field experience required. May be substituted for Education 264C or 265C.

# 280. Legal and Financial Aspects of School District Management (3)

Prerequisites: Teaching credential, and Education 260, 261, 262, 263.

Principles and practices of law and finance as an aspect of school business administration, school plant planning and development, and the operation and maintenance of school facilities and services.

281. School-Community Relationships (3) Prerequisites: Teaching credential, and Education 260, 261, 262, 263.

Sociological aspects of school administration with particular emphasis on broad social policy, contemporary issues, community-school relationships, other social and service agencies of the community.

# 282. School District Personnel Management (3)

Prerequisites: Teaching credential, and Education 260, 261, 262, 263.

Personnel relationships to include administrative relationships with the Board of Education and the school staff. Central office personnel procedures including recruitment, employment, placement, evaluation, promotional and training procedures.

# 283. District Curriculum Development, Evaluation and Improvement (3)

Prerequisites: Teaching credential, and Education 260, 261, 262, 263.

School district curricular development from kindergarten through community college, relationships of the superintendent and central administrative staff to regular staff and supervisory staff.

### 284. Advanced Seminar in School Administration and Supervision (3

Prerequisites: Teaching credential, and Education 280, 281, 282, 283.

An intensive study of a selected area in school administration and supervision. Typical courses in this area are School Law, School Finance, School Supervision, Personnel Procedures. May be repeated with new content. Maximum credit nine units.

### 286A-286B. Seminar in School Building Construction and Utilization (3-3)

Prerequisite: Possession of Administration or Supervision Credential, or consent of instructor. Credit or concurrent registration in Education 286A is prerequisite to 286B.

School building construction and utilization: the development of new facilities from the planning stage to complete utilization; remodeling.

### **Special Education**

### 222. The Gifted Child (3)

Prerequisites: Education 110, or 111 and 112.

The abilities and characteristics of the intellectually gifted or talented; related problems of curriculum, teaching, administration and guidance.

270. Seminar in Education of Exceptional Children (3)

Prerequisite: Education 167.

Principles, trends and research in the education of exceptional children.

271. Seminar in Emotionally Disturbed Children and Youth (3)

Prerequisites: Education 162 or 163, and 270.

Advanced study of the theories, principles and practices in working with the emotionally handicapped.

272. Seminar in Education of the Gifted (3)

Prerequisites: Education 222 and 270.

Review of studies and investigation in learning and adjustment of the gifted, including assessment, classification, curriculum provisions, and social and emotional adjustment.

273. Seminar in Education of the Mentally Retarded (3)

Prerequisites: Education 168 or 169, and 270.

Review of studies and investigation in learning and adjustment of retarded children including etiology, classification, diagnosis and assessment.

# Educational Technology and Librarianship

274. Seminar in Educational Technology (3) I

Prerequisite: Education 140.

Research reviewed and the findings related to current practices. Relationships of educational technology to educational philosophies and current issues. Recent trends evaluated.

275. Seminar in the Administration of Instructional Media Centers (3) I, II

Prerequisites: Education 140 and 145.

The relationship of school, district, and regional media centers to the educational program. Concepts of leadership and management, review of current practices and policies.

276. Seminar in Instructional Design (3) I, II

Prerequisite: Education 141.

Design and production of self-instructional sequences. Instructional materials design will be investigated. Student entry behavior, objectives, media characteristics and learning will be considered.

277. Reference Materials in Subject Areas (3)

Prerequisite: Education 146.

Reference materials in humanities, social sciences, and sciences with emphasis on their use in the school library media center.

# 278. Literature for Children (3)

Prerequisite: Education 147.

Literature and other library materials suited to the elementary school student. Standard, classic and current books for children; aids and criteria for selection. (Formerly numbered Educational Technology and Librarianship 231.)

#### 279. Literature for Adolescents (3)

Prerequisite: Education 147.

Literature and other library materials suited to the high school student. Standard, classic and current books for the adolescent; aids and criteria for selection. (Formerly numbered Educational Technology and Librarianship 232.)

### Special Study and Research

### 295A-295B. Seminar (3-3)

Prerequisites: Education 211 and advancement to candidacy for the Master of Arts degree in education.

An intensive study in selected areas of education culminating in a written project. Limited to students following Plan B for the Master of Arts degree in education.

298. Special Study (1-6) Cr/NC Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

### **Student Teaching and Internship**

### 316. Directed Teaching: Community College (4)

Prerequisites: Admission to Teacher Education and approval of the Higher Education Programs Coordinator the preceding semester. Credit in Education 201 and 223 and concurrent registration in Education 251.

Systematic observation, participation, and teaching under supervision in a community college. Any grade below C is unacceptable for a credential. A weekly seminar or conference is required.

#### 330. Internship (2-6) Cr/NC

Supervised internship experience in counseling activities. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable on a master's degree.

### 331. Field Work in Counseling (2-6) Cr/NC

Application of concepts and procedures of counseling services in appropriate school or agency setting. Daily observation and practice. Weekly seminar sessions with college staff. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable on a master's degree.

# 332. Practicum in Counseling (3) Cr/NC

Supervised experience in group and individual counseling and career planning. Application to take the course must be made early during the preceding semester. Maximum credit six units applicable on a master's degree.

# 333. Advanced Seminar and Practicum in Counseling (3-6) Cr/NC

Supervised experience in group and individual counseling and study of problems, issues. and research. Application to take the course must be made early during the preceding semester.

360. Internship in School Administration and Supervision (3-6) Cr/NC

Prerequisites: Teaching credential and consent of instructor Internship for prospective school administrators in the public schools. Released time, permission of school district, and preregistration with Coordinator of Program of Educational

Administration previous semester required.

371. Directed Internship: Mentally Retarded (4) Cr/NC Application to take the course must be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of the mentally retarded.

374. Directed Internship: Speech Correction (4) Cr/NC

Application to take the course must be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of speech correction.

375. Directed Internship for the Instructional Media Specialist (2-6) Cr/NC

Application to take the course must be made during the preceding semester. Supervised internship in an instructional media center.

Engineering

### In the School of Engineering

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

#### Faculty

Emeritus: Stone, H., Walling

Professors: Bauer, Bedore, Capp (Dean), Chan, Chang, Conly, Dharmarajan, Fitz, Golding, Johnson, Learned, Lin, Lodge, McGhie, Morgan, Murphy, Noorany, Ohnysty, Quiett (Associate Dean), Rao, Shutts, Skarr, Stone, S., Stratton

Associate Professors: Chou, Craig, Crooker, Eggleston, Hussain, Krishnamoorthy, Mann, Mansfield, Narang, Panos

Assistant Professors: Bakhru, Bilterman, Brown, Drake, Harris, Khalifa, Marino, McElmury, Stuart, Treadwell

### Offered by the School of Engineering

Master of Science degree in aerospace, civil, electrical and mechanical engineering. (Described in the Graduate Bulletin. Also refer to the section in this catalog on the Graduate Division.)

Major with the B.S. degree in engineering, with options in aerospace, civil, electrical, and mechanical engineering. (Described in the section of this catalog on the School of Engineering.)

Minor in engineering. (Described in the section of this catalog on the School of Engineering.)

### Lower Division Courses

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.

5. Introduction to the Engineering Profession (2) I, II Cr/NC

An overall view of engineering education and professional practice. An introduction to basic skills useful in acquiring engineering problem-solving capabilities.

10. Control of Man's Environment (3) I, II

Man's interaction with the land, water and air environment; environmental pollution; role of engineering in controlling man's environment.

20. Engineering Graphics (2) I, II Six hours of laboratory.

Prerequisites: Credit or concurrent registration in Mathematics 40 or equivalent, and either Engineering 1 or qualification on the Engineering Graphics Placement Examination.

Graphic communication for engineers. Presentation and interpretation of engineering plans, using both standard projection systems and freehand sketching. Introduction to nomography; graphic presentation and analysis of data.

25. Engineering Materials (3) I, II

Prerequisite: Chemistry 1A.

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.

# 30. Engineering Measurement Analysis (2) I, II

Prerequisite: Mathematics 40.

Methods of data presentation. Analysis and treatment of engineering data. Design of engineering experiments. Correlation and regression analysis. Practical applications are stressed.

# 40. Engineering Problem Analysis I (2) I, II

One lecture and three hours of laboratory.

Prerequisite: Mathematics 50.

Analysis of engineering problems and solutions using the digital computer. Fundamentals of programming and programming language commands.

### 50A. Engineering Mechanics I (3) I, II

Prerequisites: Credit or concurrent registration in Physics 4E and Mathematics 51.

Static equilibrium of particles and rigid bodies; vector algebra and calculus; friction, virtual work; kinematics of a particle; kinetics of a particle; engineering applications.

#### 50B. Engineering Mechanics II (3) I, II

Prerequisites: Engineering 50Å and credit or concurrent registration in Mathematics 52. 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.

### 60. Electric Circuits (3) I, II

Prerequisites: Physics 4E and Mathematics 51.

Circuit analysis by reduction methods, source transformations, loop and nodal analyses; alternating-current circuits, impedance, power and phasor diagrams.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

100. Electrical Energy Conversion (3) I, II

Prerequisite: Engineering 60.

Magnetic circuits, transformers and polyphase AC networks. Fundamentals of electromechanical energy conversion; induction motors, synchronous machines and DC machines. (Formerly numbered and entitled Engineering 100B, Electrical Machinery.)

### 100L. Electrical Energy Conversion Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 100.

Experimental study of DC, single and polyphase AC circuits, transformers, and machines. (Formerly offered as an integral part of Engineering 100B.)

101. Fundamentals of Engineering Electronics (3) I, II

### Prerequisite: Engineering 60.

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.

# 101L. Engineering Electronics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 101. Experimental study of laboratory instruments, diodes, rectifier circuits, filters, silicon controlled rectifiers, tubes, transistors, and amplifiers.

# 102. Electric and Magnetic Fields (3) I, II

Prerequisites: Engineering 50B and 60.

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 100C.)

103. Electronics, Instrumentation, and Electrical Energy Conversion (3) I, II

Prerequisite: Engineering 60.

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.

# 103L. Electrical Engineering Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 103. A laboratory course to include selected experiments in electrical circuits, electronics, and electrical machinery. (Formerly numbered Engineering 103.)

107. Metallic Materials and Processes (4) I, II

Three lectures and three hours of laboratory

Prerequisites: Engineering 25 and Physics 4C. Physical metallurgy and properties of metals. Influence of processing on the properties of metals. Design criteria for selection of materials. (Formerly numbered Engineering 106 and

109A.)

108. Thermodynamics (3) I, II

Development of the basic laws of thermodynamics from the macroscopic and microscopic viewpoints and their application to engineering systems.

# 108L. Thermal Science Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 108 or 110. Laboratory studies of the basic concepts of thermal science. (Formerly offered as an

integral part of Engineering 108.)

109. Nonmetallic Materials (3) I Two lectures and three hours of laboratory.

Fundamentals of plastics, reinforced plastics, and ceramics. Analysis of effect of physical properties upon selection of a material for use in design.

# 110. Thermodynamics and Heat Transfer (3) I, II

First and second laws of thermodynamics; materials, heat conduction, convection, and radiation. Not acceptable for mechanical engineering majors.

# 111. Network Analysis (3) I, II

Prerequisites: Engineering 60 and Mathematics 52.

Loop and nodal analysis using general network equations; network theorems; frequency and time response using poles and seros. Two-port parameters. (Formerly numbered Engineering 130.)

112. Advanced Network Analysis (3) I, II

Prerequisites: Engineering 111, and 187A or Mathematics 118A. Transient analysis of circuits containing resistance, inductance, and capacitance with various input wave forms by means of the Laplace-transform method. (Formerly numbered and entitled Engineering 132, Time Domain Analysis of Linear Networks.)

# 113L. Analog Computation of Electrical Engineering Problems (1)

Three hours of laboratory.

Prerequisites: Engineering 101, 187A, and credit or concurrent registration in

Use of the analog computer in the solution of typical electrical engineering problems. Engineering 112. 114. Analysis and Design of Electronic Circuits (3) I, II

Prerequisites: Engineering 101, 111, and 187A or Mathematics 118A.

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 134A.)

# 114L. Electronic Circuits Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 114.

Vacuum-tube and transistor dynamic characteristics; single stage and multistage amplifier circuits including feedback and tuned amplifiers. (Formerly numbered Engineering 135A.)

# 115. Fluid Mechanics (3) I, II

Prerequisites: Engineering 50B, and credit or concurrent registration in Engineering 187A

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.

### 115L. Fluid Mechanics Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 115.

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.

116. Introduction to Solid Mechanics (3) I, II

Prerequisites: Engineering 25 and 50B; and credit or concurrent registration in Engineering 187A

Mechanics of solid deformable bodies involving analytical methods for determining strength, stiffness, and stability of load-carrying members.

116L. Solid Mechanics Laboratory (1) I. II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 116.

Laboratory studies in solid mechanics. Experimental stress analysis. Experimental confirmation of theory.

### 118. Transfer and Rate Processes (3)

Prerequisite: Engineering 187A.

Fundamentals of rates of change in enthalpy and composition of matter; heat and mass transfer and chemical reaction rates.

### 120A. Structural Analysis I (4) I, II

Prerequisite: Engineering 116.

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.

### 120B. Structural Analysis II (3) I

Prerequisite: Engineering 120A.

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.

### 121. Reinforced Concrete (3) II

Prerequisite: Engineering 120A.

Properties and characteristics of reinforced concrete; design of structural components. Introduction to plastic theory and limit design.

### 122. Soil Mechanics (3) I

Two lectures and three hours of laboratory.

Prerequisites: Geology 53, Engineering 116, and credit or concurrent registration in Engineering 115.

Mechanics of soils; physical and mechanical properties; soil classification, compaction, swelling, consolidation, and shear strength. Laboratory tests and related design problems. 123A. Water Resources Engineering I (2) I

Prerequisite: Credit or concurrent registration in Engineering 115. Open channel and pressure conduit flow, pumps and turbines, hydroelectric power, and water law.

# 123B. Water Resources Engineering II (2) II

# Prerequisite: Engineering 123A.

Hydrographs and frequency analysis as applied to flood flow determination; multiple regression in hydrologic applications; design of hydraulic systems.

### 124. Foundation Engineering (3) II

Prerequisite: Engineering 122. Soil mechanics theories applied to the design of shallow and deep foundations; lateral pressure of soils; design of retaining walls.

# 125. Sanitary Engineering (3) II

### Prerequisite: Engineering 123A.

Unit processes used in water treatment and wastewater disposal; physical and chemical tests used in the analysis of water and wastewater.

# 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.

# 127. Highway Engineering (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Engineering 128A and credit or concurrent registration in Engineering 123. Highway planning, economics, and administration; geometric design; traffic engineering; subgrade structure; bituminous and portland-cement concrete pavements.

128A. Surveying for Civil Engineers (3) II

Two lectures and three hours of laboratory.

Prerequisite: Engineering 30.

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.

128B. Advanced Surveying and Photogrammetry (3) I

Two lectures and three hours of laboratory.

Prerequisite: Engineering 128A.

Theory and application of precise control surveys; specialized survey operations. Principles of metrical photogrammetry as applied to engineering. Map compilation from aerial photographs.

### 129. Highway Materials (3) II

Two lectures and three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 127 or Engineering 122. Selection, design, and control of mixes of various materials used in highway construction practice. Emphasis on strength and properties of plain concrete and asphalts.

#### 133. Stochastic Signals (3) II

Prerequisite: Engineering 187A or Mathematics 118A.

Random signals, correlation functions, power spectral densities, the Gaussian process, narrow band processes. Applications to communication systems. (Formerly part of Engineering 196B.)

#### 134. Communication Principles and Circuits (3) I

Prerequisite: Engineering 114.

Signal transmission in linear networks; modulators and detectors; wide-band and narrow-band amplifiers; oscillators; AM, FM, and phase modulation; transient response of amplifiers.

134L. Communication Circuits Laboratory (1) I

Three hours of laboratory.

Prerequisite: Engineering 114L.

Regulated power supply systems; oscillator, modulator, detector, and switching circuits; superheterodyne receivers and television circuitry. (Formerly numbered and entitled Engineering 135B, Electronic Circuits Laboratory.)

### 135. Modulation Theory (3) I

Prerequisite: Engineering 112.

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. (Formerly numbered Engineering 185.)

# 137. Communication Networks (3) I

Prerequisites: Engineering 102, 111, and 187A or Mathematics 118A.

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.

# 139. Microwave Communications (3) II

Prerequisites: Engineering 114 and 137. 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.

# 139L. Microwave Measurements Laboratory (1) II

Three hours of laboratory.

Prerequisites: Credit or concurrent registration in Engineering 114L and 139. Experimental study of microwave generation including klystrons, Gunn and IMPATT

oscillators. TWT and microwave transistor amplifiers. Microwave modulation and detection. Microwave transmission and antennas.

140. Principles of Heat Transfer (3) I, II

Prerequisites: Engineering 108 or 110; and 187A.

Heat transfer by conduction, convection, radiation, and combinations thereof; introduction to aerodynamic heating and heat transfer by phase change.

141. Internal Combustion Engines (3) II

Prerequisite: Engineering 148.

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.

142. Elements of Energy Conversion (3) II

Prerequisite: Engineering 108.

Principles of physics and chemistry applied to the analysis of a broad spectrum of energy conversion devices from an engineering point of view.

# 143. Gas Dynamics (3) I

Prerequisites: Engineering 108 and 115.

Thermodynamics of high velocity compressible fluid flow. Shock regions; adiabatic and diabatic flow. Applications to the propulsive duct and discharge nozzles.

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144. Thermal Environmental Engineering (3) II

Prerequisite: Engineering 140.

Psychrometrics. Mass transfer. Two-phase flow. Heat transfer. Thermoelectric refrigeration. Change of phase.

145. Mechanics of Machinery (3) I, II

Prerequisite: Engineering 40 and 50B.

An extension of the principles of statics and dynamics to mechanisms and to mechanical systems. Analysis of velocity and acceleration and the determination of static and dynamic forces. Evaluation of stability of systems.

146A. Elements of Machine Design (3) I, II

Prerequisite: Engineering 116.

Application of mechanics, physical properties of materials, and strength of materials to the design of machine elements.

### 146B. Advanced Machine Design (3) II

Prerequisite: Engineering 146A.

Advanced topics in strength of materials including energy methods, stress concentrations, curved beams, and thick-walled cylinders. Applications to design of machine elements.

### 147A. Introduction to Mechanical Vibrations (3) I

Prerequisite: Engineering 116.

Analysis of mechanical vibration; single- and multi-degree of freedom systems; free and forced vibrations; vibration isolation; vibration absorbers. Theory of vibration measuring instruments.

147B. Experimental Vibrations (3) II

Prerequisite: Engineering 147A.

Experimental problems utilizing vibration excitation equipment, recording systems, transducers, digital and analog computers.

#### 148. Engineering Thermodynamics (4) I, II

Three lectures and three hours of laboratory.

Prerequisite: Engineering 115.

Further development of the laws of classical thermodynamics. Applications to energy conversion devices.

### 149. Advanced Thermodynamics (3) I

Prerequisite: Engineering 148.

Statistical thermodynamics with engineering applications. Consideration of material properties and chemical equilibrium.

### 150A. Low Speed Aerodynamics (3) I

Prerequisites: Credit or concurrent registration in Engineering 115 and 115L.

Subsonic flow, airfoil and wing theory, experimental characteristics of wing sections, high lift devices.

### 150B. High Speed Aerodynamics (3) II

Prerequisites: Engineering 143 or 150A.

Supersonic flow, two- and three-dimensional compressible flow, wings in compressible flow, two- and three-dimensional method of characteristics, transonic flow.

### 151A-151B. Aerospace Structural Analysis (3-3) I, II

Prerequisites: Engineering 116 and credit or concurrent registration in Engineering 187B or Mathematics 118B. Engineering 151A is prerequisite to 151B.

Methods of structural analysis including both the static and dynamic aspects of problems encountered in the flight of aerospace vehicles.

### 152. Aircraft Propulsion Systems (3)

Prerequisite: Engineering 148 or 150A.

Theory and performance characteristics of aircraft propulsion systems including reciprocating engines, turbojets, ramjets, etc.

### 153A. Aerospace Flight Mechanics (3) II

Prerequisites: Engineering 50B, and 187A or Mathematics 118A.

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 153.)

# 153B. Intermediate Aerospace Flight Mechanics (3) I

Prerequisite: Engineering 153A.

A continuation of Engineering 153A to include orbit determination techniques, general and special perturbations, artificial satellites, rocket dynamics and transfer orbits, earth-moon trajectories, and interplanetary trajectories.

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# 154. Experimental Aerodynamics (2) II

One lecture and three hours of laboratory.

Prerequisites: Credit or concurrent registration in Engineering 150A.

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.

155. Matrix Methods in Aerospace Structures (3)

Prerequisite: Engineering 151B.

Static and dynamic analysis of aerospace structures utilizing matrix methods.

### 156. Intermediate Dynamics (3)

methods.

Prerequisites: Engineering 50B, 60, and Engineering 187A or Mathematics 118A. Kinematics and kinetics of systems of particles and rigid bodies. Dynamic analysis procedures for studying mechanical, electrical, and electromechanical systems. Variational

### 157. Intermediate Fluid Mechanics (3)

Prerequisites: Credit or concurrent registration in Engineering 115, and Engineering 187B or Mathematics 118B.

Kinematics of fluid motion. Conservation of mass, momentum, and energy. Ideal and viscous flows and applications. Boundary layer approximations.

### 158. Aircraft Design and Performance (3)

Prerequisite: Engineering 150B.

Aircraft design and evaluation including choice of airfoil and wing planform, aircraft fuselage design, control surfaces, power plants, and integration of the separate aircraft components.

### 159. Aircraft Stability and Control (3)

Prerequisites: Engineering 154, and credit or concurrent registration in Engineering 187B.

Static stability and control, general equations of unsteady motion, stability derivatives, stability of uncontrolled motion, response of aircraft to actuation of controls. (Formerly numbered and entitled Engineering 190G, Engineering Applications.)

### 160A-160B. Principles of Chemical Engineering (3-3)

(Same course as Chemistry 160A-160B.)

Prerequisite: Credit or concurrent registration in Engineering 108 or Chemistry 109A or 110A, or equivalent.

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.

### 161. Creativity in Design (3) II

Methods to stimulate creativity in design. Investigation of hidden blocks to creative thought. Emphasis on placing students in a design situation requiring an inventive or creative solution.

# 162. Transistor Circuit Analysis (3) I, II

Prerequisite: Engineering 114.

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 182.)

# 164. Solid-State Devices (3) I

Prerequisite: Engineering 114.

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.

# 165. Biomedical Instrumentation (3) I

Prerequisite: Engineering 101 or 103.

Instrumentation systems to monitor, control and record physiological functions. (Formerly offered under Engineering 196A, A-T Biomedical Instrumentation.)

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

Refer to Honors Program.

167. Control System Components (3) II

Prerequisites: Engineering 100, 101, and 111.

Position transducers, phase-sensitive demodulators, static magnetic and rotating amplifiers, and servomotors. Derivation of component transfer functions. (Formerly numbered and entitled Engineering 131, Electromechanical Control Devices.)

167L. Control Systems Components Laboratory (1) II

Prerequisite: Credit or concurrent registration in Engineering 167.

Experimental determination of transfer functions for control system components. (Formerly a part of Engineering 131.)

### 168. Feedback Control Systems (3) I

Prerequisites: Engineering 112 and 114.

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 138A.)

### 169. Advanced Feedback Control Systems (3) II

Prerequisite: Engineering 168.

A continuation of Engineering 168 to include feedback compensation, advanced compensation techniques, signal flow theory, state-variable techniques, introduction to nonlinear and sampled-data control systems.

### 169L. Feedback Control Systems Laboratory (1)

Three hours of laboratory.

Prerequisites: Engineering 114L, 167, and credit or concurrent registration in Engineering 168.

Analysis of steady-state and transient response of uncompensated and compensated feedback control systems using transfer functions and frequency response techniques. (Formerly numbered Engineering 138B.)

# 170. Intermediate Engineering Problem Analysis (3) I, II

Prerequisite: Engineering 40.

Advanced use of Fortran and other computer programming languages for engineering problem analysis.

#### 172. Interactive Computing (2) I, II

One lecture and three hours of laboratory.

Prerequisite: Credit or concurrent registration in Engineering 114.

Use of electronic calculators and timesharing terminals for circuit analysis computation and plotting. (Formerly offered under Engineering 196A, Minicomputer-aided Electronics.)

### 173. Electronic Analog Systems (3)

Prerequisite: Engineering 114.

Modern analog computers using electronic and electromechanical elements. Operational amplifiers, integrators, summing devices and nonlinear elements. (Formerly numbered Engineering 193.)

# 174. Pulse and Digital Circuits (3) I, II

Prerequisite: Engineering 114.

Diodes, transistors, and integrated circuits in switching systems. Device switching characteristics. Characterization of commercially available complex-function microcircuits.

# 175. Advanced Pulse and Digital Circuits (3) II

Prerequisite: Engineering 174. Digital system design using linear elements. Microcircuit amplifiers, sweep circuits, JFETs and MOS devices, A/D and D/A converters.

# 176. Logic Design and Switching Circuits (3) I, II

Prerequisite: Engineering 101. Combinational switching networks. Introduction to sequential circuits.

# 177. Advanced Logic Design and Switching Circuits (3) I, II

Prerequisite: Engineering 176.

Detailed synthesis of synchronous and asynchronous sequential circuits. Impact of microcircuit technology on practical logic design.

# 178. Computer Organization (3) I, II

Prerequisites: Engineering 40 or Mathematics 7, and Engineering 176.

Data and information structure, machine and assembly language programming, arithmetic and control units microprogramming, memory devices, input-output devices, channels and operating systems concepts.

# 179L. Switching Circuits Laboratory (1) II

Prerequisites: Engineering 174 and 176.

Switching diodes, bipolar transistors, FETs, and integrated circuits. Combinational and sequential switching systems. (Formerly numbered Engineering 177L.)

180. Principles of Engineering Economy (3) I, II

Application of the mathematics of finance to engineering and managerial decision making.

### 181. Hydrodynamics (3)

Prerequisites: Engineering 50B, and 187A or Mathematics 118A or 119 or 124.

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. 183. Simulation of Engineering Systems (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Engineering 40 and 187A.

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.

184. Experimental Strain Measurements and Analysis (3)

Two lectures and three hours of laboratory.

Prerequisites: Engineering 60 and 116.

Laboratory methods for measuring deformation, strains, and forces. Emphasis on instrumentation.

187A-187B. Methods of Analysis (3-3) I, II

Prerequisite: Mathematics 52. Engineering 187A is prerequisite to 187B.

Solutions of advanced engineering problems in fluids, thermodynamics and electricity utilizing analytical methods, analogs, dimensional analysis and the theory of models.

188. Digital Solutions of Engineering Problems (3) I, II Prerequisites: Engineering 40 or Mathematics 7, and Engineering 187A. Digital solution of classes of engineering problems. Application of numerical methods with consideration of limitations imposed by computer and programming language characteristics.

189. Automatic Control Systems (3) II

Prerequisites: Engineering 50B, 100, and 187A.

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.

### 190A. Civil Engineering Structural Design (3) II

One lecture and six hours of laboratory.

Prerequisites: Engineering 120A and 122.

Structural design in steel; structural connections; tension and compression members; beams; building code requirements applied to design of buildings of various structural materials including steel.

### 190C-190D. Mechanical Engineering Applications (2-2) I, II

Six hours of laboratory. Prerequisites for 190C: Engineering 107, 108, and 116.

Prerequisites for 190D: Engineering 145, 146A, 148, and 190C. Applications of engineering principles to design of machinery and energy conversion systems. Individual student projects.

# 190G-190H. Aerospace Engineering Applications (2-2) I, II

Six hours of laboratory.

Prerequisites for 190G: Engineering 150B, 151A, and 154. Prerequisites for 190H: Engineering 190G. Student projects in aerospace design.

### 191. Microwave Devices (3) II

Prerequisite: Credit or concurrent registration in Engineering 139.

Varactor diodes and applications, microwave switches, limiters and phase shifters, detector and mixer diodes and circuits, avalanche transit-time devices, bulk-effect devices, microwave transistors and circuits.

# 192A. Air Environment (2) I, II

Effects of air pollution, sources of pollution, atmospheric chemistry, measurement and instrumentation, automobile development and emissions.

# 192B. Land Environment (2) I, II

Man's interaction with the land environment; extraction of natural resources; disposal of wastes; land development; seismic problems related to land usage.

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.

193. Modern Power Systems I (3) I

Prerequisites: Engineering 100, 111, and 187A.

Modern power system elements; calculation of load flow, fault currents, and system stability. (Formerly offered under Engineering 196B, A-T Modern Power Systems I.)

# 194. Modern Power Systems II (3) II

Prerequisite: Engineering 193.

Transient response of modern power system elements; positive, negative and zero sequence impedance; subharmonic effects.

# 196A-196B. Advanced Engineering Topics (1-3, 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 196A, 196B, and 199. (Formerly numbered Engineering 196.)

### 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 196A, 196B, and 199.

### Graduate Courses in Aerospace Engineering

### AE 200. Seminar (1-3)

Prerequisite: Consent of the graduate adviser and instructor.

Intensive study of selected topics in aerospace engineering, topic to be announced in class schedule. Maximum credit six units applicable on a master's degree.

#### AE 202. Aeroelasticity (3)

Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Engineering 187B or Mathematics 118B.

Aircraft and missile structures deformed under static and dynamic loads; aeroelastic instability, vibration modes, divergence, loss of control and alteration of lift distribution; introduction to flutter analysis.

#### AE 204. Flight Dynamics-Stability and Control (3)

Prerequisite: Credit or concurrent registration in Engineering Mechanics 201.

Dynamic stability and control of aerospace vehicles. Stability derivatives, stability of uncontrolled motion, response to actuation of controls, automatic stability and control.

### AE 205. Flight Dynamics-Theory of Flight Paths (3)

#### Prerequisite: Engineering 150B.

Analysis of trajectories of aircraft, missiles, satellites, and spacecraft subjected to uniform or central gravitational forces, aerodynamic forces, and thrust.

AE 211. Aerodynamic Noise (3) Prerequisite: Engineering Mechanics 243.

Jet noise, sonic boom, boundary layer noise, and methods of suppression.

### AE 222. Aerothermal Structural Analysis (3)

Prerequisite: Engineering Mechanics 221.

Stress analysis of structures at elevated temperatures.

### AE 241. Hydrodynamic Stability (3)

Prerequisite: Engineering Mechanics 243.

Stability of boundary layers, superposed fluids, fluids with thermal gradients, hydromagnetic flow.

AE 242. Theory and Aerodynamics of Transonic Flight (3)

Prerequisite: Aerospace Engineering 243.

Application of engineering principles to the analysis of transonic flight.

### AE 243. Supersonic Flow Theory (3)

Prerequisite: Engineering 150B.

Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady flight, slender-body theory, methods of characteristics.

# AE 244. Hypersonic Flow Theory (3)

Prerequisite: Aerospace Engineering 243.

Two- and three-dimensional hypersonic flows. Hypersonic similarity parameter, hypersonic small-disturbance theory; Newtonian flow, shock-layer, and other methods for blunt bodies.

# AE 245. Magnetofluidmechanics (3)

Prerequisite: Engineering Mechanics 243.

Study of the effects of interaction of an electromagnetic field with an electrically conducting fluid. Stability, boundary layers, shock waves, and other applications.

AE 250. Principles of Electromagnetic Propulsion (3)

Prerequisite: Engineering 187B.

Basic concepts of plasmas and magnetogasdynamics; developing magnetogasdynamic power plants.

AE 253. Seminar on Boundary Layer Topics (3)

Prerequisite: Engineering Mechanics 244.

Boundary layer control, dissociation in boundary layers, ablation in boundary layers.

AE 296. Advanced Topics in Aerospace Engineering (2 or 3)

Advanced study in the field of aerospace engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

AE 297. Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units applicable on a master's degree. Graduate Courses in Civil Engineering

CE 200. Seminar (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in advanced civil engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

CE 201. Advanced Theory of Structures (3)

Prerequisites: Engineering 120B and Mathematics 118A.

Analysis of statically indeterminate structures based on principles of deflected structures. Approximate analysis of structures under lateral loads for rigid and shear wall structures.

CE 202. Design of Thin Shell Structures (3)

Prerequisite: Engineering 120B.

Analysis and design of typical civil engineering thin shell structures.

CE 203. Plastic Design in Steel (3)

Prerequisite: Engineering 120B.

Analysis and design of steel framed structures for ultimate load. Connections, secondary design problems, column stability, and repeated loading.

CE 205. Prestressed Concrete Structures (3)

Prerequisite: Engineering 120A.

Fundamental concepts of prestressed concrete theory. Design applications to various types of structures.

CE 206. Matrix Analysis of Structures (3)

Prerequisite: Engineering 120A.

Development of matrix methods for the analysis of structural systems. Force methods, displacement methods. Application of the digital computer to structural analysis.

# CE 207. Dynamics of Structures (3)

Prerequisite: Engineering 120A.

Dynamic disturbances, structures with variable degrees of freedom, free vibrations of slender elastic beams; continuous beams, rigid frames, floor systems. Energy methods in structural dynamics.

# CE 208. Numerical Methods in Structural Engineering (3)

Prerequisite: Engineering 120B.

Moments and deflections in beam systems; elastic and inelastic stability, columns and beams on elastic supports, vibration of structural systems.

CE 209. Computer Analysis of Structures (3)

Prerequisites: Engineering 40 and 120B.

Fundamentals of matrix notation, equilibrium equations, compatibility relations, constitutive equations, joint releases. General algorithms for writing computer programs for space structures, trusses and frames. Use of existing programs such as ICES/STRUDL, NASTRAN, etc., for solving structural problems.

# CE 210. Finite Element Analysis of Structures (3)

Prerequisites: Engineering 40 and 120A.

General procedure, various types of finite elements; analysis and design of isotropic and orthotropic plates and shells, deep beams, and shear walls using finite element technique; use of digital computers for solutions. Application to civil engineering structures.

CE 220. Traffic Engineering (3)

Prerequisite: Engineering 127. Traffic characteristics and studies. Control and regulation of street and highway traffic. Parking facilities, mass transportation, traffic engineering administration.

CE 222. Mass Transit Engineering (3)

Prerequisite: Engineering 126.

Urban transportation and land use, characteristics of urban travel patterns, estimation of transit usage, planning of transit systems, economic problems of mass transportation. Case studies of existing and proposed systems.

CE 230. Open Channel Hydraulics (3)

Prerequisite: Engineering 123A.

Open channel flow theory, analysis, and problems, including studies of critical flow, uniform flow, gradually varied and rapidly varied flow, all as applied to the design of channels, spillways, energy dissipators, and gravity pipelines.

CE 231. Engineering Hydrology (3)

Prerequisite: Engineering 123A.

Measurement and interpretation of precipitation, evapotranspiration, stream flow and groundwater flow; hydrologic methodology and applications.

CE 232. Fluvial Hydraulics (3) Prerequisite: Engineering 123A.

Characteristics of rivers; mechanics of sediment transport; hydraulics and design of alluvial channels; channel stability; model studies.

CE 235. Water Quality Engineering (3)

Prerequisite: Engineering 125.

Development of water quality criteria. Survey of current methods of water treatment, wastewater treatment and water renovation. Economic considerations of water quality management.

CE 236. Water Quality Processes (3)

Two lectures and three hours of laboratory.

Prerequisite: Engineering 125.

Theoretical and laboratory study of the chemical and microbiological processes which govern modern water and wastewater treatment.

CE 240. Advanced Soil Mechanics (3)

Prerequisite: Engineering 122.

Advanced theories of soil mechanics and their applications to design, including physicochemical behavior of soils, theories of compaction, consolidation, stress distribution, shear strength, settlement analyses, lateral pressures, and bearing capacity of soils.

#### CE 241. Advanced Foundation Engineering (3)

Prerequisite: Engineering 124.

Advanced theories of soil bearing capacity and stress distribution in soils. Analysis and design of foundations and retaining walls. Shallow foundations, piles, piers and caissons. Design of foundations for dynamic loads. Dewatering and other field problems.

#### CE 242. Seepage and Earth Dams (3)

Prerequisite: Engineering 122.

Principles governing the flow of water through soils and their application in the design of earth and rock fill dams. Stability analysis and design of earth dams.

CE 243. Experimental Soil Mechanics (2)

One lecture and three hours of laboratory.

Prerequisite: Credit or concurrent registration in Civil Engineering 240. Techniques of laboratory testing for the determination of the engineering properties of soils. Applications in foundation engineering, earth dams, highways, airports and underwater soil engineering.

#### CE 244. Soil Structure Interaction (3)

Prerequisite: Credit or concurrent registration in Civil Engineering 240.

Analysis of stresses and deformations of structural elements supported by soil. Analysis of pile foundations subject to lateral, vertical and combined loads by numerical and finite element methods. Solutions of slabs and mat foundations.

### CE 280. Seminar in Structural Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in structural engineering. Maximum credit six units applicable on a master's degree.

CE 281. Seminar in Transportation Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in transportation engineering. Maximum credit six units applicable on a master's degree.

CE 282. Seminar in Soil Mechanics and Foundation Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in soil mechanics and foundation engineering. Maximum credit six units applicable on a master's degree.

CE 285. Seminar in Construction Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in construction engineering. Maximum credit six units applicable on a master's degree.

CE 296. Advanced Topics in Civil Engineering (2 or 3)

Advanced study in the field of civil engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

# CE 297. Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser. Research in engineering. Maximum credit six units applicable on a master's degree.

Engineering / 203

Graduate Courses in Electrical Engineering

EE 200. Seminar (1-3)

An intensive study in advanced electrical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

EE 201. Seminar in Electromagnetic Systems (1-3)

An intensive study in electromagnetic systems. Maximum credit six units applicable on a master's degree.

### EE 202. Seminar in Electronic Design (1-3)

An intensive study in electronic design. Maximum credit six units applicable on a master's degree.

### EE 203. Seminar in Digital Systems (1-3)

An intensive study in digital systems. Maximum credit six units applicable on a master's degree.

### EE 204. Seminar in Feedback Control Systems (1-3)

An intensive study in feedback control systems. Maximum credit six units applicable on a master's degree.

### EE 205. Seminar in Communications Systems (1-3)

An intensive study in communication theory and systems. Maximum credit six units applicable on a master's degree.

### EE 206. Seminar in Computer Engineering (1-3)

Intensive study in computer engineering topics. Maximum credit six units applicable on a master's degree.

### EE 210. Linear System Analysis (3)

Prerequisites: Engineering 111 and credit or concurrent registration in Engineering 187B or Mathematics 118B

Loop and nodal system equations based on topological considerations, four-terminal network theory using matrices. Fourier integral transform theory as applied to linear system analysis. Positive real functions and associated testing methods.

# EE 211. Synthesis of Active and Passive Networks (3)

Prerequisite: Electrical Engineering 210.

Frequency-domain synthesis of driving point and transfer impedances in passive and active networks. Canonical forms and network equivalents. Time-domain synthesis and considerations of pulsed-data systems.

# EE 214. Computer-aided Network Analysis and Design (3)

Prerequisites: Engineering 112 or equivalent computer-aided circuit design, Electrical Engineering 210, and Fortran programming.

Approximation theory, device modeling, topological analysis of networks, applications of general purpose, computer programs, passive and active filter design, circuit optimization. EE 216. Noise in Electrical Devices (3)

Prerequisite: Engineering 162.

Major types and origins of electrical noise and the effects of noise on system behavior. Emphasis on concepts of noise as a random process, as distinguished from systematic or periodic interference.

# EE 220. Feedback Control Systems (3)

Prerequisite: Engineering 168.

Analysis and synthesis of feedback control systems using feedback compensation. Multiple-loop control systems; a-c feedback control systems; optimization.

EE 222. Sampled-Data Systems (3)

Prerequisite: Engineering 168.

Analysis and synthesis of sampled-data and digital control systems; techniques for the design of time optimal sampled-data control systems; z-transform calculus and difference equation synthesis techniques for determining stability and system response. (Formerly entitled Non-Linear Systems.)

EE 225. State Space Analysis of Control Systems (3)

Prerequisite: Engineering 168.

State space representation of control systems, state transition flow graphs, methods of solution of the state equation, controllability and observability, and introduction to optimal

# EE 231. Integrated Circuits (3)

Prerequisite: Engineering 174.

Fabrication methods, logic gates, multivibrators, medium- and large-scale integration techniques and devices. Linear integrated circuits and MOS technology. Emphasis on proper application of devices through knowledge of circuit operation and interpretation of manufacturers' specification sheets.

# EE 232. Linear Semiconductor Circuit Design (3)

Prerequisite: Engineering 162.

Field effect transistors and circuits; quantitative variable nature of transistor parameters; differential and chopper stabilized dc amplifiers; high efficiency switching mode power amplifiers, converters and inverters; noise, reliability considerations and high speed switching.

# EE 234. Semiconductor RF Circuit Design (3)

Prerequisite: Engineering 134.

Wide band amplifiers, low level RF amplifiers and mixers, IF amplifiers, AGC, tuning and stability problems, unilateralization and mismatching techniques, harmonic oscillators, VHF power amplifiers including varactor multipliers.

### EE 240. Antennas and Propagation (3)

Prerequisite: Engineering 139.

Impedance characteristics and radiation patterns of thin linear antenna elements; field intensity calculations. Tropospheric and ionospheric propagation; propagation anomalies.

# EE 242. Microwave Networks (3)

Prerequisite: Engineering 139. Equivalent circuits for waveguide discontinuities developed on the basis of mode theory, linearity, reciprocity, and symmetry. Application of general network theory to wave guides,

cavity resonators and antennas.

### EE 246. Radar Systems (3)

Prerequisite: Engineering 139.

The radar equation; characteristics of CW, FM, MTI, pulse-doppler and tracking radar system; transmitters, antennas and receivers; detection of signals in noise, extraction of information; propagation effects; system engineering and design.

### EE 250. Quantum Electronics (3)

Prerequisite: Engineering 164.

Quantum mechanics for engineers concerned with its application to solid-state devices. Basic principles and engineering applications of lasers.

### EE 252. Optical Communications (3)

Prerequisite: Electrical Engineering 250.

Fundamentals of electro-optical technology from ultraviolet through infrared. Characteristics of thermal and laser radiation including generation, transmission, detection, data processing and display.

EE 260. Modern Communication Theory I (3)

Prerequisite: Engineering 133 or Mathematics 134.

Probability theory, random variables, random processes, Gaussian process, random signals through linear systems, noise considerations, optimum receiver design, applications to digital and wave-form communication. (Formerly offered under Electrical Engineering 200, Seminar in Modern Communication Theory I.)

EE 261. Modern Communication Theory II (3)

# Prerequisite: Electrical Engineering 260.

Estimation of signal parameters in noise. Estimation of spectral densities and correlation functions. Intersymbol interference. Adaptive and feedback systems.

### EE 263. Coding Theory (3)

Prerequisite: Engineering 133.

The theory of coding to combat noise over communication channels. Redundancy added to messages to assure arbitrarily small error rates at a given information rate. Discussion of channels and capacity. Block codes, cyclic codes, BCH codes, convolutional code. (Formerly offered under Electrical Engineering 200.)

EE 264. Digital Processing of Signals (3)

### Prerequisite: Engineering 135.

Theory of digital signal processing. Emphasis on digital filters, discrete spectrum analysis, and windows. Fast Fourier transforms. Generalized linear filtering; Cepstral analysis and deltic loops. (Formerly offered under Electrical Engineering 200.)

### EE 270. Microprogramming (3)

Prerequisite: Engineering 178. Fundamentals of microprogramming and read only storage technology as related to the design of digital computers. (Formerly offered under Electrical Engineering 200.)

# EE 271. Computer Input/Output Devices and Systems (3)

# Prerequisite: Engineering 178.

Control programs, interrupt procedures, I/O programming techniques, interfaces, channels, magnetic recording techniques, I/O devices. (Formerly offered under Electrical Engineering 200.)

### EE 272. Minicomputer Design and Applications (3)

Prerequisite: Engineering 178.

Current minicomputer architectures. CPU-oriented and universal bus-oriented machines. (Formerly offered under Electrical Engineering 203, Seminar in Digital Computing Systems (Minicomputers))

### EE 276. Fault Tolerate Computing (3)

Prerequisite: Engineering 178.

Triple modular redundancy, standby sparing, quaded logic, parity and residue checking of computer systems and subsystems. Diagnostic programming and fault testing fundamentals. (Formerly offered under Electrical Engineering 200.)

EE 277. Topics in Logic Design (3) II

Prerequisite: Engineering 177.

Review of current technical periodic literature in logic design and digital systems. Stress on specialized synthesis techniques and recent theoretical developments.

### EE 278. Electronic Digital Systems (3)

Prerequisite: Engineering 178.

Design of arithmetic, control and memory units. Detailed comparative analysis of the system organization and operation of several digital computers, with special attention to the interdependence of design decisions and their dependence upon the intended system application. (Formerly numbered Electrical Engineering 236.)

EE 296. Advanced Topics in Electrical Engineering (2 or 3) Advanced study in the field of electrical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

### EE 297. Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units applicable on a master's degree.

# Graduate Courses in Engineering Mechanics

### EM 200. Seminar (2 or 3)

Advanced study of, or within, one phase of engineering mechanics, such as elasticity, plasticity, rheology, and micromeritics; buckling, vibration, and stability phenomena; hydrodynamics and magnetohydrodynamics; incompressible, compressible, and non-Newtonian flow. May be repeated with new content. Maximum credit six units applicable on a master's degree.

# EM 201. Advanced Dynamics (3)

Prerequisites: Engineering 50B and 187A or Mathematics 118A.

Kinematics and kinetics of systems of particles and rigid bodies with special reference to engineering problems. Moving reference axes, generalized coordinates, Lagrangian equations, Hamilton's principle and variational methods.

# EM 203. Theory of Vibrations (3)

Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Engineering 187B or Mathematics 118B.

Linear and nonlinear periodic phenomena as applied to discrete systems and continuous media with application to physical problems.

EM 204. Theory of Nonlinear Vibrations (3)

Prerequisite: Engineering Mechanics 201.

Analysis of discrete systems with one or more degrees of freedom. Phase plane, harmonic balance, and other methods. Stability.

# EM 205. Theory of Random Vibrations (3)

Prerequisite: Engineering Mechanics 203.

Random processes with applications to vibration of discrete and continuous systems.

# EM 210. Continuum Mechanics (3)

Prerequisite: Engineering 187B or Mathematics 118B.

Equations for the stress, deformation, and motion in a continuous medium; application in fluid and solid mechanics EM 221. Theory of Elasticity (3)

Prerequisites: Engineering 116 and credit or concurrent registration in Engineering 187B or Mathematics 118B. Engineering 186 is recommended.

Analysis of stress and strain: stress-strain relations; the equations of elasticity; uniqueness theorem; compatibility conditions; flexure and torsion. Vector and tensor notation will be

# EM 222. Theory of Anisotropic Elasticity (3)

Prerequisite: Engineering Mechanics 221.

Generalized Hooke's law, transformation of elastic constants, laminated constitutive equations, laminated plates and shells, torsion of anisotropic bodies, design criteria for combined loading.

EM 223. Energy Methods in Mechanics (3)

Prerequisite: Engineering Mechanics 221.

Variational energy principles applied to the dynamics of rigid bodies, analysis of elastic frames; theories of plates and shells, buckling, and vibrations. EM 225. Theory of Plates (3)

Prerequisite: Engineering Mechanics 221.

Bending and buckling theory of plates; application of small deflection and large deflection theories to plates with various boundary conditions; use of approximate methods and exact methods in solution.

# EM 226. Theory of Shells (3)

Prerequisite: Engineering Mechanics 221. Membrane and bending theory of shells of revolution and shells of arbitrary shape; exact and approximate methods of solution of shells subjected to axisymmetric and arbitrary loads.

# EM 227. Theory of Elastic Stability (3)

Prerequisite: Engineering Mechanics 221. Stability of elastic systems. Differential equations of stability by summation of forces and movements, and by the variational method. Applications.

# EM 233. Theory of Plasticity (3)

Prerequisite: Engineering Mechanics 221.

Inelastic stress-strain relations. Solutions to engineering problems with ideally-plastic, strain-hardening, and visco-elastic materials.

EM 243. Advanced Fluid Mechanics I (3)

Prerequisites: Engineering 115 and credit or concurrent registration in Engineering 187B or Mathematics 118B.

Fluid kinematics and kinetics. Conservation of mass, energy, and momentum, applied to Newtonian fluids. Navier-Stockes equations. Couette and Poiseuille flow. Potential flow. Introduction to turbulence and boundary layer theory. Vector and tensor notation will be used.

### EM 244. Advanced Fluid Mechanics II (3)

Prerequisite: Engineering Mechanics 243.

A continuation of Engineering Mechanics 243. Further work in laminar and turbulent flow, and boundary layer theory. Diffusion. Applications to engineering problems.

EM 296. Advanced Topics in Engineering Mechanics (2 or 3)

Advanced study in the field of engineering mechanics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

### EM 297. Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units applicable on a master's degree. Graduate Courses in Mechanical Engineering

#### ME 200. Seminar (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in advanced mechanical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

# ME 220A-220B. Mechanical Vibrations (3-3)

Prerequisites: Engineering 147B, 183, and 187B.

Topics in vibration relating to mechanical design such as nonlinear vibrations, distributed mass systems, random vibrations, mobility analysis, isolater design.

ME 221. Stress Analysis (3)

Prerequisites: Engineering 146B and 187B.

Topics in applied elasticity, advanced study of the resistance of materials and experimental stress analysis. Failure theories, energy methods, limit design, theory of plates and shells. Photoelasticity, brittle lacquers, strain gages, and analogs in determining static, dynamic and residual stress distributions.

ME 222A-222B. Synthesis of Machines (3-3)

Prerequisites: Engineering 183 and 187B.

Problems in mechanical design involving synthesis of mechanisms wherein displacement, velocity, acceleration and jerk are paramount considerations.

ME 224. Fluid Power and Control Systems (3)

Prerequisite: Engineering 189.

Analysis of dynamic performance of physical systems such as pneumatic, hydraulic and hot-gas. Transient forces and valve instability. Servo characteristics.

# ME 231. Advanced Science of Materials (3)

Prerequisite: Engineering 107.

Structure and physical properties of solids. Imperfections in materials and their effect on various properties. Elasticity, plasticity, and fracture of metals related to atomic and crystal structure.

ME 232. Physical Metallurgy for Engineers (3)

Prerequisites: Engineering 107 and 108.

Fundamentals of crystallography, imperfections, alloying and deformation. Composition, temperature, prior thermal and mechanical treatment on structure of metal; relationship of structure to mechanical properties.

ME 233. Mechanical Metallurgy for Engineers (3)

Prerequisites: Engineering 107 and 108.

Fundamentals of plastic deformation of crystalline solids; elementary theory of statics and dynamics of dislocations, deformation, fracture and metallurgical variables on mechanical properties; environment-failure interactions.

ME 234. High Temperature Materials (3)

Prerequisite: Engineering 107.

Behavior of metals, cermets, and nonmetallic materials at high temperatures. Effect of environment and service conditions on composition, structure, and physical properties.

ME 246. Advanced Topics in Automatic Controls (3)

Prerequisites: Engineering 187A and 189.

Synthesis of linear control systems. Analysis of nonlinear systems by describing function and phase plane methods. Sampled data systems analysis; statistical design techniques and adaptive control.

ME 250. Analytical Thermodynamics (3)

Prerequisite: Engineering 187A.

Advanced concepts of macroscopic thermodynamics. Application of thermodynamics to special systems.

ME 260. Conduction Heat Transfer (3)

Prerequisites: Engineering 140 and 187B.

Conduction heat transfer, multidimensional conduction processes, transient analysis.

ME 262. Convection Heat Transfer (3) Prerequisite: Mechanical Engineering 274.

Convection heat transfer. Advanced theories of forced and free convection.

ME 264. Radiation Heat Transfer (3) Prerequisites: Engineering 140 and 187B.

Radiation heat transfer. Solid body and gaseous radiation.

ME 267. Cryogenic Engineering (3)

Prerequisite: Engineering 148.

Analysis of low-temperature processes and equipment. Physical properties of structural and other materials used in producing, maintaining, and using low temperatures.

ME 270. Gas Dynamics (3)

Prerequisites: Engineering 143 and 187B.

Further consideration of the flow of compressible fluids in conduits. Shock fronts, unsteady flow and real gases.

ME 274. Boundary Layers in Internal Flows (3)

Prerequisites: Engineering 140 and 187B.

Conservation laws applied to boundary layers in viscous, heat conducting fluids; analysis of the boundary layer equations; applications to internal flows.

ME 276. Bearing Design and Lubrication (3) Prerequisite: Engineering 187B.

Friction and wear of materials. Boundary and thick film lubrication. Design of incompressible and compressible fluid bearings; rolling-element bearings.

ME 280. Aircraft and Missile Propulsion (3)

Prerequisites: Engineering 142, 143, and 187B.

Analysis of ideal gas turbine cycles. Principles of regeneration, reheat and intercooling. Thermodynamic analysis and performance of turbojet engines, ramjet engines and rocket motors. Rocket jet propellant systems. Dynamics of rocket propulsion free of gravity and air

ME 281. Propulsion Systems for Spacecraft (3)

Prerequisites: Engineering 148 and 187B.

The physical and chemical laws that govern the performance, selection and design of nonair-breathing propulsion systems for space applications.

ME 284. Theory of Turbomachines (3)

Prerequisites: Engineering 143 or 150A.

Application of the fundamental laws of fluid mechanics to the problems of energy transfer between fluid and rotor. Performance characteristics or turbomachines. Study of loss mechanisms.

ME 285. Direct Energy Conversion (3)

Prerequisites: Engineering 149 or ME 250; and Engineering 187A.

Application of physical and chemical laws to the analysis, design, and evaluation of various direct energy conversion systems.

ME 296. Advanced Topics in Mechanical Engineering (2 or 3)

Advanced study in the field of mechanical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

ME 297. Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser. Research in engineering. Maximum credit six units applicable on a master's degree. Graduate Courses in Engineering

#### E 290. Problem Analysis (3)

Prerequisite: Consent of graduate adviser.

Review of methods for investigation and reporting of data. Consideration of problems in preparation of project or thesis.

E 295. Seminar in Environmental Engineering (3) Prerequisite: Engineering 192A, 192B, or 192C.

Environmental problems including an intensive investigation of selected topics.

E 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Three units maximum credit.

E 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# English

### In the College of Arts and Letters

#### Faculty

Emeritus: Adams, J., Burnett, Gulick, Haskell, Johnson, Kennedy, Marchand, Phillips, Shouse, Theobald

Professors: Baker, Benson, Dickinson, Gellens, Henig, Ingham, Keller, Monteverde, Perkins, Sanderlin, Sandstrom, Santangelo, Tozer (Director), Vanderbilt, Wanlass, Widmer

Associate Professors: Brashers, Chater, Davis, Hinkle, Kehler, H., Kohler, McLeod, Moramarco, Nelson, Nichols, Patterson, Redding, M., Redding, R., Rother, J., Savvas, Stiehl, Taylor

Assistant Professors: Adams, E., Aninger, Barry, Boe, Borkat, Brown, Bumpus, Butler, DeMarinis, Farber, Forrey, Gervais, Karnath, Kehler, D., Malmsheimer, O'Reilly, Rogers, Rush, Shojai, Sullivan, Thrane, Tunberg, Wall, Wheeler

Lecturers: Davidson, Kanaseki, Metcalf, Rother, C.

### Offered by the Department

Master of Arts degree in English.

Major in English with the A.B. degree in liberal arts and sciences. Minor in English.

Teaching major in English for single subject teaching credential.

Courses in comparative literature. (Refer to this section of the catalog under Comparative Literature.)

# **English Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. No more than 48 units in English and comparative literature courses can apply to the degree. To satisfy the requirement in foreign language, students may not use courses in conversation.

A minor is not required with this major.

### 210 / English

Preparation for the major. English 6, 51A-51B; six units selected from English 53A-53B, or Comparative Literature 52A-52B; and three units of electives in English excluding 1X, 1Y, or 1Z. (18 units.)

Major. A minimum of 24 upper division units in English, selected with the approval of the adviser, to include (a) English 101, (b) at least nine units in one of the areas of study listed below, and (c) at least three units in British Literature before 1800, three units in British Literature after 1800, and three units in American Literature. The same course may be used to satisfy requirements under both (b) and (c). No more than six units of courses in comparative literature may be included as part of the major in English.

#### Areas of Study:

British Literature before 1800: English 102, 103, 104, 111, 112, 113A, 113B, 121A, 122A, 122B, and Comparative Literature 120.

British Literature after 1800: English 114A, 114B, 115, 116, 117, 118, and 121B.

American Literature: English 130, 131, 133, 134, 135, and 136.

Modern Literature: English 116, 117, 118, 134, 135, and 136.

Literary Types, Theory, and Criticism: English 140, 142, 144, 150, 153, and Comparative Literature 124, 125, 126, 150, 152, and 153A-153B.

Creative Writing: English 140, 142A-142B, 144, 149, 170, 171, 172, and 179

NOTE: In addition to the courses listed above, appropriate sections of English 129, 138, 139, 149, 190, and 199 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 6) an equivalent number of units of upper division courses selected with the approval of the departmental adviser.

### **English Minor**

The minor in English consists of a minimum of 15 units in English, nine units of which must be in upper division courses. The English minor is not available to students majoring in comparative literature.

# **English Major**

# For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the English major for the single subject teaching credential are being revised. For further information consult the department.

# **Course Sequences**

All year courses in English may be taken in either semester, and either semester may be taken singly for credit.

### Student Initiated Courses

Students may petition for a course which falls within the competency of the English Department but which is not among the regular course offerings for the present or following semester. Petition forms may be obtained from the Department Secretary.

### **Undergraduate** Proseminars

Each semester, if adequate staffing permits, the Department may offer several of its courses as special, limited-enrollment proseminars. These proseminars 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 for Foreign Students**

Foreign students will be assigned to English 1X, 1Y, 1Z or to English 5 or 6 on the basis of their performance on the English examination for foreign students and an oral interview. 1X, 1Y, and 1Z do not satisfy the university general education requirements, but unit credit is granted for these courses.

Lower Division Courses General

1X. Fundamentals of English for Foreign or Bilingual Students (3) I, II

A first course in English grammar and composition with intensive practice in the Language Laboratory. Satisfactory completion of this course qualifies a student to take English 1Y or, at the discretion of the instructor, English 1Z, 5 or 6.

1Y. English for Foreign or Bilingual Students (3) I, II

Prerequisite: English 1X.

English grammar and composition. Satisfactory completion of this course qualifies a student to take English 1Z or, at the discretion of the instructor, English 5 or 6.

1Z. English for Foreign or Bilingual Students (3) I. II

Prerequisite: English 1Y.

English grammar and composition. A continuation of English 1Y for students who need additional instruction and writing practice. Satisfactory completion of this course qualifies a student to take English 5 or 6.

# 5. Composition and Reading (3) I, II

Formerly English 3.

Practice in composition based on the study of outstanding expository writing in contemporary affairs, the sciences, and the arts. Not open to students with credit for Mexican-American Studies 2B.

6. Composition and Literature (3) I, II

Formerly English 1.

Practice in composition, based on the study of representative works of imaginative literature. Introduction to one or more of the major literary genres: poetry, drama, and fiction.

54. Literary Theory and Criticism (3) I, II

Introduction to the various theories of literature and approaches to literary creation and criticism.

75. Intermediate Composition (3) I, II

Practice in formal composition, based on an analysis of the rhetorical structures of exposition, persuasion, and familiar writing, together with the study of outstanding writing in contemporary affairs, the sciences, the arts, and literature.

#### 89. Studies in Literature (1-3) I, II

Representative literary works of a major author, period, genre, theme, or the like. May be repeated with new content. Maximum credit six units. (Formerly numbered and entitled English 10, Individual Reading.)

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

# 53A-53B. American Literature (3-3) I, II

Semester I: Major American writers from the beginning to 1860. Semester II: American literature from 1860 to the present. (Formerly numbered English 50A-50B.)

# British Literature

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. (Formerly numbered English 56A-56B.)

> **Comparative Literature** (See page 165)

### Creative Writing

# 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. (Formerly numbered and entitled English 61, Sophomore Composition.)

# 71. Creative Writing: Selected Genres (3) I, II

Prerequisite: English 70.

Guidance and extensive practice in writing in one or more of the major genres: poetry, drama, fiction, or the essay. (Formerly numbered and entitled English 62, Directed Writing.)

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### **Upper Division Courses** General

105. The Bible as Literature (3) I. II

(Same course as Comparative Literature 105.)

Prose and poetry of the King James version. (Formerly numbered English 115.) 150. The History of Literary Criticism (3) I

Principles and practices of literary criticism from Greek times to the nineteenth century. (Formerly numbered English 195A.)

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. (Formerly numbered and entitled English 195B, Theory and Practice of Modern Criticism.)

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

175. Advanced Composition (3) I, II

The theory and practice of expository writing, including the contributions of semantics, rhetoric, and logic. (Formerly numbered English 191.)

190. Selected Topics in English (2-3) I, II

Specialized study of a selected topic in literature. May be repeated with new content. Maximum credit six units.

194. Individual Reading (1) I, II

Selected works by a major author. May be repeated with new content. Maximum credit two units. (Formerly numbered English 110.)

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

American Literature

130. Early American Literature (3) I

American Literature from its beginning to 1830.

131. The American Renaissance (3) I, II Major American writers and their works in the period 1830-1865.

133. American Realism and Naturalism (3) I, II American fiction from the Civil War to 1920.

134. Modern American Fiction (3) I, II American fiction from 1920 to the present.

135. Modern American Poetry (3) I, II American poetry from 1865 to the present.

136. American Drama (3) I, II

Dramatic literature by American writers from its beginnings to the present.

138. Topics in American Studies (3) I, II

American Folklore, The Literature of Social Protest, The Intellectual History of American Literature, and the like. May be repeated once with new content, and with the approval of their advisers, more than once by American Studies majors. Maximum credit six units applicable on a master's degree in American Studies.

139. Topics in American Literature (3) I, II

Emerson and Thoreau, Black Writers in America, The Literature of the American South, The Frontier and American Literature, and the like. May be repeated with new content. Maximum credit six units.

# British Literature

101. Shakespeare (3) I, II

An introduction to the writings of Shakespeare. (Formerly numbered English 117A-117B.) 102. Study of Shakespeare (3) II Prerequisite: English 101.

Advanced study of Shakespeare's achievement as a poet and playwright. 103. Chaucer (3) I, II

Chaucer's works, with emphasis on The Canterbury Tales and Troilus and Criseyde. (Formerly numbered English 151.) 104. Milton (3) II

Milton's writings, with emphasis on Paradise Lost. (Formerly numbered and entitled English 120A, The Seventeenth Century: Milton.)

111. Renaissance Literature (3) I, II

English poetry and prose from 1485 to 1603. (Formerly numbered and entitled English 116A, The Age of Elizabeth.)

112. Seventeenth Century Literature (3) II

English poetry and prose from 1603 to 1660. (Formerly numbered and entitled English 120B, The Seventeenth Century: Metaphysical and Cavalier Poets.)

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. (Formerly numbered English 118A-118B.)

114A-114B. Nineteenth Century British Poetry (3-3) I, II

Semester I: The Romantic movement. Semester II: The Victorian period. (Formerly numbered and entitled English 119A, English Romantic Poetry, and English 119B, Victorian Poetry.)

115. Nineteenth Century British Prose (3) I, II

Nonfictional prose of the Romantic and Victorian periods. (Formerly numbered and entitled English 126A, Romantic and Victorian Prose, and English 126B, Late Nineteenth Century British Prose.)

116. Modern British Poetry (3) I. II British poetry since 1900.

117. Modern British Fiction (3) I. II British fiction since 1900.

118. Modern British Drama (3) I, II British drama since 1890.

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. (Formerly numbered and entitled English 143A-143B, The English Novel.)

#### 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.

129. Topics in English Literature (3) I. II

The Works of Spenser, The Metaphysical School of Poetry, The English Satirists, Major Movements in Contemporary English Fiction, and the like. May be repeated with new content. Maximum credit six units.

> **Comparative Literature** (See page 165)

### Creative Writing

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. (Formerly numbered English 149.)

### 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. (Formerly numbered English 142.)

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.

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.

170. The Writing of Poetry (3) I, II

Prerequisite: English 70.

A writing workshop in poetry. May be repeated with new content. Maximum credit six units.

171. The Writing of Fiction (3) I, II

Prerequisite: English 70.

A writing workshop in fiction. May be repeated with new content. Maximum credit six units.

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# 172. The Writing of Nonfiction (3) I

Prerequisite: English 70.

A writing workshop in nonfictional prose. May be repeated with new content. Maximum credit six units.

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**

#### 233. American Literature (3)

Prerequisite: Twelve upper division units in English, with courses in American literature strongly recommended.

Selected works of an author, period, or subject in American literature. Maximum credit six units applicable on a master's degree.

### 234. Literature of the Middle Ages (3)

Prerequisite: Twelve upper division units in English.

Selected works in the literature of the Middle Ages with emphasis on Middle English prose and poetry exclusive of Chaucer.

- 235. Renaissance Literature (3) Prerequisite: Twelve upper division units in English. Selected works in the literature of the Renaissance.
- 236. Restoration and Eighteenth Century Literature (3) Prerequisite: Twelve upper division units in English. Selected works in the literature of the late seventeenth and the eighteenth centuries.

237. Earlier Nineteenth Century Literature (3) Prerequisite: Twelve upper division units in English. Selected works in the literature of the early nineteenth century.

238. Later Nineteenth Century Literature (3) Prerequisite: Twelve upper division units in English. Selected works in the literature of the later nineteenth century.

239. Twentieth Century Literature (3) Prerequisite: Twelve upper division units in English. Selected works in the literature of the twentieth century.

243. Poetry (3) Prerequisite: Twelve upper division units in English. Poetry as a literary form.

244. Fiction (3) Prerequisite: Twelve upper division units in English. Fiction as a literary form.

245. Drama (3)

Prerequisite: Twelve upper division units in English. The drama as a literary form.

# 260. Workshop in Creative Writing (3)

Prerequisite: Consent of instructor and departmental adviser.

Criticism and coaching in the larger forms. Maximum credit six units applicable on a master's degree.

# 279. Tutorial in Creative Writing (3)

Prerequisites: Twelve upper division units in English, including at least six units in creative writing.

Individual guidance for advanced writers who wish to work on special projects in creative writing.

# 290. Bibliography and Methods of Literary Research (3)

Prerequisite: Twelve upper division units in English.

Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research, including editorial procedures. Recommended for the first semester of graduate work. Prerequisite to graduate seminars.

# 291. Seminar: A Major Author (3)

Prerequisite: An appropriate upper division or graduate level background course, and English 290.

The critical study of a major author, such as Shakespeare, Dickens, Mark Twain. May be repeated with new content. Maximum credit six units applicable on a master's degree.

292. Seminar: A Cultural Period (3)

Prerequisite: An appropriate upper division or graduate level background course, and English 290.

Advanced study, through its literature, of a cultural period such as the Renaissance, the Enlightenment, the Romantic revolution. May be repeated with new content. Maximum credit six units applicable on a master's degree.

293. Seminar: A Literary Problem (3)

Prerequisite: English 290.

Advanced study of a literary problem, such as Regionalism in America, or European influences on American literature. May be repeated with new content. Maximum credit six units applicable on a master's degree.

# 294. Seminar: A Literary Type (3)

Prerequisite: English 290.

Advanced study of a literary type, such as the Personal Essay, Epic, Tragedy. May be repeated with new content. Maximum credit six units applicable on a master's degree.

### 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# **Family Studies and Consumer Sciences** In the College of Professional Studies

# A member of the American Home Economics Association

### Faculty

Emeritus: Comin, Talboy

Professors: Cannon, Dorris, Fulcomer (Director), Somerville, Thomas, Warmer Associate Professors: Anderson, Gunning, Price

Assistant Professors: Boggs, Breeden, Dickerson, Hambleton, Kwallek, Martin, K.J., Martin, M., Milne, Perenich, Schupp, Wertz

Lecturers: Kripke, Ross

Offered by Family Studies and Consumer Sciences

Master of Science degree in home economics.

Major in home economics with the A.B. degree in applied arts and sciences.

Major in child development with the B.S. degree in applied arts and sciences. (Refer to the section of this catalog on Interdisciplinary Programs.)

Minor in home economics.

Teaching major in home economics for the single subject teaching credential.

# **Home Economics Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

The major in home economics is available in two areas of emphasis: (1) General Home Economics, and (2) Foods and Nutrition.

### **Emphasis in General Home Economics**

Preparation for the major. Family Studies and Consumer Sciences (Home Economics) 2, 3, 15, 40 and 45; Family Studies and Consumer Sciences (Family Studies and Child Development) 35 and 70; Anthropology 2; Art 2A; Biology 1; Chemistry 2A-2B; Economics 1A; Physics 5; and Sociology 1. (44 units.)

Major. A minimum of 24 upper division units to include Family Studies and Consumer Sciences (Foods and Nutrition) 100; Family Studies and Consumer Sciences (Home Economics) 115, 143, 151, 152; Family Studies and Consumer Sciences (Family Studies and Child Development) 135, 171; and three units selected from Family Studies and Consumer Sciences.
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# **Emphasis in Foods and Nutrition**

This program is planned for students interested in qualifying professionally in the field of dietetics, institutional food management or commercial home economics. A student who successfully completes this program and receives departmental recommendation is eligible to apply for a year of internship under auspices of the American Dietetic Association. Upon completion of an administrative food clinic, or dietetic internship, or a 12–24 months apprenticeship under a qualified dietitian in a recognized hospital, a student is eligible for membership in the American Dietetic Association and recognition as a qualified dietitian. Additional foods and nutrition careers include extension service, teaching, business, health agencies, and research.

Preparation for the major. Family Studies and Consumer Sciences (Home Economics) 2, 15, 40 and 45; Family Studies and Consumer Sciences (Foods and Nutrition) 3, 4; Family Studies and Consumer Sciences (Family Studies and Child Development) 70; Art 2A; three units of biology; Business Administration 1A; Chemistry 2A-2B, 3; Economics 1A; Physics 5; Sociology 1; and Microbiology 10. (50 units.)

Major. A minimum of 36 upper division units to include Family Studies and Consumer Sciences (Foods and Nutrition) 100, 102, 103, 104, 105, 106 and 180; Family Studies and

Consumer Sciences (General Home Economics) 151, 152, and 182; and six units selected with consent of the adviser from Business Administration.

### **Home Economics Minor**

The minor in home economics consists of a minimum of 18 units in family studies and consumer sciences, six units of which must be in upper division courses.

# **Home Economics Major**

#### For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable

specialization as outlined in the section of this catalog on the School of Education. The major may be used by students in Teacher Education as an undergraduate major for the A.B. degree.

The requirements for the home economics major for the single subject teaching credential are being revised. For further information consult the department.

#### Lower Division Courses

2. Orientation to Home Economics as a Profession (1) I

Introduction to the opportunities and requirements in various professional fields for home economists.

#### 99. Experimental Topics (2-4) I

Refer to the catalog statement on Experimental Topics on page 106. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

#### **Foods and Nutrition**

3. Food Selection and Preparation (3) I. II

One lecture and six hours of laboratory.

The production, selection, composition, preservation, nutritive value and preparation of foods.

#### 4. Fundamentals of Nutrition (3) I, II

Nutrition as applied to the stages of the normal life cycle.

14-S. Workshop for School Lunch Personnel (1) S

- Open to school lunch personnel only.
- The following areas are included:
- A. Nutrition for School Lunches.
- B. Beginning Meal Planning.

C. Food Purchasing. D. Sanitation and Safety.

E. Work Simplification and Personnel Management. F. Advanced Menu Planning.

G. Record Keeping and Cost Analysis.

No area may be repeated for credit, but credit may be earned in two areas concurrently. Maximum credit seven units. May not be used as part of a major or minor in home economics or homemaking education.

# **General Home Economics**

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.

19. Textiles (3) I, II

One lecture and six hours of laboratory.

Fibers, yarn, fabric construction, and finishes as related to selection, use, and care. 40. Family Income Management (3) I, II

Financial problems involved in the effective management of the family resources.

45. Fundamentals of Housing and Design (3) I, II One lecture and six hours of laboratory.

Prerequisite: Art 2A.

Historical and contemporary interiors. Architectural, constructural and artistic factors of housing as related to family needs.

#### Family Studies and Child Development

### 35. Marriage and Family (3) I, II

Love, maturity, dating, compatibility, conflict as they relate to preparation for successful marriage and family living. Not open to students with credit in Social Welfare 30, or Sociology

70. Principles in Child Development (3) I, II

Prerequisites: Psychology 1 and Sociology 1.

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 106, or Education 111.

# **Upper Division Courses**

#### **Foods and Nutrition**

100. Advanced Foods (3) I, II

One lecture and six hours of laboratory. Prerequisites: Family Studies and Consumer Sciences 3 and Chemistry 2B. Fundamentals and practices of scientific food preparation. Development of standards in

food preparation, meal planning, and service.

101. Family Food Management (3) I

One lecture and six hours of laboratory.

Not open to home economics majors and minors.

Planning, organizing, preparing and serving attractive well-balanced meals for different income levels, for various occasions.

102. Advanced Nutrition (3) I, II One lecture and six hours of laboratory.

Prerequisites: Family Studies and Consumer Sciences 4 and Chemistry 2B.

Fundamental principles of human nutrition; planning, calculating and evaluating dietaries to meet human requirements; animal feeding experiments.

103. Quantity Cookery (3) I

One lecture and six hours of laboratory.

Prerequisites: Family Studies and Consumer Sciences 100 and Business Administration 1A. Application of basic principles to quantity foods, including experiences in planning, purchasing, storage, preparation, serving and cost accounting for institutional food service. Laboratory experience is provided in the campus cafeteria and in hospitals.

104. Institutional Food Organization and Management (3) II

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 103.

Problems involved in the organization of food service units, problems of administration, cost of food service, specifications, operation and care of equipment for institutions, and routing of work. Special projects and field trips.

105. Experimental Foods (3) II

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 100.

Physical and chemical tests applied to problems in processing and preparation of food. Studies relate to protein foods; batters, doughs and sugar cookery; emulsions, fats and oils: and developments in food preservation.

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#### 106. Diet Therapy (3) I

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 102. Planning and preparation of special diets and food requirements in pathological conditions.

108. Advanced Institution and Restaurant Management (3) Irregular

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 104. Purchasing food and selecting and maintaining equipment based on the needs of various types of food service and institutional layout.

# 109. Meal Management and Service (3) I, II

One lecture and six hours of laboratory.

Prerequisites: Family Studies and Consumer Sciences 3 and 4. Planning, organizing, preparing, and serving meals with consideration of nutritional needs and the time, energy, and money resources available.

#### 180. Food Demonstration Techniques (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Nine units in Family Studies and Consumer Sciences.

Organizing materials and developing techniques for demonstrations; observation, evaluation and participation in professional demonstrations for photography, the classroom and mass media.

#### **General Home Economics**

115. Advanced Clothing (3) I, II

One lecture and six hours of laboratory. Prerequisite: Family Studies and Consumer Sciences 15.

Fitting and construction processes applied to wool, silk, and synthetics, emphasizing fundamental principles of handling.

116. Tailoring (3) I

One lecture and six hours of laboratory. Prerequisite: Family Studies and Consumer Sciences 115. Principles of tailoring; planning and construction of coats and suits.

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.

#### 118. Clothing Design: Flat Pattern (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 115.

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.

#### 119. Textile Analysis and Testing (3) II

One lecture and six hours of laboratory. Prerequisites: Family Studies and Consumer Sciences 15 and Chemistry 2B.

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.

120. Clothing and Human Behavior (3) II Prerequisite: Consent of instructor.

Socioeconomic influences on consumer clothing behavior patterns.

121. Clothing Design: Draping (3) I, II

One lecture and six hours of laboratory. Prerequisite: Family Studies and Consumer Sciences 15.

Experience in creative designing through fabric manipulation. Designer problems related

to mass-production techniques.

122. Clothing Design: Historical Influences (3) I

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 115.

Chronological analysis of men's and women's fashions providing inspiration for original creations in clothing design

140. Family Financial Problems and Practices (3) I

Prerequisite: Family Studies and Consumer Sciences 40. Financial problems and practices of families; decision making with respect to market goods and services; consumer protection programs.

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143. Household Equipment and Processes (3) I, II

- One lecture and six hours of laboratory.
- Prerequisites: Physics 5 and Chemistry 2B.

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.

# 145. Family Housing (3) II

One lecture and six hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 45.

Advanced housing problems at various stages of the family life cycle and the different socioeconomic levels.

### 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 151.

# 151. Home Management Theory and Analysis (3) I, II

Prerequisite: Family Studies and Consumer Sciences 40.

Management process and its relationship to the use of resources based upon the decisions. values, goals, and standards of the family. Adaptation of work simplification techniques for use in studies of activities in homes and home economics classes.

152. Home Management Laboratory (3) I, II

Five weeks' residence in a family-size unit. Prerequisites: Family Studies and Consumer Sciences 100, 151, and written request made to department chairman one year prior to enrollment.

Application of theories and principles of all disciplines of home economics.

153. Supervised Field Work in Home Management (3) I, II

One lecture and six hours of laboratory.

Prerequisites: Family Studies and Consumer Sciences 3, 135, 151, 171, and consent of instructor.

Management and social problems as they relate to the home and family. Supervised field work with various community agencies and selected families.

160. Merchandise Analysis (3) Irregular

Contemporary problems of production and distribution of textiles and clothing.

181. Materials and Techniques for Teaching Home Economics (2) II

Prerequisite: Credit or concurrent registration in Education 121C.

Development and use of audiovisual and other instructional materials.

#### 182. Educational Practices and Instructional Resources (3) I

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.

#### Family Studies and Child Development

135. Family Interaction (3) I, II

Prerequisite: Family Studies and Consumer Sciences 35.

Marriage adjustment and family interaction throughout the life cycle.

136. Family Study (3) I, II

Prerequisites: Family Studies and Consumer Sciences 35 and Sociology 1.

Dynamics of family living; attitudes, practices, social and psychological interaction, and family life patterns in different cultures, social classes and ethnic groups. (Formerly Home Economics 135.)

#### 170. Human Development: Infancy (3) I, II

Prerequisite: Family Studies and Consumer Sciences 70.

Physiological, psychological, social and cultural development and behavior of the human organism through age two.

171. Human Development: Early Childhood (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 70 or Psychology 106.

Physical, social, emotional, and intellectual development of the young child with applications for guidance. Observing, recording individual and group behavior of children. 175. The Nursery School Program (3) I, II

Two lectures and three hours of participation.

Prerequisites: Family Studies and Consumer Sciences 171; concurrent registration in Family Studies and Consumer Sciences 175L.

Methods, materials, program development, and evaluation of current trends in working with young children.

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# 175L. Laboratory Experiences in Nursery School (1) I, II

Three hours of laboratory.

Prerequisites: Family Studies and Consumer Sciences 171; concurrent registration in Family Studies and Consumer Sciences 175. Application to take course must be made during the preceding semester.

Directed experiences in working with children in child development laboratory and other preschool situations.

176. Creativity in the Young Child (3) II

Prerequisite: Family Studies and Consumer Sciences 175. An examination of creativity; philosophical approach to experiences which would be appropriate for use with young children.

177. Administration and Supervision in Nursery Schools (3) Irregular

Prerequisite: Family Studies and Consumer Sciences 176 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.

#### 178. Working with Parents (3) I, II

Prerequisite: Family Studies and Consumer Sciences 70 or Psychology 106 or Education 111.

An investigation of philosophy, issues, and current trends in parenting.

179. Advanced Child Study (3) I. II

Prerequisite: Nine units in child development courses.

Physical, social, and psychological factors which determine the direction of child behavior. Readings and interpretations of scientific literature which contribute to an understanding of theories of human development.

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

Refer to the honors program.

190. Advanced Studies in Family Studies and Consumer Sciences (2-6) 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.

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

#### **Graduate** Courses

#### **Foods and Nutrition**

200. Seminar: Foods and Nutrition (3)

Prerequisites: Family Studies and Consumer Sciences 100 and 102. An intensive study of research in technological advances in the fields of foods and nutrition, with emphasis on professional organizations and ethical procedures.

203. Advanced Readings in Food Technology (3) Prerequisite: Family Studies and Consumer Sciences 100. Reading and analysis of selected research in food technology.

204. Advanced Readings in Nutrition (3)

Prerequisite: Family Studies and Consumer Sciences 102. Reading and analysis of selected research in nutrition.

# 205. Assay for Nutrients in Foodstuffs and Tissues (3)

Two lectures and three hours of laboratory.

Prerequisites: Family Studies and Consumer Sciences 100 and 102.

Determination of energy values, organic nutrients, and minerals in foodstuffs and tissues by chemical, biological, and microbiological methods.

# 206. Physiological Bases of Diet Therapy (3)

Prerequisite: Family Studies and Consumer Sciences 106. Chemistry 115B or 116B is recommended.

The biochemical and/or physiological lesions in pathological states and the modifications of diet which should accompany medical treatment to prevent or alleviate patient symptoms.

#### 207. Child Nutrition (3)

Two lectures and three hours of laboratory.

Prerequisite: Family Studies and Consumer Sciences 102.

Nutrition, health, and biochemical growth in children. Conditions leading to malnutrition, the prevention and correction of same.

# **General Home Economics**

215. Seminar: Clothing (3) Prerequisite: Nine units in the area of clothing. Selected problems in the field of clothing.

281. Seminar: Home Economics Education (3)

Prerequisites: Eighteen units in Family Studies and Consumer Sciences and consent of instructor.

The study and evaluation of home economics research and philosophical principles which have implications for the secondary homemaking teacher.

# 282. Current Development in Home Economics Education (3)

Prerequisites: Education 121C or the equivalent, and 18 units in Family Studies and Consumer Sciences

Current issues and recent developments in home economics education with implications for secondary and post-high school programs.

### Family Studies and Child Development

231. Family Life Education (3)

Prerequisite: Three units in family relations.

Methods and materials in family life education for schools, colleges, churches, and social agencies.

234. Seminar: Marriage Adjustment (3)

Prerequisite: Family Studies and Consumer Sciences 135.

Individual study, seminar reports, and group discussion of selected topics in marriage adjustment.

# 240. Seminar in Family Economics (3)

Prerequisite: Upper division course in family finance.

Personal financial practices under changing conditions. Review of literature in family financial management.

270. Seminar: Child Development and Guidance (3)

Prerequisite: Consent of instructor.

Emphasis on personality theories and on research and clinical findings relevant to a systematic study of human development and the guidance of children.

271. Advanced Readings in Human Development (3)

Prerequisites: Family Studies and Consumer Sciences 70 and 179. Analysis of selected research in human development.

#### 290. Bibliography and Methods of Research (3)

Prerequisite: Twelve upper division or graduate units in Family Studies and Consumer Sciences.

Reference materials, bibliography, investigation of current research in home economics, processes of thesis topic selection, and techniques of scholarly writing.

# 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with the director and instructor. Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# French

In the College of Arts and Letters

#### Faculty

Emeritus: Brown Professors: Max, Messier, Nelson, Piffard

Associate Professor: Hanchett

Assistant Professors: Branan, Ghilbert, Palmer, Woodle

Offered by the Department of French and Italian Languages and Literatures

Master of Arts degree in French.

Major in French with the A.B. degree in liberal arts and sciences.

Minor in French.

Teaching major in foreign languages in the area of French for the single subject teaching credential.

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# **French Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Students majoring in French must complete a minor in another field to be approved by the departmental adviser in French.

Preparation for the major. French 1, 2, 3, 4, 10, and 11. (20 units.) Recommended: History 4A-4B.

Major. A minimum of 24 upper division units in French to include French 101A-101B, 102A-102B, and 12 units in the period literature of the language.

### French Minor

The minor in French consists of a minimum of 15 units in French, six units of which must be in upper division courses.

### French

#### For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education an an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the foreign languages major in the area of French for the single subject teaching credential are being revised. For further information consult the department.

#### **High School Equivalents**

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school French may be counted as the equivalent of French 1; three years the equivalent of French 2; and four years the equivalent of French 3. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

#### Lower Division Courses

Native speakers of French will not receive credit for taking lower division courses except with advance approval from the department.

All upper division courses in French are taught in French unless otherwise noted.

#### 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.

#### 2. Elementary (4) I. II

Four lectures and one hour of laboratory

Prerequisite: French 1 or two years of high school French.

Continuation of French 1. Not open to students who have completed four years of high school French.

#### 3. Intermediate (4) I. II

Prerequisite: French 2 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.

### 4. Intermediate (4) I, II

Prerequisite: French 3 or four years of high school French.

Continuation of French 3; outside reading with oral and written reports.

# 10. Conversation (2) I, II

Prerequisite: French 2 or three years of high school French.

Practice in the spoken language; practical vocabulary, conversation on assigned topics; simple dialogues and plays.

# 11. Conversation (2) I, II

Prerequisite: French 10 or French 3, or four years of high school French. Continuation of French 10.

# 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101A-101B. Advanced Grammar and Composition (3-3)

Prerequisites: French 4 and 11.

Advanced grammar and stylistics; intensive writing practice; reports based on outside reading.

- 102A-102B. Survey of French Literature (3-3)
- Prerequisites: French 4 and 11.

Important movements, authors, and works in French literature from the Middle Ages to the present.

105. Nineteenth Century French Theatre (3)

Prerequisites: French 4 and 11.

- Intensive study of nineteenth century plays.
- 107A-107B. Eighteenth Century French Literature (3-3)
  - Prerequisites: French 4 and 11.

The works of Montesquieu, Voltaire, Rousseau, the Encyclopédistes, as well as the theatre and novel of the period. Outside reading and reports.

- 110A-110B. Nineteenth Century French Novel (3-3) Prerequisites: French 4 and 11.
- Major novelists of the nineteenth century.
- 111A-111B. Seventeenth Century French Literature (3-3) Prerequisites: French 4 and 11.

Semester I: Major seventeenth century dramatists with emphasis on Corneille, Molière, and Racine. Semester II: Major works of seventeenth century poets and prose writers.

112A-112B. French Poetry (3-3)

- Prerequisites: French 4 and 11.
- The French poetic tradition and its development from the Middle Ages to the present. 114. Twentieth Century French Novel (3)

Prerequisites: French 4 and 11.

- Major novelists of twentieth century France. 115. Twentieth Century French Theatre (3)
- Prerequisites: French 4 and 11.
- Major dramatists of twentieth century France.
- 117. Renaissance and Baroque Literature (3)
- Prerequisites: French 4 and 11.
- Readings from the major writers of the Renaissance and Baroque periods.

#### 120. Explication de Textes (3) Prerequisites: French 4 and 11.

An introduction to the analytical approach to the detailed study of literature. Demonstrations by instructor and students.

#### 140. French Civilization (3)

Prerequisites: French 4 and 11.

French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in Humanities 42 or 142.

141. French Civilization (3) Prerequisites: French 4 and 11.

French culture from the Enlightenment to the present. Continuation of French 140. Not open to students with credit in Humanities 43 or 143.

#### 144A-144B. Masterpieces of French Literature (3-3)

French literary masterpieces from the Song of Roland to the present. Taught in English. (Formerly numbered Comparative Literature 140A-140B.)

#### 148. Introduction to French Philology (3)

Prerequisites: French 101A-101B.

The elements of French phonology, morphology, and semantics, illustrated with textual extracts.

#### 150. Advanced Phonetics and Diction (3) Irregular

Prerequisites: French 4 and 11.

For students and teachers of French wishing to perfect their pronunciation and diction. Correct formation of French sounds in isolation and combination. Class exercises, individual drill, and use of special discs and tape recording.

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

Refer to Honors Program.

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#### 184. Topics in French Literature (3)

Prerequisites: French 4 and 11.

Study of movement, genre, theme, myth or individual author. May be repeated with new content. Maximum credit six units applicable on a major in French. Conducted in French or English. See class schedule.

#### 199. Special Study (1-3) I, II

Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in French available in any given semester.

Prerequisite: Consent of staff.

#### **Graduate Courses**

#### 201. History of the French Language (3)

Prerequisite: Eighteen upper division units in French. The history of the French language from the beginnings through the sixteenth century. 202. Medieval French Literature (3)

Prerequisites: Eighteen upper division units in French and French 201.

Readings in the principal movements, trends and genres of medieval French literature from the beginnings through François Villon.

#### 203. Literature of the French Renaissance (3)

Prerequisites: Eighteen upper division units in French and French 201.

Literature and thought of the 16th century as represented in the works of Rabelais, Montaigne, Ronsard, Du Bellay, etc.

#### 230. Methods of Literary Criticism (3)

Prerequisite: Eighteen upper division units in French.

Theory and practice of various traditional and modern critical approaches to specific literary texts.

#### 250. Seminar in Seventeenth Century French Literature (3)

Prerequisite: Eighteen upper division units in French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

#### 260. Seminar in Eighteenth Century French Literature (3)

Prerequisite: Eighteen upper division units in French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

# 270. Seminar in Nineteenth Century French Literature (3)

Prerequisite: Eighteen upper division units in French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

# 280. Seminar in Twentieth Century French Literature (3)

Prerequisite: Eighteen units of upper division French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

# 284. Topics in French Literature (3)

Prerequisite: Eighteen upper division units in French.

Study of movement, genre, theme, myth or individual author. May be repeated with new content. Maximum credit six units applicable on a master's degree.

# 290. Research and Bibliography (3)

Prerequisite: Eighteen upper division units in French. Purposes and methods of research in the fields of the language and literature, the collection and collation of bibliographic material, and the proper presentation of the results of such investigation.

# 298. Special Study (1-3) Cr/NC

Prerequisites: Eighteen upper division units in French and consent of staff; to be arranged with department chairman and instructor.

Individual study. Maximum credit three units applicable on a master's degree. 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# **General College**

Students interested in enrolling in General College 99 or 199 should contact the faculty adviser of the on-campus association sponsoring the activity. These courses may not be used to satisfy course requirements for the major or minor. No combination of General College 99 and 199 in excess of six units may be counted for credit on a bachelor's degree program. 99. Selected Activities (1-3) Cr/NC

Supervised experience in college or community activities. Prerequisites: Twelve units of college credit and a minimum grade point average of 2.0. No combination of General College 99 and General College 199 in excess of six units may be counted for credit in a bachelor's degree program.

#### 199. Selected Activities (1-3) Cr/NC

Supervised experience in college and/or community activities. Prerequisite: A minimum grade point average of 2.0. No combination of General College 99 and General College 199 in excess of six units may be counted for credit in a bachelor's degree program.

# Geography

#### In the College of Arts and Letters

Faculty Emeritus: Molitor, Post, Richardson, Storm

Professors: Eidemiller, Finch, Greenwood, Keen, Kiewiet de Jonge, O'Brien, Taylor, Wright, Yahr

Associate Professors: Blick (Chairman), Heiges, Johnson, Pryde, Quastler, Stutz Assistant Professors: Colombo, Ford, Fredrich, Griffin, McArthur

#### 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.

Single subject teaching credential in social sciences in the area of 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 graduation requirements listed on page 60 of this catalog.

Students majoring in geography must complete a minor in another field to be approved by the major adviser.

Preparation for the major. Geography 1 and 2. (6 units.) Four to six units selected from Geography 3, 4, 5, 7 and 54 are strongly recommended.

Major. A minimum of 24 upper division units in geography to include three units from courses numbered 100-109; three units from courses numbered either 100-111, 150-159, or 170-179; three additional units from either of the above groups; three units from courses numbered 119-139; three units from 180, 182, 185, 187; three units from 181A or 183; three units from 198 taken from three different instructors; and three units of electives.

# **Geography Minor**

The minor in geography consists of a minimum of 15 units in geography, nine units of which must be in upper division courses.

# Geography

# For the Single Subject Teaching Credential in Social Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

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 single subject teaching credential in social sciences which includes the area of geography are being revised. For further information consult the department.

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#### Lower Division Courses

#### 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.

#### 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 2 and 112A or 112B.

#### 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 4.

#### 4. Introduction to Meteorology Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Geography 3.

Theory of meteorological instruments and observations. Practical exercise in surface and upper air observations, weather codes, and elementary weather map analysis.

#### 5. Physical Geography Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Geography 1.

Practical exercise and observation in map analysis, weather elements, climatic regions, and the earth's landform features. Designed to supplement Geography 1.

### 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.

#### 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.

### 54. Urban Geography (3) I, II

Prerequisite: Geography 1 or 2

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 154.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

100A. Physical Climatology (3) I

Prerequisite: Geography 3.

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.

# 100B. Regional Climatology (3) II

Prerequisite: Geography 3.

The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

# 101. Climatic Physiography (3)

Prerequisites: Geography 1; and Geology 4, or Geology 2 and 3, or Geology 2 and Geography 5.

The origin and morphology of landforms with emphasis on the external forces.

# 102. Structural Physiography (3)

Prerequisites: Geography 1; and Geology 4, or Geology 2 and 3, or Geology 2 and Geography 5.

Origin and morphology of landforms with emphasis on internal forces.

# 103. Fluvial and Eolian Physiography (3)

Prerequisites: Geography 1; and Geology 4, or Geology 2 and 3, or Geology 2 and Geography 5.

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, 104. Coastal and Submarine Physiography (3)

Prerequisites: Geography 1; and Geology 4, or Geology 2 and 3, or Geology 2 and Geography 5.

Marine physiographic processes and their effects on developing the landforms of coasts, continental shelves, and ocean floors.

105. Geography of Soils (3) II

Prerequisite: Geography 1

The nature, properties and distribution of soils and their relationships to the influence of climates, landforms, and human activity.

### 106. Geography of Soils Laboratory (1)

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Geography 105.

Theories of soil genesis, edaphology and structure related to empirical phenomena through laboratory experimentation and observation. Best suited to concurrent enrollment in Geography 105.

# 107. Geography of Natural Vegetation (3) I, II

Prerequisite: Geography 1.

The natural vegetation associations of the world, their distribution, classification and development, including relationship to human activities.

#### 110. Historical Geography (3) I, II

Prerequisite: Geography 1 or 2.

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.

#### 111. Principles of Geographical Analysis (3)

Prerequisites: Geography 1 and 2. Major concepts and techniques of the field of geography.

#### 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 2 and 112A or 112B.

119. Geography of San Diego County (3) Saturday field trips to be arranged.

Prerequisites: Geography 1 and 2.

Analysis of the physical and cultural geographic aspects of San Diego County. Completion of Geography 100, 101, and 105 will be helpful to students enrolling in this course. (Formerly numbered Geography 184.)

120. California (3) I, II

Prerequisite: Geography 1 or 2.

Systematic and regional analysis of the topography, climate, natural vegetation, and their relationships with the past and present activities of man and his use of the land; field trip. Offered in summer with a 10-day tour.

121. United States (3) I, II

Prerequisite: Geography 1 or 2.

The natural regions of the United States, their formation and economic and historical development.

122. Canada and Alaska (3) II

Prerequisite: Geography 1 or 2.

The physical and historical bases of Canadian and Alaskan regionalism; the economic and strategic importance of these two areas.

123. Middle America (3) I, II

Prerequisite: Geography 1 or 2.

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.

124. South America (3) I, II

### Prerequisite: Geography 1 or 2.

The physical regions and human geography of South America, including the history of colonization and the exploitation of resources.

125. North Africa and the Near East (3) I, II

Prerequisite: Geography 1 or 2.

The geographic bases for the political heritage, economies, and peoples of North Africa, including the Sahara and the Near East.

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126. Europe (3) I, II Prerequisite: Geography 1 or 2. Systematic analysis of the geographic bases of modern European life. Regional investigation of countries of Europe except the Soviet Union. 127. Soviet Union (3) I, II Prerequisite: Geography 1 or 2. Natural resources, agricultural production, industrial growth, and transportation. 129. Oceania (3) Prerequisite: Geography 1 or 2. The physical geography, peoples, economies, and trade of Oceania, Australia, and New Zealand 130. Central and Southern Africa (3) I Prerequisite: Geography 1 or 2. A regional geography of Africa south of the Sahara; the physical geographic base for the peoples and their economic activities. 131. Eastern Asia (3) I Prerequisite: Geography 1 or 2. The geographic bases for the political heritage, economies, and peoples of Eastern Asia. 133. Southeastern Asia (3) Prerequisite: Geography 1 or 2. The geographic bases for the political heritage, economies, and peoples of Southeastern Asia 134. Southern Asia (3) Prerequisite: Geography 1 or 2. The geographic bases for the political heritage, economies, and peoples of Southern Asia. 150. Political Geography (3) I, II Geography as it relates to the strength of nations and international relations. 151. Economic Geography: Primary Production (3) I Prerequisite: Geography 1 or 2. The geography of agricultural production and the extractive industries in relation to world commerce. 152. Industrial Geography (3) II Prerequisite: Geography 1 or 2. Principles of industrial location, with emphasis on the distribution of the world's major manufacturing regions. 153. Location Analysis and Geographic Theory (3) Prerequisite: Geography 111. Spatial arrangement and interrelationships of resources, production, exchange and consumption of goods and services, and a study of location theory in economic geography. 154. Geography of Cities (3) I, II Prerequisite: Geography 2 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 54. 155. Urban Location and Settlement Geography (3) Prerequisite: Geography 54 or 154. Analysis of urban and other agglomerated settlements in terms of their spatial arrangement, principal functions, economic base, and supporting areas. 156. Internal Spatial Structure of Cities (3) Prerequisite: Geography 54 or 154. 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." 157. Quantitative Methods of Urban Analysis (3) Prerequisite: Geography 155 or 156, and 185. 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.

# 158. Transportation Geography (3)

Prerequisite: Geography 1 or 2.

The spatial distribution of transportation networks and commodity movement and their relationship to the distribution of economic activity.

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159. Urban Transportation Geography (3)

Prerequisite: Geography 54, 154, or 158. Urban transportation networks and their effects, past, present and future, on the economy and physical structure of the urban region.

# 160. Advanced Transportation Geography (3)

Prerequisite: Geography 158 or 159. Topics in the spatial analysis of transportation, e.g., spatial interaction patterns, diffusion process, models in spatial analysis.

166. Honors Course (1-3) I. II

Refer to Honors Program.

170. Conservation of Environmental Quality (3) I, II

Prerequisite: Geography 1 or 2.

Ouality 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.

171. Conservation of Natural Resources (3) I, II

Prerequisite: Geography 1 or 2.

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.

173. Geography as Human Ecology (3)

Prerequisite: Geography 7 or 170. Human ecology related to resource geography.

174. Water Resources (3) II

Prerequisites: Geography 1 or 2; and 7, 170 or 171.

Occurrence and utilization of water resources and the problems of water resource development.

#### 175. Geography of Recreational Land Use (3)

Prerequisite: Geography 7, 170 or 171.

Importance of location and environment in the use, management, and quality of recreation areas.

# 176. Geography of Marine Resources (3)

Prerequisite: Geography 1 or 2.

Economic geography of use of marine biotic and mineral resources.

180. Field Geography (3)

Prerequisites: Senior or graduate standing and the completion of at least 12 units in geography, including Geography 1 and 2, and consent of instructor.

Directed fieldwork in physical and cultural geography.

181A. Maps and Graphic Methods (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Geography 1 or 2.

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.

181B. Advanced Cartography (3)

Two lectures and three hours of laboratory.

Prerequisite: Geography 181A.

Advanced laboratory instruction and practice in cartographic techniques.

181C. Automated Cartography (3) Two lectures and three hours of laboratory

Prerequisite: Geography 180, 181A, 182, 183, 185, or 187.

Computerized methods in presenting for comprehension spatially variable information of a quantitative nature; examination of existing automated mapping systems.

182. Use and Interpretation of Aerial Photographs (3) II

Two lectures and three hours of laboratory Prerequisites: Geography 1 and consent of instructor.

Stereoscopic interpretation and cartographic representation of landforms, vegetation, and land use. Emphasis on practical exercises.

# 183. Map Investigation (3) I

Two lectures and three hours of laboratory.

Prerequisite: Geography 1 or 2.

Use of the map as an analytical tool in geography. History of developments in cartography.

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184. Field Geography of the Arid Southwestern United States (3)

Prerequisites: Geography 1 and 2.

An orientation to the Southwestern United States; emphasis on field observation and interpretation of the cultural and physical landscape. A minimum of fifteen days will be spent in the field.

### 185. Quantitative Methods in Geographic Research (3) I, II

Prerequisites: Two geography courses including one in upper division; Mathematics 18 or a higher numbered course, and Mathematics 19.

Use of quantitative methods in geographic research.

#### 187. Remote Sensing of the Environment (3)

Two lectures and three hours of laboratory.

Prerequisites: Geography 2, 182, 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.

#### 188. Advanced Remote Sensing of the Environment (3)

Prerequisites: Geography 187 and consent of instructor. Current research in geographic remote sensing and related fields. Applications of remote sensing in the study of man's cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies.

#### 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.

#### 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.

#### 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.

### 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.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisites: At least 15 units of A or B work in geography and consent of instructor. Graduate Courses

# 200A. Seminar in Advanced Physical Climatology (3)

Prerequisites: Geography 100A and approval of departmental graduate advisory committee.

Characteristics of climatic elements for a selected area of climatic type, and a statistical analysis of the elements studied. Maximum credit six units applicable on a master's degree.

## 200B. Seminar in Advanced Regional Climatology (3)

Prerequisites: Geography 100B and approval of departmental graduate advisory committee.

Selected regions. An interpretation of regional variations of world climatic patterns. Maximum credit six units applicable on a master's degree.

# 205. Geographic Research and Techniques of Presentation (3)

Prerequisite: Approval of departmental graduate advisory committee.

Seminar in the use of research materials in the different aspects of geography and the effective presentation of research findings in written and oral form. (Formerly numbered Geography 295.)

### 210. History of Geography (3)

Prerequisite: Approval of graduate adviser. The evolution of concepts concerning the nature, scope, and methodology of geography.

220. Seminar in Regional Geography (3)

Prerequisite: Approval of departmental graduate advisory committee.

Intensive study of a major world region, such as South America, Southeast Asia, or Northern Europe. Maximum credit six units applicable on a master's degree.

#### 250. Seminar in Systematic Geography (3)

Prerequisite: Approval of departmental graduate advisory committee.

Intensive study of an aspect of systematic geography, such as climatology, economic geography, or graphic presentation. Maximum credit six units applicable on a master's degree.

251. Seminar in Physiography (3)

Prerequisites: One course in physiography and consent of instructor. Directed study and research on selected topics in physiography.

255. Seminar in Urban and Settlement Geography (3) Prerequisites: Geography 155 or 156 and approval of departmental graduate advisory committee.

Selected topics in urban geography. Field reconnaissance in the local urban "laboratory" is essential part of the research undertaken.

#### 256. Seminar in Location of Urban Activities (3)

Prerequisites: Geography 156 and approval of departmental graduate advisory committee. Systematic analysis of the locations and linkages of activities in urban areas.

#### 258. Seminar in Geography of Transportation (3)

Prerequisite: Geography 158.

Directed study and research on selected topics in transportation geography.

#### 259. Seminar in Urban Transportation (3)

Prerequisites: Geography 159 and approval of departmental graduate advisory committee. Intensive study and research on topics in urban transportation geography. Emphasis on transport innovations and their impact on urban spatial patterns.

# 260. Seminar in Spatial Structure of Transport Systems (3)

Prerequisites: Geography 158 and approval of departmental graduate advisory committee. Transportation systems and networks, optimum route patterns, and commodity flows.

# 270. Seminar in Theory of Resource Use (3)

Prerequisites: Geography 7 and three upper division units in geography, or 170, or 171, and approval of departmental graduate advisory committee.

Selected theories in resource use. Emphasis on conflicts between resource systems and conservation philosophy.

### 272. Seminar in Environmental Quality (3)

Prerequisites: Geography 7 and three upper division units in geography, or 170, and approval of departmental graduate advisory committee.

Geographic factors affecting environmental quality, such as congestion, crowding, and pollution.

### 275. Seminar in Recreational Geography (3)

Prerequisites: Geography 175 and approval of departmental graduate advisory committee. Geography 7 or 170 and 171 are recommended.

Design and management of recreational areas. Emphasis on man-land relationship in natural parks of San Diego County.

# 280. Techniques of Field Research (3)

Three lectures and three hours of laboratory.

Prerequisites: Geography 180 and approval of departmental graduate advisory committee. Detailed and reconnaissance field work including classification of natural and cultural features and preparation of geographical reports and maps based on field data. Maximum credit six units applicable on a master's degree.

### 281. Seminar in Cartography (3)

Prerequisites: One course in cartography and approval of departmental graduate advisory committee.

Use of the map in geographic analysis. Problems and recent trends in cartography. Maximum credit six units applicable on a master's degree.

# 288. Seminar in Remote Sensing of the Environment (3)

# Prerequisite: Geography 187.

The use of remote sensing techniques in the study of man's cultural and biophysical environment.

296. Geographic Internship (3) Prerequisites: Approval of departmental graduate advisory committee, and consent of

Students will be assigned to various government agencies and industry and will work instructor. under the joint supervision of agency heads and the course instructor. Maximum credit six units; three units applicable on a master's degree.

# 297. Research (1-3) Cr/NC

Research in one of the fields of geography. Maximum credit six units applicable on a master's degree.

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298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Geology In the College of Sciences

#### Faculty

**Emeritus:** Brooks

Professors: Berry, Gastil, Krummenacher, McEuen, Peterson (Chairman), Roberts, Thomas, Threet

Associate Professors: Frederiksen, Kern, Ptacek

Assistant Professors: Abbott, Bertine, Ganus, Walawender

#### 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.

# **Geology Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. The major consists of basic requirements in the lower and upper division for all students

plus the requirements in one of the following options: (a) General Geology, (b) Paleontology, (c) Geophysics, (d) Geochemistry, and (e) Engineering Geology.

#### **Basic Requirements for all Students**

Preparation for the major. Geology 2 and 3, or 4; 5, 21, 24; Chemistry 1A-1B; and Biology 1 and 2. (29 units.) Recommended: a foreign language and a course in mechanical drawing if not completed in high school.

Major. A minimum of 36 upper division units in approved courses to include Geology 100, 108A-108B, 198A-198B. (14 units.) Other courses may be substituted for 108B and 198A-198B in the Geophysics option and for 198A-198B in the Engineering Geology option with the approval of the department.

#### Options

In addition to the basic requirements, the student must complete the requirements in one of the following options:

#### (a) General Geology

Additional preparation for the major. Geology 30 (or Geology 130 may be taken in the major); Mathematics 19 and 50; Physics 2A-2B and 3A-3B, or Physics 4A-4B-4C; Recommended: Physics 4A-4B-4C; Mathematics 7, 51, 52; Chemistry 109A-109B or 110A-110B.

Major (continued). Geology 106, 107, 124, 125, 130 (if Geology 30 not taken under preparation for the major), and at least one of the following: Geology 102, 104, 105, 120, 121, 126, 140, 150, 151, or 160. Electives approved by the departmental adviser to complete 36 upper division units.

#### (b) Paleontology

Additional preparation for the major. Biology 15; Mathematics 50, or 21 and 22 (alternative of 21 and 22 should not be selected by students planning academic work beyond the B.S. degree); Physics 2A-2B and 3A-3B, or Physics 4A-4B-4C; Zoology 50. (20-25 units.)

Major (continued). Geology 106, 107, 116 or 173, 126, and three courses from the following: Biology 110, 113; Botany 172; Zoology 106, 112, 160.

#### (c) Geophysics

Additional preparation for the major. Mathematics 7, 50, 51, 52; Physics 4A-4B-4C, 73. (30 units.) Recommended: Engineering 30.

Major (continued). Geology 110, 112, 120, 121, 130; Mathematics 119; Physics 100B, 116; either Mathematics 170 and Physics 156, or Physics 100A and 114. Recommended: Engineering 128A.

#### (d) Geochemistry

Additional preparation for the major. Chemistry 5, and 11 or 12; Physics 4A-4B-4C; Mathematics 50, 51, 52. (33 units.) Recommended: Mathematics 7.

Major (continued). Geology 130; Chemistry 110A-110B; either Geology 106 and 126, or Geology 124 and 125; six units of electives approved by the departmental adviser. Recommended: Geology 131.

#### (e) Engineering Geology

Additional preparation for the major. Geology 30; Engineering 1 or 20, 30, 50A; Mathematics 50, 51, 52; Physics 4A-4B-4C or 4C and 4E. (35 units.)

Major (continued). Geology 110 or 112, 126, 150; Engineering 116, 122, 123A, 128A; either Engineering 123B or Geology 151.

Because of the preparation in mathematics, physics, and geology called for in this emphasis, the School of Engineering will not require of majors in this option the prerequisites specified for Engineering 116, 122, and 123A.

#### Marine Geology

An option in marine geology is not offered. Interested persons should study marine geophysics, marine geochemistry, paleontology, engineering geology, or general geology.

#### **Geology Minor**

The minor in geology consists of a minimum of 15 units in geology, six of which must be in upper division courses.

All minors should include Geology 2 and 3, or 4; and 5. (8 units.) Preparation for teaching or naturalist work should include at least two of the following: Geology 21, 24, 104; and at least two from Geology 100, 102, 106, 108A, 126, 140. Those interested in environmental studies should take at least two of the following: Geology 21, 24, 30, 104; and at least two from Geology 100, 105, 130, 140, 150. Those interested in oceanography should take at least two of the following: Geology 21, 24, 30, 104; and at least two from Geology 106, 116, 126,130.

### Lower Division Courses

#### 2. General Geology (3) I, II

Earth materials and processes, the development of landforms, and a brief consideration of the history of the earth. Open to all students except those with previous credit in geology.

# 3. General Geology Laboratory (1) I, II Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Geology 2.

Recognition of common earth features and materials with experience in both field and map relationships. Designed to accompany and augment Geology 2. Not open to students with previous laboratory credit in geology.

## 4. Physical Geology (4) I, II

Three lectures and three hours of laboratory with related field study during the semester. Prerequisite: High school chemistry or physics, or credit or concurrent registration in college chemistry or physics.

The composition, origin, and distribution of earth materials, and their modification through mechanical and chemical processes. Not open to students with credit for Geology 2. (Formerly numbered Geology 1A.)

5. Historical Geology (4) I, II Three lectures and three hours of laboratory. Arrangement for field study during the semester.

Prerequisite: Geology 2 and 3, or 4.

Theories of earth origin, and the evolutionary history of the earth as traced through rock and fossil records. Consideration of the Paleontologic Sequence. (Formerly numbered Geology 1B.)

21. Mineralogy (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Credit or concurrent registration in Geology 2 and 3, or 4; 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.

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#### 24. Petrology (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Geology 2 and 3, or 4; and credit or concurrent registration in Geology 21. The origin, occurrence, identification, and classification of rocks in hand specimen.

# 30. Introduction to Geophysics (3) II

Prerequisites: Geology 2 and 3, or 4; 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 Geology 110 or 112.

### 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 Geology 3.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

# 100. Structural Geology (3) I, II

Two lectures and three hours of laboratory per week with occasional field trips. Prerequisites: Geology 5 and trigonometry.

Structural features of the earth, both deformational and primary. Mechanical principles, causes of folding and faulting, graphic solutions and analyses.

102. Geology of North America (3) I

### Prerequisite: Geology 5.

A regional analysis of North American geology, its structural, stratigraphic, and tectonic patterns and hypotheses concerning their origin and evolution.

# 104. Geomorphology (3) I

Prerequisite: Geology 5. Development and classification of landforms with consideration of processes involved. (Formerly numbered Geology 14.)

105. Photogeology (3) II Two lectures and three hours of laboratory.

Prerequisites: Geology 100 and 104.

Geologic interpretation of aerial photographs, elementary stereoscopy and stereometry applied to structural and stratigraphic problems, and compilation of geologic maps from annotated aerial photographs.

106. Paleontology (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Geology 5 and Biology 1 and 2. Principles and methods, exemplified by a study of the morphology, classification, habit, and geologic significance of fossil invertebrates.

# Vertebrate Paleontology, see Zoology 160.

107. Stratigraphy (3) II

Two lectures and three hours of laboratory.

Prerequisites: Geology 5 and 24.

Stratigraphic principles and practices. Consideration of the North American stratigraphic record.

108A. Field Geology (4) I, II

One lecture and three hours of laboratory, and twelve Saturday field sessions in the local area

Prerequisites: Geology 100 and credit or concurrent registration in Geology 24. Techniques and methods of geologic observation, interpretation, and field mapping.

108B. Field Geology (4) I, II

Prerequisite: Geology 108A.

Geologic investigation of an assigned area with preparation of an individual report and a geologic map.

110. Petroleum Geophysics (3) I

Two lectures and three hours of laboratory. Occasional field trips.

Prerequisites: Geology 100, Mathematics 52, Physics 4A-4B-4C.

Airborne, surface, and bore-hole geophysical techniques as presently used in oil exploration.

#### 112. Mining Geophysics (3) II

Two lectures, and three hours of laboratory or occasional field trips. Prerequisites: Geology 100, Mathematics 52, Physics 4A-4B-4C. Airborne, surface, and bore-hole geophysical techniques used for delineation of ore bodies.

# 116. Micropaleontology (3) II

One lecture and six hours of laboratory.

Prerequisite: Geology 106. The morphology, classification and geologic significance of the various microfossils.

# 118-S. Summer Field Problems (4-6)

Prerequisites: Geology 108A and consent of instructor.

Field techniques in the investigation of selected geological problems. This course cannot be substituted for Geology 108B.

### 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. May be repeated. Maximum credit four units.

#### 120. Ore Deposits (3) I

Prerequisites: Credit or concurrent registration in Geology 24 and 100. Geologic relations, origin, distribution, and economics of metallic and nonmetallic mineral

#### deposits.

121. Petroleum Geology (3) II

Prerequisites: Credit or concurrent registration in Geology 24 and 100. Geologic occurrence of petroleum and the application of geologic principles in exploration

and production.

124. Optical Mineralogy (3) I Two lectures and three hours of laboratory.

Prerequisite: Geology 21. Theory and use of the polarizing microscope for determining optical properties of minerals

as an aid to their identification.

# 125. Petrography (4) II

Two lectures and six hours of laboratory.

Prerequisite: Geology 124.

A study of rocks with the polarizing microscope; identification of mineral constituents; interpretation of textures; classification of rocks; problems of genesis.

### 126. Sedimentology (3) I

Two lectures and three hours of laboratory.

Prerequisites: Geology 5 and 24.

Origin, description, and classification of sedimentary rocks and structures.

# 130. Geochemistry (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Geology 24; Chemistry 1B; Mathematics or 50. 22 or 50. The relationship of basic chemical principles to geologic phenomena and environments, including applications to geologic exploration problems.

# 131. Advanced Geochemistry (3) II

Two lectures and three hours of laboratory.

Prerequisite: Geology 130.

Application of physical-chemical methods and principles to the solution of geologic problems. Emphasis on genesis of ore deposits and pollution geochemistry.

# 140. Marine Geology (3) I

Two lectures and three hours of discussion, demonstration, and field work.

Prerequisites: Geology 5, and either Geology 24, 102, 104, or 106.

The morphology, composition, structure, history, and geologic processes of the earth beneath the sea.

150. Engineering Geology (3) I Two lectures and several weekend field trips.

Prerequisite: Geology 108A. Case histories selected to demonstrate the application of geology to the location, design, and maintenance of engineering projects.

# 151. Groundwater Geology (3) II

Two lectures and three hours of laboratory.

Prerequisite: Geology 24. Geologic factors controlling the occurrence, movement and development of groundwater.

### 160. X-Ray Diffraction (2) II

One lecture and three hours of laboratory.

Prerequisites: Chemistry 1A-1B; Mathematics 50; Physics 2A-2B and 3A-3B, or 4A-4B-4C; and credit or concurrent registration in either Chemistry 109A or 110A, Engineering 25, Geology 21, or Physics 102A.

Theory and application of x-ray diffraction to the study of materials.

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

173. Advanced Palynology (3) II

One lecture and six hours of laboratory. Prerequisite: Botany 172.

Investigating problems in anthropology, botany and geology using spores, pollen grains and microplankton. (Formerly numbered Geology 221.)

### 196. Advanced Topics in Geology (1-3) I, II

Prerequisite: Consent of instructor.

Selected topics in geology and related earth sciences. May be repeated with new content. Maximum credit six units.

### 198A. Senior Thesis (1) I, II

Prerequisite: Credit or concurrent registration in Geology 108A.

Selection and preliminary investigation of an individual research project which will lead to a written thesis in Geology 198B.

198B. Senior Thesis (2) I, II

Prerequisites: Geology 198A and credit or concurrent registration in Geology 108B. Individual research project and written thesis.

# 199. Special Study (1-3) I, II

Individual study in field, library, laboratory, or museum work. Maximum credit four units. Prerequisites: Acceptable grade average in at least 12 upper division units within the major and consent of staff.

#### **Graduate Courses**

200. Seminar (1-3)

Prerequisite: Consent of instructor.

An intensive study in advanced geology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

# 208. Graduate Field Geology (3)

One lecture and nine Saturday field sessions.

Prerequisite: Geology 108B.

Experience in one or more specialized aspects of field mapping.

209. Igneous Petrology (3) Two lectures and three hours of laboratory.

Prerequisite: Geology 125.

Investigation of problems in igneous petrology, using petrography, geochemistry, and experimental methods.

# 211. Metamorphic Petrology (3)

Two lectures and three hours of laboratory.

Prerequisite: Geology 125. Investigation of problems in metamorphic petrology using petrography, geochemistry, and experimental methods.

# 212. Petrology of Carbonates (3)

Two lectures and three hours of laboratory.

Prerequisites: Geology 124 and 126.

Thin-section and hand-specimen description and classification of carbonate rocks and

other chemical sediments. Additional emphasis on recent depositional processes, diagenesis, and geochemistry.

220. Biostratigraphy (3) Two lectures and three hours of laboratory.

Prerequisite: Geology 107.

Development of concepts and practices in stratigraphic and geochronologic synthesis critically reviewed in context of current knowledge of the fossil record.

# 225. Paleoecology (3)

Two lectures and three hours of laboratory

Prerequisites: Geology 106 and Biology 110.

Problems and methods in the study of relationships between fossil organisms and their environment: interpretation of paleoenvironment, paleoclimate, and biologic relationships German / 237

229. Seminar: Advanced Studies in Stratigraphy (3)

Two lectures and three hours of laboratory.

Prerequisite: Geology 107. Regional stratigraphic patterns in North America and their historical implications.

### 235. Petrology of Terrigenous Rocks (3)

Two lectures and three hours of laboratory.

Prerequisites: Geology 124 and 126.

Thin-section and hand-specimen description and classification of sandstones and mud-rocks. Additional emphasis on mineralogy, modern depositional processes, environmental interpretation, and paleogeographic reconstruction.

## 240. Geotectonics (3)

Prerequisite: Geology 100. A consideration of topics on continental genesis and evolution, orogeny, geosynclinal theory, and a survey of classic geologic provinces.

#### 245. Advanced Structural Geology (3)

Prerequisite: Geology 100.

Topics in advanced structural geology in the light of petrographic, geophysical, and experimental data, combined with classic field observations.

# 250. Seminar: Physical Properties of Earth Materials (3)

Prerequisite: Geology 110 or 112.

Theoretical principles and instrumental techniques used to remotely determine the physical properties of earth materials.

260. Isotope Geology (3) Two lectures and three hours of laboratory.

A survey of isotopic and geochronologic topics with individual projects in isotopic analysis.

# 270. Pleistocene Geology (3) Three lectures and field trips.

Topics in Pleistocene geology: glaciation, Pleistocene lakes and drainage, relation of geology to early man, including field investigations.

#### 280. Sedimentary Geochemistry (3)

Two lectures and three hours of laboratory.

Prerequisite: Geology 130.

Problems in low temperature geochemistry, including clay mineralogy and diagenesis. 285. Genesis of Ore Deposits (3)

Two lectures and three hours of laboratory.

Prerequisites: Geology 120, 125; and Geology 130 or four units of physical chemistry. Application of mineralogy, petrography, and chemistry to an understanding of the origin of ore deposits.

#### 297. Research (1-3) Cr/NC

Prerequisite: Consent of the department.

Supervised research in an area of geology. Maximum credit six units applicable on a master's degree.

# 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy Preparation of a thesis for the master's degree.

# German

# In the College of Arts and Letters

#### Faculty

Professors: Kozlik (Chairman), Lawson, Paulin, Schaber, Tanaka, Westervelt, Wolf, Emeritus: Walker Wulbern

Associate Professors: Boney, Dunkle

Assistant Professor: Cross

Lecturer: Wolter

Offered by the Department of Germanic and Slavic Languages and Literatures Master of Arts degree in German.

Major in German with the A.B. degree in liberal arts and sciences.

Teaching major in foreign languages in area of German for the single subject teaching Minor in German. credential.

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# **German Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Students majoring in German must complete a minor in another field to be approved by the departmental adviser in German.

Preparation for the major. German 1, 2, 3, 4, 10, and 11. (20 units.)

Major. A minimum of 24 upper division units in German to include German 101A-101B, 102A-102B, and 12 units in the period literature of the language excluding German 144 and 145.

# 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.

# German

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the foreign languages major in the area of German for the single subject teaching credential are being revised. For further information consult the department.

Proficiency Examination: Before taking a student teaching assignment in German, the candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of Germanic and Slavic Languages and Literatures. The candidate should consult the chairman of the Department.

#### **High School Equivalents**

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school German may be counted as the equivalent of German 1; three years the equivalent of German 2; and four years the equivalent of German 3. 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.

#### 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.

# 2. Elementary (4) I, II

Four lectures and one hour of laboratory.

Prerequisite: German 1 or two years of high school German.

Continuation of German 1. Not open to students who have completed four years of high school German.

3. Intermediate (4) I, II

Prerequisite: German 2 or three years of high school German.

A practical application of the fundamental principles of grammar. Reading in German of cultural material, short stories, novels or plays; oral practice.

4. Intermediate (4) I, II

Prerequisite: German 3 or four years of high school German. Continuation of German 3.

7A-7B. Intensive Reading Course in German (2-2)

Prerequisite: German 2 or three years of high school German.

Intensive reading of material from the humanities and social sciences selected for the purpose of developing reading skills in German. 8A-8B. Scientific Reading (2-2)

Prerequisite: German 2 or three years of high school German.

Readings taken from the fields of chemistry, physics, medicine, zoology, biology, etc.

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#### 10. Conversation (2) I, II

Prerequisite: German 2 or three years of high school German.

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays.

11. Conversation (2) I, II

Prerequisite: German 10 or German 3, or four years of high school German. Continuation of German 10.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101A-101B. Grammar and Composition (3-3)

Prerequisites: German 4 and 11. Grammar and stylistics; intensive writing practice; reports based on outside reading.

#### 102A-102B. Survey of German Literature (3-3)

Prerequisite: German 4. Important movements, authors, and works in German literature from the Middle Ages to the present.

103A-103B. German Literature of the Eighteenth Century (3-3)

Prerequisites: German 4 and 11.

The literature of the German Enlightenment, the "Storm and Stress," the Classical Age. Outside readings and reports.

105A-105B. German Literature of the Nineteenth Century (3-3)

Prerequisites: German 4 and 11.

The literature of German Romanticism, Young Germany, Realism, and Naturalism. Outside readings and reports.

107. German Literature from its Beginning to the Reformation (3) Prerequisites: German 4 and 11.

Poetry, drama, and prose of the Old High German, Middle High German, and early New High German periods, the early texts to be read in modern German adaptations.

110A-110B. Contemporary German Literature (3-3)

Prerequisites: German 4 and 11.

The main developments in German literature from Neo-Romanticism to the present. Outside readings and reports.

111. Contemporary German Drama (3)

Prerequisites: German 4 and 11.

German drama from Hauptmann to the present.

### 115. Goethe's Faust (3)

Prerequisites: German 4 and 11. Goethe's Faust, Parts 1 and 2: its philosophical content and its position in German and European literature; lectures, reading, reports.

125A-125B. Advanced Oral and Written Composition (2-2)

Prerequisite: German 101A-101B.

Advanced forms of oral and written German.

144. Golden Age of German Literature (3)

The Classic and Romantic movements in Germany, with emphasis on the late eighteenth century: Goethe, Schiller and their contemporaries. Taught in English. (Formerly numbered Comparative Literature 142.)

145. Modern German Literature (3)

Outstanding modern German writers, including Nietzsche, Rilke, Hesse, Kafka, Mann, Brecht, and others. Taught in English. (Formerly numbered Comparative Literature 143.)

148. Applied German Linguistics (3) Prerequisite: German 101A-101B.

Linguistic study of modern German; integration of modern linguistic theory with the language classroom.

150. German Phonology (3)

Prerequisites: German 4 and 11.

Sounds, intonation, and elocution of German.

152. Middle High German (3)

Prerequisite: Twelve upper division units in German. The grammatical structure of Middle High German with readings from the period.

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#### 240 / German

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

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.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in German available in any given semester.

#### **Graduate Courses**

201. History of the German Language (3)

Prerequisite: Twelve upper division units in German. The historical development of the German language, with source readings from the Gothic

Bible to Luther's translation of the Bible. 202. Middle High German Literature (3)

Prerequisite: German 152. Reading and analysis of Middle High German literature.

203. The German Novelle (3) Prerequisite: Twelve upper division units in German. The development of the Novelle as a literary form from Goethe to the present.

204. The German Novel in the Twentieth Century (3) Prerequisite: Twelve upper division units in German. Selected German novels of the twentieth century.

205. German Lyric Poetry from Holderlin to Rilke (3) Prerequisite: Twelve upper division units in German. The major German lyric poets from the beginnings of Romanticism to Rilke.

206. The German Drama of the Nineteenth Century (3) Prerequisite: Twelve upper division units in German. Representative works of German dramatic literature from Kleist to Hauptmann.

207. Renaissance and Baroque Literature (3) Prerequisite: Twelve upper division units in German. German literature of the sixteenth and seventeenth centuries.

208. Goethe (3) Prerequisite: Twelve upper division units in German.

Goethe's lyric, epic, and dramatic poetry excluding Faust. 210. Schiller (3)

Prerequisite: Twelve upper division units in German.

Schiller as poet, dramatist, critic and philosopher, with emphasis on his classical period. 251. Seminar in Eighteenth Century Literature (3)

Prerequisite: Eighteen upper division units in German.

Directed research in the works of an important author or in a problem, type, or movement of German literature of the eighteenth century. Maximum credit six units applicable on a master's degree.

255. Seminar in Nineteenth Century Literature (3)

Prerequisite: Eighteen upper division units in German.

Directed research in the works of an important author or in a problem, type, or movement of German literature of the nineteenth century. Maximum credit six units applicable on a master's degree.

260. Seminar in Twentieth Century Literature (3)

Prerequisite: Eighteen upper division units in German.

Directed research in the works of an important author or in a problem, type, or movement of German literature of the twentieth century. Maximum credit six units applicable on a master's degree.

265. Seminar in Germanic Linguistics (3)

Prerequisite: Eighteen upper division or graduate units in German.

Directed research in a specialized area of Germanic linguistics or philology. Maximum credit six units applicable on a master's degree.

290. Research and Criticism (3)

Prerequisite: Twelve upper division units in German.

Purposes and methods of research in the language and in the literature; theories and practice of literary criticism. Recommended for the first semester of graduate study.

297. Research (3) Cr/NC

Prerequisite: Advancement to candidacy.

Individual research in a specialized subject in German literature or linguistics. 298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisites: Eighteen upper division units in German and consent of staff; to be arranged with department chairman and instructor.

#### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Greek In the College of Arts and Letters

Faculty Professors: Schaber, Warren Associate Professor: Genovese Assistant Professor: Eisner

Offered by the Department of Classical and Oriental Languages and Literatures

Courses in Greek.

Major and minor work in Greek is offered under classics. (Refer to this section of the catalog under Classics.)

# Lower Division Courses

#### (See also courses in classics.)

#### 1. Elementary (5) I

Introduction to ancient Greek, emphasizing grammatical foundations of New Testament and Attic prose. Aimed toward rapid comprehension.

2. Elementary (5) II

Prerequisite: Greek 1. Continuation of Greek grammar with selections illustrating syntax and style.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

# 103. Readings in Greek Prose (3) I

Prerequisite: Greek 2. Readings selected from Greek masterpieces in history, philosophy, oratory, and New Testament. Authors may include Xenophon, Plutarch, Plato, Lysias, the Evangelists. Emphasis on rapid reading.

# 104. Readings in Greek Poetry (3) II

Prerequisite: Greek 103.

Readings selected from Greek masterpieces in epic, elegy, tragedy. Authors include Homer, Sophocles, Euripides.

106. New Testament Greek (3)

Prerequisite: Greek 2.

Study of Koine and Byzantine Greek characteristics with selected readings from New Testament and ecclesiastical sources.

155. Advanced Reading in Greek (3-4)

Prerequisite: Greek 104.

Extended, intensive reading in a major author of more difficult or peculiar style or content, such as Aeschylus, Thucydides, Herodotus, Aristotle, Sappho, Aristophanes, Lucian. Emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

### Health Science and Safety / 243

# **Health Science and Safety** In the College of Professional Studies

#### Faculty

**Emeritus: Kitzinger** Professors: Burgess (Chairman), Grawunder, Harper, McTaggart Associate Professors: Barnes, Bender, Boskin, Fellers, Noto, Sorochan Assistant Professors: Beasley, Kessler, Lake

#### Offered by the Department

Master of Arts degree in health science.

Major in health science with the B.S. degree in applied arts and sciences. Minor in health science.

# **Health Science Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

**Emphasis in Community Health** 

Preparation for the major. Health Science and Safety 21, 29, 65; Family Studies and Consumer Sciences 4; Zoology 8; Psychology 1; and Sociology 1. (19 units.)

Major. A minimum of 36 upper division units to include Health Science and Safety 100, 101, 145, 146, 160, 165, 169, 175, 176, 177, 197; and Biology 140.

#### **Emphasis in Industrial Safety Education**

Preparation for the major. Health Science and Safety 21, 29, 65; Family Studies and Consumer Sciences 4; Zoology 8; Psychology 1; and Sociology 1. (19 units.)

Major. A minimum of 36 upper division units to include Health Science and Safety 100, 131, 132, 140, 145, 146, 180, 181; Sociology 120; and nine units selected from health science and safety or closely related fields with approval of the departmental adviser.

#### **Emphasis in Traffic Safety**

Preparation for the major. Health Science and Safety 21, 29, 65; Family Studies and Consumer Sciences 4; Psychology 1; Sociology 1; and Zoology 8. (19 units.)

Major. A minimum of 36 upper division units to include Biology 140; Health Science and Safety 100, 140, 145, 146, 147, 148, 149, 177; Psychology 124; the remaining units to be selected from health science or closely related fields with approval of the departmental adviser.

# **Health Science Minor**

The minor in health science consists of a minimum of 15 units in health science and safety, nine units of which must be in upper division courses approved by the departmental adviser in health science and safety; courses to include Health Science and Safety 100, and 65 or 160.

#### Lower Division Courses

21. Principles of Healthful Living (2) I, II, S

An application of modern knowledge to the development of understandings, attitudes, and practices essential to healthful living. Fulfills statutory requirement in public safety.

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.

46. Standard First Aid and Personal Safety (2) I, II

First-aid care in time of accident and sudden illness. Case studies, first-aid skills, and personal safety practices. Standard first-aid concepts and certification.

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. 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

100. Introduction to Health Science and Safety (3) I, II

History and principles of health science and safety and its role in modern society. An orientation course for students with a professional interest in health science and safety.

101. The Change Process and Health Science and Safety (3) I

Prerequisite: Health Science and Safety 21.

Attitude formation, behavior change, decision making, perception, motivation, group behavior, etc., and their relationship to the practice of health science and safety. 122. Concepts of Health Science (3) I, II

Development and application of concepts in individual, family, and community health. Involvement in health project work. Not open to students with credit in Health Science and Safety 21.

#### 131. Motor Fleet Safety (3) I

A basic introduction to problems and practices of motor fleet (truck) safety with emphasis on regulations.

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.

140. Traffic Safety (3) I, II

Problems of traffic safety and programs designed to deal with them.

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.

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.

# 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 46.

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.

# 148. Advanced Driver Education and Driver Training (3) I, II, S

Two lectures and three hours of laboratory.

Prerequisites: Health Science and Safety 145 and 147.

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.

149. Multimedia Techniques in Driver Instruction (3) I, II

# Prerequisite: Health Science and Safety 147.

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.

# 150. Child Health (2) I, II, S

Health status of children with emphasis on identification, prevention and correction of health problems.

# 151. Adolescent Health (2) I, II, S

Health status of adolescents with emphasis on identification, prevention and correction of health problems.

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.

# 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.

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#### 155. Sex Education (3) I, II, S

Prerequisite: Health Science and Safety 21 or 122.

Philosophy, current procedures, and materials needed for development of healthy attitudes and scientific knowledge appropriate for the understanding of human sexuality.

160. Introduction to Public Health (3) I, II

Prerequisite: Health Science and Safety 65.

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.

#### 165. Communicable and Noncommunicable Diseases (3) I. II

Causes, prevention and control of communicable, degenerative and chronic health disorders.

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

Refer to Honors Program.

169. World Health (3) I, II

Prerequisite: Health Science and Safety 65.

Health status of selected populations; international approaches to the attainment of world health. Special emphasis on the work of the World Health Organization.

171-S. Institute on Current Health Issues (1) S

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.

# 172. Habit-Forming Substances (3) I, II, S

Prerequisite: Health Science and Safety 21 or 122.

Tobacco, alcohol, and other drugs; their use, misuse and abuse.

#### 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.

### 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 126.

# 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.

# 180. Industrial Hygiene (3) II

Occupational environment and its effect on the safety, health and performance of employees.

# 181. Safety Administration (3) I

Designed to acquaint the student with the basic administrative elements of a modern safety program.

196. Measurement and Evaluation in Health Science and Safety (3)

General and specific approaches to measurement in health science and safety: data gathering techniques; organization; presentation and interpretation of data; basic principles of evaluation of student achievement. (Formerly numbered and entitled Health Science and Safety 202, Measurement and Evaluation in Health Education.)

# 197. Supervised Field Experience (1-3) I, II

Prerequisite: Consent of the department chairman.

Supervised practical experience in local health agencies and/or schools.

Maximum credit six units. Maximum credit three units applicable on a master's degree. 199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of special study adviser.

#### **Graduate** Courses

#### 200. Seminar (3)

Prerequisite: Fifteen units in Health Science and Safety.

An intensive study of advanced problems in health education. Maximum credit six units applicable on a master's degree.

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201. Interdisciplinary Factors in Health Education (3)

Prerequisite: Fifteen units in Health Science and Safety

Synthesis of basic scientific and cultural principles which contribute to an understanding of human well-being and how it is deliberately influenced.

#### 203. Evaluation Instruments (3)

Prerequisite: Health Science and Safety 196.

Construction, selection and analysis of evaluation instruments in health science and safety.

204. Program Planning and Evaluation in Community Health Education (3)

Prerequisite: Health Science and Safety 160.

Program planning and evaluation theories, systems and techniques in community health education.

#### 240. Administration of Traffic Safety (3)

Prerequisites: Health Science and Safety 145 and 147.

Research and trends in traffic safety with emphasis on the problems of administration.

#### 245. School Safety Programs and Procedures (3)

Prerequisite: Health Science and Safety 145.

Advanced consideration of school safety programs including legal bases and requirements, personnel responsibilities, liability, instruction, maintenance, and school transportation.

# 252. Health Science Curriculum Development (3)

Prerequisite: Health Science and Safety 150 or 151. Structuring educational experiences in the health sciences; developing curriculum materials, performance standards and ways of incorporating health education in open learning environments.

270. Problems in Disease Control (3) Prerequisite: Health Science and Safety 165.

New concepts in the community management of disease. Individual investigation and discussion.

#### 271. Drug Abuse Education (3)

Prerequisite: Health Science and Safety 172.

Drug abuse education in the school and community.

### 291. Health Science and Safety Research (3)

Prerequisites: Health Science and Safety 196 and advancement to candidacy. Methods and techniques of research appropriate to health science, the process by which potential problems in health science are analyzed, and the standards for the writing of research papers and theses.

# 292. Analysis of Professional Literature (3) II

Prerequisite: Health Science and Safety 196.

Investigation and study of literature in the fields which have an important bearing on health science and safety programs in the school and community. (Formerly numbered Health Science and Safety 192.)

# 297. Research (3) Cr/NC

Prerequisites: Health Science and Safety 291, 292, and advancement to candidacy. Supervised research in an area of health science and safety. Limited to students following Plan B for the Master of Arts degree in Health Science.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department special study adviser and instructor.

Individual study. Maximum credit six units.

# 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# In the College of Arts and Letters

Faculty

Assistant Professor: Gefter

Offered by the Department of Classical and Oriental Languages and Literatures Courses in Hebrew

Major or minor work in Hebrew is not offered.

#### Lower Division Courses

#### 1. Elementary (4) I

Four lectures and one hour of laboratory.

Beginning reading, writing, and conversational skills. Essentials of grammar. Not open to students who have completed three years of high school Hebrew.

#### 2. Elementary (4) II

Four lectures and one hour of laboratory. Prerequisite: Hebrew 1.

Continuation of Hebrew 1. Not open to students who have completed four years of high school Hebrew.

#### 3. Intermediate (4) I

Four lectures and one hour of laboratory. Prerequisite: Hebrew 2.

Continuation of Hebrew 2. Applications of grammar and reading skills. Additional practice in conversation.

#### 4. Intermediate (4) II

Four lectures and one hour of laboratory. Prerequisite: Hebrew 3.

Continuation of Hebrew 3. Completion of conversational and grammar sequences. Composition and reading for comprehension.

# 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

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.

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

# History

#### In the College of Arts and Letters

#### Faculty

Professors: Appleby, J., Berge (Chairman), Coox, Hanchett, Merrill, Munter, Nasatir, Norman, Pincetl, Rader, Ridout, Ruetten, Schatz, Smith, R., Strong, Weber

Associate Professors: Cheek, Chu, Cox, Cunniff, Davies, Detweiler, DuFault, Dunn, Flemion, J., Hoidal, O'Brien, Smith, C., Starr, Steele, Stites, Sutherland, Vanderwood Assistant Professors: Appleby, A., Bartholomew, Filner, Flemion, P., Heyman, McDean, Phillips, Vartanian

# Offered by the Department

Master of Arts degree in history; and a Master of Arts degree for teaching service with a concentration in history.

Major in history with the A.B. degree in liberal arts and sciences. Minor in history.

Teaching major in history for the single subject teaching credential.

# **History Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. History 4A-4B, or 8A-8B, or 9A-9B, or 17A-17B. (6 units.)

Major. A minimum of 24 upper division units in history to include History 198 (to be taken in the junior year unless a temporary waiver is granted by the department chairman) and a minimum of six units in each of three of the following fields: (a) Ancient and Medieval; (b) Modern Europe; (c) United States; (d) Latin America; (e) South, Southeast, and East Asia; (f) Africa and the Middle East; (g) Topical Subjects. It is the student's obligation, in consultation with the department chairman, to determine which courses fulfill his field requirements.

# **History Minor**

The minor in history consists of a minimum of 15 units in history to include six sequence units in the lower division. Nine units must be in upper division courses, including a year course.

# **History Major**

### For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization outlined in the section of this catalog on the School of Education. This major may be used by students in Teacher Education as an undergraduate major for

the A.B. degree in liberal arts and sciences.

The requirements for the History major for the single subject teaching credential are being revised. For further information consult the department.

#### Lower Division Courses

4A-4B. Western Civilization (3-3)

European institutions, culture, and thought from ancient times to the present. Primarily for lower division students.

#### 8A-8B. The Americas (3-3)

The history of the western hemisphere from its discovery to the present time. This year course meets the graduation requirements in American history, institutions and ideals; 8A also meets the requirements in U.S. Constitution; 8B meets the requirement in California State and local government.

### 9A-9B. Asian Civilizations (3-3)

Asian institutions, cultures, and thought from ancient times to the present. Semester I: Traditional Asian civilization. Semester II: Asia since the impact of the West.

# 17A-17B. American Civilization (3-3)

Prerequisite: History 17A is prerequisite to History 17B. The political and social development of the United States, with emphasis on the rise of American Civilization and ideals. This course is primarily for lower division students. Ordinarily not open to students with credit for Political Science 2, 71A, or 71B. History 17A-17B may be taken by such students with the consent of the chairman of the History Department.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

# 101A-101B. The Contemporary World in Historical Perspective (3-3)

Prerequisite: History 4B.

Trends and developments in the recent past which can contribute to an understanding of the problems of our age.

# 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.

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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 4A-4B. The course satisfies the requirement in Western Civilization but cannot be used to satisfy requirement for the major. 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 18th century. Semester II: French Revolution and Napoleonic Wars to the present.

106A-106B. The Quest for Peace (3-3)

Prerequisite: Six units in history.

An historical analysis of man's efforts to achieve peace from the Greeks to the present. 107A-107B. Science in Western Civilization (3-3)

The development of scientific thought and accomplishment as they relate to other aspects of Western culture. Semester I: Preclassical antiquity through the time of Sir Isaac Newton. Semester II: From 1700 to the present.

#### 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.

#### 111A-111B. Ancient History (3-3)

Semester I: Greece to the Roman Conquest. Semester II: Rome to the 5th century A.D.

121A-121B. Europe in the Middle Ages (3-3)

Prerequisite: History 121A is prerequisite to 121B.

European social, cultural, and political developments from the fall of Rome to the Renaissance.

#### 122. The Holy Roman Empire to the Great Interregnum (3)

Prerequisite: History 4A or 121A-121B.

The multinational Holy Roman Empire and its intellectual and social ramifications. Church-state relationships and the development of constitutionalism.

#### 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. (Formerly numbered and entitled History 156, The Byzantine Empire and Its Successors.)

#### 131. The Renaissance (3)

The intellectual, artistic, and social transformation of Europe from the 14th through the early 16th century. (Formerly numbered History 131A.)

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.

### 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.

135A-135B. Europe in the 19th Century (3-3)

Prerequisite: History 135A is prerequisite to 135B. Social, political, and economic developments of 19th century Europe.

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.

137A-137B. Europe in the 20th Century (3-3)

Prerequisite: History 137A is prerequisite to 137B.

Political and social developments from 1870 to the present. (Formerly numbered History 144A-144B.)

138A-138B. Diplomatic History of Modern Europe (3-3) Prerequisite: History 4A-4B.

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. (Formerly numbered History 145A-145B.)

141A-141B. History of Scandinavia (3-3)

The major political, economic, and social developments from the Stone Age to the present. Semester I: Stone Age to 1814. Semester II: 1814 to present.

142A. The French Revolution and Napoleonic Era (3) I

Prerequisite: History 4A-4B.

France on the eve of the Revolution; the Great Revolution, 1789-1799, the Napoleonic Era. 142B. Modern France (3) II

Prerequisite: History 4A-4B.

The development of France since 1815.

143A-143B. The Iberian Peninsula (3-3)

A cultural and political survey of Portugal and Spain as well as their empires. Semester I: From medieval times to the early modern period. Semester II: From early modern times to the present. (Formerly numbered and entitled History 149A, Modern Spain.)

145A-145B. Central and Eastern Europe (3-3)

Prerequisite: History 4A-4B.

Semester I: Political, social, and intellectual study of the various nationalities inhabiting the area from the Baltic to the Aegean Sea. Semester II: Developments since the late 18th century

146A-146B. Germany and Central Europe (3-3)

Prerequisite: History 4A-4B. The political, social, and cultural record of the Germanic peoples of Northern and Central Europe from Tacitus to the present.

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 present. Semester II: Emphasis on the 20th century.

149. Modern Italy (3)

The development of Italy from 1815 to the present. (Formerly numbered History 149B.) 151A-151B. England (3-3)

Prerequisite: History 151A is prerequisite to 151B.

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.

152A-152B. Constitutional History of England (3-3) Evolution of the common law and the development of parliamentary institutions.

153A-153B. Tudor and Stuart England (3-3) Semester I: The Age of the Tudors. Semester II: England during the Stuart Dynasty, 1603-1714.

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: The French Revolution, the rise of parliamentary democracy, the Victorian age and the political thought from the Utilitarians to the Fabians. 156A-156B. History of the Near East from the 7th Century to World War I (3-3)

Prerequisite: History 4A-4B.

Semester I: Medieval Islam from the 7th century A.D. to the rise of the Ottoman Turks. Semester II: The Ottoman Empire to 1914. (Formerly numbered and entitled History 157A-157B, History of the Near East from the 7th Century to Modern Times.)

157. The Near East in the Twentieth Century, 1914 to Present (3)

Prerequisite: History 4A-4B.

An analysis of sociopolitical and intellectual developments in the Near East during and after World War I.

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.

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 8A-8B.

161A-161B. Mexico (3-3)

Prerequisite: History 8A-8B or 160A-160B. Colonial and modern Mexico. Semester II: Emphasis on the 20th century.

162A-162B. History of Brazil (3-3)

Prerequisite: History 8A-8B or 160A-160B. The fusion of the Portuguese heritage with Indo-American and Negro elements to form the unique culture of the major nation in the tropics. Semester I: Colony and Empire to 1889.

Semester II: Republic, 1889 to present.

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163A-163B. The Caribbean Area (3-3)

Prerequisite: History 8A-8B or 160A-160B. Development of the Caribbean area with emphasis on the 20th century.

164. The Pacific Coast Nations of South America (3)

Prerequisite: History 8A-8B or 160A-160B.

The fusion of the native cultures and institutions with those of Spain to form the modern nations of the Pacific Coast of South America.

165A-165B. Economic, Social, and Intellectual Development of Latin America (3-3) Prerequisite: History 8A-8B or 160A-160B.

Designed for students in the Latin American Studies program, foreign trade, and foreign service.

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

167A-167B. Diplomatic History of Latin America (3-3)

Prerequisites: History 8A-8B or six upper division units in history.

Origins of Inter-Americanism: relations among the Latin American nations: the origins and development of the American States; Latin America in World Affairs.

#### 171A-171B. Rise of the American Nation (3-3)

Prerequisite: History 171A is prerequisite to 171B.

The settlement and development of the British colonies in North America and the American Revolution. Stresses the creation of the American nation through modification of Old World institutions in the new environment.

#### 172A-172B. Development of the Federal Union (3-3)

Prerequisite: History 172A is prerequisite to 172B.

Political, cultural, social and intellectual aspects of the Confederation and early national period; the Convention of 1787 and establishment of the Constitution; the administrations of Washington through John Quincy Adams. This year course meets the graduation requirements in American history, institutions and ideals; 172A meets the requirement in U.S. Constitution; and 172B includes materials which meet the requirements in California state and local government.

# 173A-173B. The U.S. from Jackson to Grant, 1828-1877 (3-3)

Semester I: The political and economic history of Jacksonian America; the problems posed by slavery and expansion in the context of social, intellectual and religious ferment. Semester II: The Civil War and Reconstruction, including the sectional controversy, the war, its aftermath, the role of Abraham Lincoln.

# 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.

175A-175B. The United States, 1901-1945 (3-3)

The age of reform and the United States as leader of the free world.

175C. The United States in the Nuclear Age (3)

The United States since World War II.

176A-176B. American Foreign Policy (3-3)

Semester I: The development of American foreign policy since 1776. Semester II: Developments since 1916. This year course meets the graduation requirements in American history, institutions and ideals.

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

# 178A-178B. The 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.

# 179A-179B. Intellectual History of the American People (3-3)

The ebb and flow of ideas in the United States since the founding of the English colonies, with attention devoted to social and political thought. This year course meets the graduation requirement in American history, institutions and ideals.

# 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.

# 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.

# 182A-182B. The Spanish Borderlands and the American Southwest (3-3)

Semester I: Development and colonization of the Spanish Southwest; the growth and influence of Spanish institutions. Semester II: United States' acquisition of the Southwest; the development and problems of expansion, water, industry, transportation, immigration, culture and agriculture in the region of semi-aridity.

# 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. (Formerly numbered and entitled History 183, The Negro in American Civilization.)

# 184A-184B. United States History (3-3)

United States history, 1492 to present. Semester I: To 1877. Semester II: 1877 to present. Open only to upper division students who do not have credit in History 17A-17B. Cannot be used to satisfy requirements for the major.

185. Conservation 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.

#### 189A-189B. California (3-3)

Political institutions; social, cultural, economic and intellectual development; international background. Semester I: To 1850; Spanish and Mexican heritage. Semester I: 1850 to the present. History 189B will fulfill the requirement in California state and local government. 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.

#### 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.

#### 192. Chinese Civilization (3) I

Chinese internal history and institutions during the period of relative isolation; religions, philosophy, literature and the arts.

#### 193. China in Modern Times (3) II

The impact of the West on China's history and civilization, particularly in the nineteenth and twentieth centuries with emphasis on internal developments.

#### 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.

### 195. Rise of Japan as a Modern State (3) II

The impact of the West on Japan's history and civilization, particularly in the nineteenth and twentieth centuries with emphasis on internal developments.

196A-196B. The Indian Subcontinent (3-3) Semester I: The historical and cultural development of the subcontinent from earliest times through Muslim rule. Semester II: British rule and its legacy in the subcontinent. The international relations of India and Pakistan.

### 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.

#### 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.

#### 199. Special Study (1-3) I, II

Individual study. Maximum credit six units. Prerequisite: Consent of department chairman and instructor.

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#### **Graduate Courses**

All graduate courses in the Department of History have a prerequisite of 12 units of upper division courses in history, or consent of the instructor.

201. Seminar in Historical Method (3)

General historical bibliography. The use of libraries and archives. Methods of critical historical investigation. The interpretations of history.

240. Directed Reading in Selected Topics (3)

#### Prerequisite: Permission of the instructor.

Selected readings in source materials and historical literature of various fields of history such as war, science, technology, urbanization, minority groups, immigration, capitalism, conservation, and imperialism. Maximum credit six units applicable on a master's degree.

# 241. Directed Reading in United States History (3) Prerequisite: Six upper division units in United States history.

Selected readings in source materials and historical literature in a designated area of United States history. Maximum credit six units applicable on a master's degree.

#### 242. Directed Reading in European History (3)

Prerequisite: Six upper division units in European history.

Selected readings in source materials and historical literature in a designated area of European history. Maximum credit six units applicable on a master's degree.

#### 243. Directed Reading in Asian History (3)

Prerequisite: Six upper division units in Asian history.

Selected readings in source materials and historical literature in a designated area of Asian history. Maximum credit six units applicable on a master's degree.

#### 244. Directed Reading in Latin American History (3)

Prerequisite: Six upper division units in Latin American history.

Selected readings in source materials and historical literature in a designated area of Latin American history. Maximum credit six units applicable on a master's degree.

#### 245. Directed Reading in African and Middle Eastern History (3)

Prerequisite: Six upper division units in African or Middle Eastern history. Selected readings in source materials and historical literature in a designated area of African or Middle Eastern history. Maximum credit six units applicable on a master's degree. (Formerly titled Directed Reading in African History.)

### 246. Directed Reading in Ancient and Medieval History (3)

Prerequisite: Six upper division units in Ancient or Medieval history.

Selected readings in source materials and historical literature in a designated area of Ancient or Medieval history. Maximum credit six units applicable on a master's degree.

#### 250. Seminar in the Philosophy of History (3)

The major philosophies of history and directed research on topics selected from various philosophers of history such as Bury, Collingwood, Croce, Freud, Hegel, Marx, Pareto, Sorokin, Spengler and Toynbee.

# 251. Seminar in United States History (3)

Prerequisite: Six upper division units in United States history.

Directed research on topics selected from a designated area of United States history. Maximum credit six units applicable on a master's degree.

# 252. Seminar in European History (3)

Prerequisite: Six upper division units in European history.

Directed research on topics selected from a designated area of European history. Maximum credit six units applicable on a master's degree.

# 253. Seminar in Asian History (3)

Prerequisite: Six upper division units in Asian history.

Directed research on topics selected from a designated area of Asian history. Maximum credit six units applicable on a master's degree.

# 254. Seminar in Latin American History (3)

Prerequisite: Six upper division units in Latin American history

Directed research on topics selected from a designated area of Latin American history. Maximum credit six units applicable on a master's degree.

# 255. Seminar in African and Middle Eastern History (3)

Prerequisite: Six upper division units in African or Middle Eastern history. Directed research on topics selected from a designated area of African or Middle Eastern history. Maximum credit six units applicable on a master's degree. (Formerly titled Seminar in African History.)

# 256. Seminar in Ancient and Medieval History (3)

Prerequisite: Six upper division units in Ancient or Medieval history.

Directed research on topics selected from a designated area of Ancient or Medieval history. Maximum credit six units applicable on a master's degree.

296. Area Studies in History (1-3) Cr/NC

Prerequisite: Advancement to candidacy.

Preparation for the comprehensive examinations in the major and minor fields of history for those students taking the M.A. under Plan B. Maximum credit six units applicable on a master's degree.

# 297. Research (3) Cr/NC

Prerequisite: Advancement to candidacy and written approval of the History Department graduate coordinator.

Independent research in a specialized subject in history.

298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Humanities

Administered by the Dean of the College of Arts and Letters

#### Offered by the College of Arts and Letters

Curriculum in humanities. (Refer to the section of this catalog on Interdisciplinary Programs.)

#### All classes are conducted in English.

Lower Division Courses

# 30. The Jewish Heritage I (3) I

Major Hebraic concepts of the Biblical and post-Biblical periods; their impact on Western civilization and their contemporary relevance.

#### 31. The Jewish Heritage II (3) I, II

Major Jewish concepts from medieval through modern times; their impact on Western civilization and their contemporary relevance.

#### 40. Mythology (3)

Major myths of the world in ancient and modern versions.

#### 42. 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 140 or Humanities 142.

43. French Civilization (3) II French culture from the Enlightenment to the present. Continuation of Humanities 42. Not open to students with credit in French 141 or Humanities 143.

#### 44. 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 Humanities 144.

#### 45. 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 Humanities 145. 48-S. European Civilization (3) S

The civilization of Europe through a conducted travel tour.

# 52. 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 Hunanities 152.

53. 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 Humanities 153.

#### 54. 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 Humanities 154.

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#### 55. Italian Civilization (3) II

Continuation of Humanities 54 from the Renaissance to the present. Not open to students with credit in Humanities 155.

57. Islamic Culture and Civilization (3) I

Interdisciplinary survey of Islamic culture and civilization, emphasizing religious beliefs, their developments, and their role in creating or being integrated with sociopolitical systems from the time of Muhammad to the present.

58. African Culture and Civilization (3) II

An interdisciplinary survey.

59A-59B. 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.

66A-66B. Honors Colloquium (3-3)

Prerequisite: Sophomore standing and admission to the special advising program. Interdisciplinary conference, with readings, discussion, reports.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

#### 140. 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 140.

#### 141. 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 141.

#### 142. 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 140 or Humanities 42.

143. French Civilization (3) II French culture from the Enlightenment to the present. Continuation of Humanities 142. Not open to students with credit in French 141 or Humanities 43.

#### 144. 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 Humanities 44. (Formerly numbered German 140.)

### 145. 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 Humanities 45. (Formerly numbered German 141.)

146. 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 142.

148-S. European Civilization (3) S The civilization of Europe through a conducted travel tour.

### 150A-150B. The Cultural Heritage of Europe I (3-3) I

European history, literature, philosophy, art and music from the Middle Ages to the French Revolution, stressing major cultural movements: Romanesque, Gothic, Renaissance, Baroque, Rococo, and Classicism.

# 151A-151B. The Cultural Heritage of Europe II (3-3) II

European history, literature, philosophy, art and music during the 19th and 20th centuries, stressing major cultural movements: Romanticism, Realism, Naturalism, Symbolism, Expressionism, Existentialism, and Structuralism.

# 152. 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 Humanities 52.

153. 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 Humanities 53.

154. 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 Humanities 54.

#### 155. Italian Civilization (3) II

Continuation of Humanities 154 from the Renaissance to the present. Not open to students with credit in Humanities 55.

166. Honors Course (1-3) I. II

Refer to Honors Program.

170. The Humanities and Modern Man (1) Irregular

Lectures open to the public. Maximum credit three units.

Weekly lectures on literature, language, philosophy and cultural history. Reading and reports required of students enrolled for credit.

180. Study of American Culture (3) I, II, S

American Studies as a discipline, the critical methods of the field, the variety of materials for interdisciplinary study.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Consent of the instructor.

# **Industrial Arts**

In the College of Professional Studies

#### Faculty Emeritus: Ford, Luce

Professors: Anderson, Bailey (Chairman), Hammer, Irgang, McLoney, McMullen, Thiel Associate Professors: Dirksen, Marsters, McEowen

Assistant Professors: Blackmun, Ferree, Guentzler, Lybarger, Rasmussen, Sorenson Lecturers: Foster, 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.

Minor in industrial arts.

Teaching major in industrial arts for the single subject teaching credential.

# **Industrial Arts Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Industrial Arts 11 and 21 to be taken at the beginning of the major: four courses selected from Industrial Arts 10, 15, 31, 40, 51, 61, 71, and 81. (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 198 and 199.

#### **Industrial Arts Minor**

The minor consists of 20 units in industrial arts to include Industrial Arts 11, 21, and one lower division and one upper division course in each of two of the following fields: general metalworking, general woodworking, electricity-electronics, transportation, industrial crafts, industrial drawing, photography, plastics, and graphic arts. Choose electives in consultation with the adviser.

# **Industrial Arts Major**

# For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the Industrial Arts major for the single subject teaching credential are the same as the requirements for the A.B. degree in applied arts and sciences. In addition, Industrial Arts 192 must be taken.

#### Lower Division Courses

6. Survey of Electronics (3)

One lecture and six hours of laboratory.

A nonmathematical survey of electronics, practical utilization of tools and equipment of today's industry.

10. General Crafts (3)

One lecture and six hours of laboratory.

The practical utilization of tools, materials and methods employed in industrial craft areas. The fundamentals of good design

11. Orientation to Industrial Arts (2) I, II Required of all industrial arts majors during their first semester.

The history and philosophy of industrial arts with emphasis on the current status and development of the secondary school curriculum. Discussion of professional requirements, obligations, and development.

#### 15. General Plastics (3) I. II

One lecture and six hours of laboratory.

Production methods, mechanical and physical properties, composition of plastics. The basic processes: molding, casting, thermoforming, reinforcing and foaming.

#### 21. Industrial Drawing (3) I, II

One lecture and six hours of laboratory.

Fundamental theories, procedures and techniques of modern industrial drafting; study and practice intended to develop skill and judgment in application to drafting as the universal language of industry.

### 31. General Metalworking (3) I, II

One lecture and 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.

#### 40. Introduction to Photography (3) I, II One lecture and six hours of laboratory.

A consideration of photographic optics and chemistry; nature of light and image formation; photographic emulsions, exposure and development. Composition and lighting. Not open to students with credit in Journalism 50.

#### 51. General Woodworking (3) I, II

One lecture and six hours of laboratory.

Theories, practices and basic problems of working in wood; safety practices. The use of hand tools, the science of working with wood, and the techniques of student personnel management.

### 61. Basic Electronics (3) I, II

One lecture and 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.

#### 71. Power Mechanics (3)

One lecture and six hours of laboratory.

Introduction to the various forms of power transmission with emphasis on small gas engines and automotive preventive maintenance.

#### 81. General Graphic Arts (3) I, II

One lecture and 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. 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

101. Industrial Arts Crafts (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Previous industrial arts experience.

Emphasis on skills in the industrial arts crafts by laboratory experiences in such areas as plastics, jewelry, lapidary, leather and mosaics. Stress on creativity in design and in utilization of materials.

### 102. Advanced Industrial Arts Crafts (3) I, II

- One lecture and six hours of laboratory.
- Prerequisite: Industrial Arts 101.

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.

### 103. Advanced Industrial Crafts (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 102.

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.

105. Workshop in Instructional Materials (3) One lecture and six hours of laboratory. Industrial arts laboratory experiences adapted to individual needs; practice in use of tools common to problematic needs. Preparation of materials and instructional aids for classroom use. Not open to industrial arts majors.

#### 111. Comprehensive Industrial Arts (3)

One lecture and six hours of laboratory.

Individual opportunity to explore each area of the selected industrial arts activities, utilizing a variety of tools, equipment and materials. Not open to industrial arts majors.

#### 115. Tooling for Plastics Production (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 15.

Design and use of basic tooling; dies for injection and compression molding, forms for reinforced plastics processes, and molds for thermoforming and casting.

#### 116. Thermoplastics (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 115.

Composition and selection of materials; evaluation of physical and mechanical properties of various thermoplastics; special techniques for processing and production of thermoplastics.

117. Thermoset Plastics (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 115.

Composition and selection of materials; evaluation of physical and mechanical properties of various thermoset plastics, special techniques for processing and production of thermoset plastics.

#### 118. Plastic Fabrication and Finishing (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 15.

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.

121. Intermediate Industrial Drawing (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 21.

Complex theories and techniques of graphic delineation. Activities selected to develop individual competence.

122. Architectural Drafting (3) I, II One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 21.

Architectural drafting, primarily in small home planning. Development of drafting skills and understanding of good contemporary home design.

123. Industrial Arts Drawing (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Industrial Arts 21.

Practice in and analysis of modern industrial drafting techniques and theories.

131. Machine Tool Processes (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 31.

Study of machine tools as a manufacturing medium emphasizing precision measurement, standards, tolerance and inspection methods.

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132. Welding Processes and Procedures (3) I, II

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 31.

A study of the basic welding processes with emphasis on physical principles and properties, inspection methods and equipment operations.

# 133. Applied Metal Forming Operations (3) I, II One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 31.

Theory of conventional and high energy industrial forming processes augmented with laboratory forming experiences.

#### 140. Photography for Teachers (3)

One lecture and six hours of laboratory.

Designed for more mature students to learn photographic skills useful in teaching. Not open to students with credit in Industrial Arts 40.

#### 141. Intermediate Photography (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Industrial Arts 40 or 140.

Exposure theory, sensitometry, contrast control, specialized development, distortion and perspective control, and advanced studies of photographic lenses and equipment.

142. Advanced Photography (3) I, II One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 40 or 140.

A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques.

143. Advanced Problems in Photography (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 141.

Technical problems and techniques in photography.

144. Color Photography (3) Two lectures and three hours of laboratory. Prerequisite: Industrial Arts 141.

Exposure and processing techniques as applied to current color films and papers in relation to the theory of color photography.

#### 151. Machine Woodworking (3) I, II

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 51.

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.

# 152. Industrial Woodworking (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 151.

Designed to increase professional skills, craftsmanship, advanced technical skills, and equipment maintenance procedures.

# 153. Woodworking for Teachers (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 151.

Industrial arts woodworking resources and materials; experience in industrial arts planning, laboratory and equipment organization, and personnel management.

161. Intermediate Electronics (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 61.

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.

#### 162. Advanced Electronics (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 161.

Development of advanced skills with application to industrial electronics. Techniques in the use of electronics test equipment and analysis of electronic devices.

#### 163. Industrial Electronics (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 161.

Advanced problems in industrial electronics circuit development, analysis, theory and application.

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Prerequisite: Industrial Arts 161. Functions of circuitry as applied to switching, timing and pulse circuits. Basics of computer digital logic. 165. Analog Computer Fundamentals (3) One lecture and six hours of laboratory. Prerequisite: Industrial Arts 161. Introduction to electronic analog circuits, with emphasis on instrumentation and measurement techniques. 166. Honors Course (1-3) I, II Refer to Honors Program. 171. Engines and Drive Trains (3) I, II One lecture and six hours of laboratory. Prerequisite: Industrial Arts 71. Advanced study of the operational theory of engines, transmissions and differentials. Emphasis on precision individual systems overhaul. 172. Power System Diagnosis and Evaluation (3) I, II One lecture and six hours of laboratory. Prerequisite: Industrial Arts 171. Theory and application of various types of diagnostic testing equipment, with emphasis on trouble shooting and power system analysis. 173. Accessory Power Systems (3) I, II One lecture and six hours of laboratory. Prerequisite: Industrial Arts 171. Study of accessory power systems and technological innovations in the power industries. 181. Intermediate Graphic Arts (3) I, II One lecture and six hours of laboratory. Prerequisite: Industrial Arts 81. Activities in the various graphic arts with emphasis on new technology in the industry. 182. Advanced Graphic Arts (3) One lecture and six hours of laboratory. Prerequisite: Industrial Arts 181. Planning of activities and perfecting of skills in printing and publication; efficient operation of machines and equipment. 183. Industrial Arts Graphic Arts (3) One lecture and six hours of laboratory. Prerequisite: Industrial Arts 181. Advanced techniques in developing skills involved in graphic arts facilities. 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.

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.

# 193. Industrial Arts Organization and Management (2)

The organization of industrial arts in secondary schools, review of project requirements and methods of developing student participation in personnel management.

# 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.

### 195. Occupational Orientation (3)

164. Basic Digital Computers (3)

One lecture and six hours of laboratory.

Identifying a wide range of occupations in construction, manufacturing, transportation and communication. Students study the world of occupations, training requirements, entry specifications, levels of employment, salaries, job security, and other related information.

# 198. Senior Project (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Consent of instructor. Each student will work on a project in a selected industrial arts activity area. Oral progress reports will be made and a final written report is required.

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

#### **Graduate Courses**

200. Seminar (3)

An intensive study in industrial arts; topic to be announced in the class schedule. 201. Advanced Teaching Problems (3)

Prerequisites: Teaching experience in area selected and consent of instructor. Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-radio; (e) transportation; (f) graphic arts; (g) photography; (h) comprehensive industrial arts. Stress on project design and visual materials. Maximum credit six units applicable on a master's degree.

### 202. Industrial Arts Problems in Graphics and Design (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 123.

The theories and procedures of industrial drafting, including nomographs, descriptive geometry, and graphic solutions. Emphasis on special applications to industrial arts.

#### 203. Industrial Arts Problems in Metalworking (3) One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 133.

Problems involved in industrial arts metalworking. Individual research project dealing with instructional materials or processes.

204. Problems in Photography (3) One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 142, 143 or 144.

Advanced problems in photography in industry and photography in education. Individual research project dealing with instructional materials or industrial processes.

# 205. Industrial Arts Problems in Woodworking (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 153.

Intensive study in selected areas of the woodworking industry as it relates to materials, production and construction. Presentation of research findings.

# 206. Problems in Electronics (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 163.

Recent developments in the electronics areas. Special research projects and resource materials.

# 207. Research in Vehicular Power Systems for Industrial Arts (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 173.

Research in selected areas of the vehicular power systems and effective presentation of findings in oral and written form.

# 208. Industrial Arts Problems in Graphic Arts (3)

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 183.

Selected areas of the graphic arts industry related to materials, production methods, and allied pursuits. Techniques of presentation of findings in effective written and oral form.

210. Problems in Industrial Crafts (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 103.

Research in selected areas of industrial crafts with emphasis on instructional materials and techniques. Specifically designed for teachers, recreation workers and therapists.

# 215. Problems in Plastics (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 117.

Research with selected plastics processes and materials. Development of projects, aids, resource material, oral and written presentations.

# 220. History and Philosophy of Industrial Education (3)

A study of the philosophical foundations and development of industrial education and its continuing role in American culture. Contemporary practices and trends will be given

# 221. Curriculum Construction in Industrial Arts Education (3)

Selection of teaching content for school situations in compliance with the best known procedures regarding analysis, objectives, methods and learning, and development of instructional devices related directly to course content.

# 222. Instructional Resources for Industrial Arts Education (3)

Survey, selection, and compilation of materials used in the development of resource units for instruction in industrial education, involving publications, organized talks, field trips, visual materials, technical literature and related materials. Organization and evaluation of such materials.

223. Evaluation in Industrial Arts Education (3)

Principles, methods, and criteria of evaluation including the special problems of measuring growth, achievement, and performance in various phases of industrial education.

224. Organization, Administration and Supervision of Industrial Education Programs (3)

The principles, objectives, methods and techniques employed in the supervision of industrial education programs. Emphasis on organizing and administering programs at all levels in industry and education.

# 267. Field Work in Industrial Arts (3)

Prerequisites: Teaching experience in industrial arts and consent of instructor.

Application of the principles of laboratory organization, management and planning in reference to the objectives of industrial arts in development of school programs.

### 290. Research Procedures in Industrial Arts (3)

Location, selection, and analysis of scientific and professional literature, research data and specialized bibliographies.

#### 295. Selected Topics in Industrial Arts (3)

Prerequisites: Industrial Arts 290 and advancement to candidacy for the Master of Arts degree.

Study in selected topics of Industrial Arts culminating in a research paper.

#### 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

#### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis in industrial arts for the master's degree.

# **Industrial Technology**

In the Department of Industrial Studies In the College of Professional Studies

#### Faculty

Faculty assigned to teach courses in industrial technology are drawn from Industrial Studies.

Offered by the Department of Industrial Studies.

Major in industrial technology with the B.S. degree in applied arts and sciences.

### **Industrial Technology Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. This major in industrial technology may be planned with an emphasis in electronics

technology, industrial sales, or manufacturing technology.

A minor is not required with this major.

#### **Emphasis in Electronics Technology**

Preparation for the major. Economics 1A, 1B; Mathematics 3, 7, 19, 21, 22, 23, 37; Chemistry 2A-2B; Physics 2A-2B, 3A-3B; Industrial Arts 15, 21, 31, 40, 61, 71. (59 units.)

Major. A minimum of 42 upper division units to include Industrial Technology 121, 161, 174, 191, 194, and 195; Industrial Arts 161, 162, 163, 164, 165, 198; and six units of electives selected with the approval of the adviser.

# 262 / Industrial Technology

#### **Emphasis** in Industrial Sales

Preparation for the major. Economics 1A, 1B; Mathematics 3, 7, 19, 20; Physics 2A-2B, 3A-3B; Business Administration 30A; Industrial Arts 21; and 15 units selected from Industrial Arts 15, 31, 40, 51, 61, 71 and 81. (46 units.)

Major. A minimum of 42 upper division units to include Business Administration 150 and three units selected from Business Administration 162, 163, 164; Industrial Technology 191, 192, 193, 194, 195; 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. Economics 1A, 1B; Mathematics 3, 19, 21, 22, 23; Physics 2A-2B; 3A-3B; Business Administration 30A; Industrial Arts 21, 61, and 12 units selected from Industrial Arts 15, 31, 40, 51, 71 and 81. (50 units.)

Major. A minimum of 51 upper division units to include Business Administration 135 and six units selected from 132, 136, 137, 138, 140, 145; Industrial Technology 121, 161, 174, 191, 192, 193, 194, 195; 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**

#### 121. Industrial Design Problems (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 21.

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.

#### 122. Architectural Drafting (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 122.

Layout of light and medium commercial building using concrete, steel and wood construction.

#### 123. Technical Illustration (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 21.

Theory and techniques of axonometric projections with emphasis on isometric drawings and their application to technical illustration.

#### 124. Technical Illustration (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 21. Theory and application of single- and multiple-point perspectives. Shading and rendering techniques as applied to presentation-type drawings will also be emphasized.

# 134. Technology of Ferrous and Nonferrous Metals (3)

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 31.

Applied metallurgy dealing with physical properties, heat treatments, testing and industrial applications.

#### 135. Quality Assurance (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 31.

A study of quality control systems in manufacturing; dimensional, nondestructive and statistical systems are emphasized.

## 154. Wood Processes and By-Products (3)

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 152.

Study of wood by-products manufactured from mascerated wood fibres, laminates, dielectric glue equipment and other processes.

155. Wood Inspection and Testing (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 152.

Macro and micro wood identification, chemical and physical testing of wood and wood revived products.

161. Industrial Controls (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 61.

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.

174. Fluid Power (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 71.

Study of fluid power, including hydraulic and pneumatic systems. Emphasis on circuit design and applications.

### 184. Printing Processes and Operations (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 181.

Recent advancements in the technology of graphic arts-study of work related to various printing processes.

185. Photo-offset Lithographic Principles and Operations (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 181.

Study and experimentation in the field of offset lithography.

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.

#### 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.

#### 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.

### 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.

194. Industrial Proposals and Specifications (3)

Research, practice and investigation in the planning and writing of industrial proposals and plant manufacturing systems specifications.

# 195. Plant Layout and Material Handling (3)

Study of education and industrial plant layout for expeditious flow of materials.

# Italian

# In the College of Arts and Letters

#### Faculty

Professor: Vergani, G. Associate Professor: Vergani, L. Lecturers: Funston, Mracek

Offered by the Department of French and Italian Languages and Literatures Minor in Italian.

# **Italian Minor**

The minor in Italian consists of a minimum of 15 units in Italian, six units of which must be in upper division courses.

Japanese / 265

#### 264 / Italian

### **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 1; three years the equivalent of Italian 2; and four years the equivalent of Italian 3. 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.

#### 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.

#### 2. Elementary (4) I, II

Four lectures and one hour of laboratory.

Prerequisite: Italian 1.

Continuation of Italian 1. Not open to students who have completed four years of high school Italian.

#### 3. Intermediate (4) I

Prerequisite: Italian 2.

A practical application of the fundamental principles of grammar. Reading in Italian of cultural material, short stories, novels or plays; oral and written practice.

#### 4. Intermediate (4) II

Prerequisite: Italian 3.

Continuation of Italian 3. Reading of selections from Italian literature.

#### 10. Conversation (2) I

Prerequisite: Italian 2 or three years of high school Italian.

Practice in the spoken language; practical vocabulary, conversation on assigned topics; simple dialogues and plays.

#### 11. Conversation (2) II

Prerequisite: Italian 10 or Italian 3, or four years of high school Italian. Continuation of Italian 10.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

#### 101A-101B. Advanced Oral and Written Composition (3-3)

Prerequisites: Italian 4 and 11.

Translation into Italian from moderately difficult English prose. Outside reading of modern Italian prose, with monthly written reports in Italian. Readings and oral discussions in Italian on various facets of Italian life and culture.

#### 102A-102B. Survey of Italian Literature (3-3)

Prerequisite: Italian 4.

Important movements, authors and works in Italian literature from the Middle Ages to the present.

103A-103B. Dante and the Divine Comedy (3-3)

Prerequisites: Italian 4 and 11.

The poet, his cultural background, and his political-historical mission.

### 104A-104B. Literature of the Italian Renaissance (3-3)

Prerequisites: Italian 4 and 11.

Literature of the 15th and 16th centuries as presented in the works of Poliziano, Lorenzo De'Medici, Pulci and Boiardo; Machiavelli, Ariosto, Michelangelo, Cellini and Tasso.

# 144A-144B. Masterpieces of Italian Literature (3-3)

Works of outstanding Italian writers in English translation. Semester I: From Dante to Machiavelli. The awakening of Italian letters, culminating in the Renaissance. Semester II: Italy in spiritual crisis-the Reformation, Romanticism, Fascism. The search for a national identity from Galileo to contemporary poets and novelists.

# 166. Honors Course (1-3)

Refer to Honors Program.

#### 185. Selected Topics (3)

Topics in Italian language, literature, culture and linguistics. Conducted in English or in Italian. See class schedule. Maximum credit six units.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in Italian available in any given semester. Prerequisite: Consent of staff.

In the College of Arts and Letters

# Assistant Professor: Yun

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.

lapanese

#### 1. Elementary (4)

Faculty

Four lectures and one hour of laboratory.

Pronunciation, oral practice, readings on Japanese culture and civilization, minimum essentials of grammar.

#### 2. Elementary (4)

- Four lectures and one hour of laboratory.
- Prerequisite: Japanese 1.
- Continuation of Japanese 1.
- 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

103. Readings in Japanese (4) I

Reading of modern Japanese short stories and essays. Composition and advanced Prerequisite: Japanese 2. conversation.

- 104. Readings in Japanese (4) II

Prerequisite: Japanese 103. Continuation of Japanese 103, with readings in poetry, mainly Haiku.

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.

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

#### **Emphasis in Radio-TV News**

Preparation for the major. Journalism 50 and 51A. (6 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 102, 104, 121, 124, 125, 191, and six units of electives.

#### **Journalism Minor**

The minor in journalism consists of 15 units in journalism, nine units of which must be in upper division courses.

#### Journalism

#### For the Single Subject Teaching Credential in English

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree.

The requirements for the single subject teaching credential in English in the area of journalism are being revised. For further information consult the department.

#### Lower Division Courses

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.

#### 50. News and Feature Photography (3) I, II

Two lectures and three hours of laboratory.

An elementary course designed primarily for students of journalism and public relations; experience with professional photographic equipment and film processing; contact and projection printing; emphasis on composition and news value of pictures. Not open to students with credit in Industrial Arts 40.

#### 51A. News Reporting (3) I, II

Prerequisite: Sophomore standing and ability to type. Study of reporting techniques, with intensive laboratory practice in gathering, evaluating, and writing the basic types of news stories.

51B. Advanced News Reporting (3) I, II Prerequisite: Grade of C or better in Journalism 51A.

Intensive laboratory practice in writing the more complex types of news stories. Work includes some reporting for the campus newspaper, The Daily Aztec.

### 92. Newspaper Production (1-3) I, II

Three hours of laboratory required for each unit. Total credit in Journalism 92, 93, 192, and 193 limited to eight units. A maximum of three units of Journalism 92, or its equivalent, may be counted in the total required for graduation.

Prerequisite: Consent of instructor.

Special work in journalism by arrangement with the instructor. Includes reporting, editing, taking and processing pictures, working with the printer, proofreading in production of The Daily Aztec.

# 93. Magazine Production (1-3) I, II

Three hours of laboratory required for each unit. Total credit in Journalism 92, 93, 192, and 193 limited to eight units.

Special work in yearbook and magazine production by arrangement with the instructor. Includes editing and photographic work on campus magazines.

# 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

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.

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.

# **Journalism**

In the College of Professional Studies

Member of American Association of Schools and **Departments of Journalism** The news-editorial sequence is accredited by American Council on Education for Journalism

#### Faculty **Emeritus: Wimer**

Professors: Holowach (Chairman), Julian, Odendahl, Sorensen Associate Professors: Buckalew, Haberstroh Assistant Professors: Spevak, Whitney Lecturers: Learn, Love

#### Offered by the Department

Major in journalism with the A.B. degree in liberal arts and sciences. Single subject teaching credential in English in area of journalism. Minor in journalism.

#### **Journalism Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A total of 36 units in journalism may be counted for graduation, of which a maximum of 12 lower division units in journalism may apply. A minor is not required with this major.

# **Emphasis** in Advertising

Preparation for the major. Journalism 50 and 51A. (6 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 102, 121, 153, 156, 157, and 154 or 159, and six units of electives.

#### **Emphasis** in Magazine

Preparation for the major. Journalism 50 and 51A. (6 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 101, 102, 103, 121, 193 (minimum of three units) and nine units selected from Journalism 150, 151, 153, 180, and 191 (Internship with a magazine).

#### **Emphasis in Mass Communications**

Preparation for the major. Journalism 49, 51A, 51B, and Sociology 1, 60, and Mathematics 3. (18 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 102, 117, 121 or 162, 144 or 197, 177, and nine units of electives.

#### **Emphasis in News-Editorial**

# Preparation for the major. Journalism 50, 51A, and 51B. (9 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 102, 121, 144, 151, two semesters' enrollment in 192 (minimum of three units), 197, and six units of electives selected from Journalism 101, 105, 117, 150, 153, 155, 191 (Internship with a news medium), 194, or 199.

### Emphasis in Photojournalism

Preparation for the major. Journalism 50, 51A, and 51B. (9 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 102, 103, 104, 125, 150, 191 (Internship-minimum of three units in photography), and six units of electives.

#### **Emphasis in Public Relations**

Preparation for the major. Journalism 49, 50, and 51A. (9 units.)

Major. A minimum of 24 upper division units in journalism to include Journalism 104, 121 or 162, 153, 180, 191 (internship in public relations), and nine units of electives selected from Journalism 122, 181 or 184, and 183.

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## 103. Magazine Editing (3) II

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.

### 104. Radio and Television News Writing and Editing (3) I, II

(Same course as Telecommunications and Film 112.) Gathering, writing, and editing news in special forms required by radio and television. 105. Editorial Writing (3) I

Principles and policies of editorial composition for mass communications media.

#### 117. History of Mass Communications (3) I, II

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.

#### 118. The Foreign Press (3) I

The four theories of the press. Flow of international news. Analysis of the foreign media. Problems of propaganda, governmental control, language, and economic support.

#### 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.

#### 122. Public Opinion Measurement (3) I

(Same course as Psychology 122.)

The history, methods, and problems of public opinion and attitude measurement. Emphasis will be placed upon the polling of consumers and voters. Students will be given field experience.

#### 124. Radio News Production (3) I, II

Prerequisite: Journalism 104 or Telecommunications and Film 112.

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.

# 125. Television News Production (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Journalism 104 or Telecommunications and Film 112.

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.

#### 144. Reporting of Public Affairs (3) II

Prerequisites: Journalism 51A and 51B.

Coverage of the city hall, courthouse, police headquarters, federal agencies, courts, and other public and political centers.

#### 150. Advanced News and Feature Photography (3) II

Two lectures and three hours of laboratory.

Prerequisite: Journalism 50.

Techniques for achieving the technical and story-telling quality in photojournalism.

#### 151. News Editing (3) I, II

Three lectures and two hours of laboratory.

Prerequisite: Journalism 51B.

Editing copy, writing headlines, making up pages, handling telegraph copy.

# 152. High School Journalism (3) II

Methods of conducting high school journalism classes. Editorial, business and mechanical aspects of school publication work, with emphasis on copy editing, headline writing and layout. Not open to journalism majors.

#### 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.

#### 154. Newspaper Advertising Practice (1-3) I, II

Prerequisite: Journalism 153.

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.

# 155. Advanced Editing Techniques (3) I

Prerequisite: Journalism 151.

Principles of typography, page layouts, and use of pictorial material; selection, evaluation, editing, and display of news.

#### 156. Advertising Campaigns (3) I

Prerequisite: Journalism 153 or Telecommunications and Film 103.

Cases and problems dealing with advertising campaigns and decision making involving copy themes, artwork, and media imagery.

#### 157. Advertising Copy, Layout, and Production (3) I, II

Prerequisite: Credit or concurrent enrollment in Journalism 153. Preparation of copy, layout planning, and production of advertising.

#### 159. Advertising Research and Analysis (3) II

Prerequisite: Journalism 153.

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.

#### 162. Mass Communications and Society (3) I, II

Prerequisite: Sociology 1.

Social factors underlying nature, functions of mass media. Theories, models, research in media as culture carriers, as opinion shapers, and in relation to government.

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

#### 177. Research Methods in Mass Communications (3) II

Prerequisite: Sociology 60.

Investigate tools and methods of mass media; content analysis, readership studies, audience measurement, experimental designs, and representative studies.

#### 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.

# 181. Public Relations Techniques and Media Usage in Elections (3) II

Prerequisite: Journalism 180.

Use of public relations techniques in political campaigns of all sorts with emphasis on media usage. (Formerly numbered Journalism 179.)

182. Publications Workshop (3) I, II, S

Individual problems in high school publication problems. Maximum credit six units.

#### 183. Problems in Public Relations (3) II

Prerequisite: Journalism 180.

Current public relations problems of industry, public agencies and other institutions.

#### 184. Public Relations Practices (3) I

Prerequisite: Journalism 180.

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.

### 191. Internship in Journalism (1-3) I, II

Prerequisites: Journalism 51B or 104 or 153 or 180; and consent of the instructor. Prerequisite must be consistent with the nature of the internship.

Prearranged and supervised work on local magazines, city and county newspapers, radio and television stations, and on public relations, publicity, and advertising staffs of civic and business groups. Maximum credit six units with no more than three units in any one semester.

### 192. Newspaper Production (1-3) I, II

Three hours of laboratory required for each unit. Total credit in Journalism 92, 93, 192, and 193 limited to eight units.

Prerequisite: Journalism 51B.

Special work in journalism by arrangement with the instructor. Includes reporting, editing, taking and processing pictures, working with the printer, proofreading in production of The Daily Aztec.

### 193. Magazine Production (1-3) I, II

Three hours of laboratory required for each unit. Total credit in Journalism 92, 93, 192, and 193 limited to eight units.

Special work in yearbook and magazine production by arrangement with the instructor. Includes editing and photographic work on campus magazines.

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#### 194. Editorial Conferences (1-3) I, II

More than three hours a week per unit of credit.

Prerequisites: Journalism 192 or 193, and consent of publication adviser.

Techniques for solving problems in publication production through individual daily conferences with faculty adviser. Open only to editorial executives of The Daily Aztec and department magazine. Maximum credit six units.

197. Investigative Reporting (3) I, II

# Prerequisite: Journalism 51B.

Development of articles of substance and depth in specialized fields. Research, analysis, and interpretation of complex issues in the news. Maximum credit six units.

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

# **Graduate** Courses

200. Scope and Method of Mass Communications (3) Intensive preparation in methodology applicable to the various fields related to mass media study.

#### 202. Seminar: Mass Media and the Law (3)

Prerequisite: Journalism 102 or Telecommunications and Film 105.

Case studies of legal restrictions and guarantees affecting radio, television, motion pictures, advertising, and printed media.

#### 217. Seminar: History of Journalism (3)

Prerequisite: Journalism 117.

Directed research on topics of history of American journalism.

#### 218. Seminar in International Journalism (3)

Prerequisite: Journalism 118.

In-depth exploration of the foreign press and cross-cultural communication; the place of the press in national development and international stability; national images and world opinion; censorship, propaganda and other barriers to international understanding.

#### 221. Seminar: Media Problems (3)

Prerequisite: Six units in courses applicable to the Master of Science degree in Mass Communications.

Reading, investigation, and research concerning current topics in problems of mass media.

#### 222. Mass Communications and Public Opinion (3)

Prerequisite: Journalism 122 or 177.

Analysis of media and their opinion-shaping role; methods and effects of pressure groups; propaganda analysis; creation and perpetuation of images and stereotypes.

#### 240. Major Projects in Mass Communications (1-6)

Prerequisite: Journalism 121 or Telecommunications and Film 183.

Design and execution of an in-depth project in one of these areas: advertising campaign, series of detailed expository articles or news stories, or model public relations campaign. Maximum credit six units.

#### 253. Seminar in Print Advertising Problems (3)

Prerequisite: Journalism 156 or 157.

Investigation of the practice, responsibility, and philosophy of advertising in print media with individual projects, cases, and current literature.

#### 262. Seminar: Mass Communications and Society (3)

Prerequisite: Journalism 162.

Rights, responsibilities, and characteristics of mass media and mass communications practitioners; characteristics and responsibilities of audiences and society.

### 283. Seminar in Public Relations (3)

Prerequisite: Journalism 180.

Analysis and critique of contemporary public relations programs and theory. Development of a comprehensive public relations project involving original research.

### 298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with the department chairman and instructor.

#### 299. Thesis (3) Cr/NC

Prerequisite: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Latin

#### In the College of Arts and Letters

#### Faculty

Professors: Ingham, Warren Associate Professors: Genovese, Sutherland Assistant Professor: Eisner

Offered by the Department of Classical and Oriental Languages and Literatures

Major and minor work in Latin is offered under classics. (Refer to this section of the catalog on Classics.)

#### **High School Equivalents**

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Latin may be counted as the equivalent of Latin 1, three years the equivalent of Latin 2. The last year-course taken by a student in the high school language sequence may be repeated in college for graduation credit, not to exceed four units of repeated foreign language work.

#### Lower Division Courses

#### (See also courses in classics.)

1. Elementary (5) 1

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.

2. Elementary (5) II

Prerequisite: Latin 1.

Continuation of Latin grammar with selections illustrating syntax and style. Not open to students who have completed four years of high school Latin.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

103. Readings in Latin Prose (3) I

Prerequisite: Latin 2. Readings selected from classical Latin masterpieces in history, philosophy, oratory, letters. Authors may include Sallust, Cicero, Pliny the Younger. Emphasis on rapid reading.

#### 104. Readings in Latin Poetry (3) II

#### Prerequisite: Latin 103.

Readings selected from classical Latin masterpieces in epic, lyric, elegy, comedy. Authors include Vergil, Catullus, Ovid, Plautus.

#### 107. Late Latin (3)

### Prerequisite: Latin 2.

Selections from authors ranging from Tertullian and St. Augustine to Erasmus and Milton. The changes in Latin throughout the centuries.

155. Advanced Reading in Latin (3-4)

# Prerequisite: Latin 104.

Extended, intensive reading in a major author of more difficult or peculiar style or content, such as Lucretius, Caesar, Tacitus, Livy, Terence, Horace, Propertius, Petronius, Juvenal. Emphasis on style, content, interpretation. Maximum credit nine units.

### 199. Special Study (1-3) I, II

Individual Study. Maximum credit six units. Prerequisite: Consent of instructor.

### Linguistics / 273

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# Linguistics In the College of Arts and Letters

#### Faculty

Professors: Frey, Tidwell Associate Professors: Donahue, Seright (Chairman) Assistant Professors: Cooper, Drake, Underhill Lecturers: Dil, Elgin

Offered by the Department Master of Arts degree in linguistics. Major work in linguistics is not offered. Minor in linguistics.

#### Minor in Linguistics

The minor in Linguistics consists of a minimum of 15 units selected from the following, nine units of which must be from Linguistics: Linguistics 65, 180, 181, 182, 183, 184, 185, 186, 187, 188, 190, 196; Anthropology 120, 122, 124; Philosophy 131.

# Lower Division Courses

#### 65. Language Study (3) I, II

Introduction to the principles and practice of modern linguistics as applied to the study of English. (Formerly numbered English 65.)

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

180. The English Language (3) I, II

The history of English and its present-day use. (Formerly numbered English 180.) 181. The Structure of English (3) I. II

The structure of modern English, including the various approaches to linguistic analysis. (Formerly numbered English 181.)

#### 182. American English (3) I, II

The development of American English; regional and cultural differences in pronunciation, grammar and vocabulary. (Formerly numbered English 182.)

#### 183. English Linguistics (3) II

Prerequisite: Open only to seniors and graduate students who have had Linguistics 180, 181, or 196.

Advanced study of linguistic theory and its application to the analysis of English. (Formerly numbered English 183.)

#### 184. Phonemics and Morphemics (3) I

The study of procedures for arriving at the phonetic inventory of languages and the structuring of sound units (both linear and intonational) into phonemic systems; the study of morphemic hierarchies and their arrangements in forming words. (Formerly numbered English 184.)

#### 185. Theory and Practice of English as a Second Language (3) II

The nature of language learning; evaluation of techniques and materials for the teaching of English as a second language. (Formerly numbered English 185.)

#### 186. Sociolinguistics (3) I

Prerequisite: Three units in linguistics or sociology.

Investigation of the correlation of social structure and linguistic behavior.

#### 187. Psycholinguistics (3) II

Prerequisite: Three units in linguistics or psychology.

Psychological aspects of linguistic behavior.

188. Field Methods in Linguistics (3) II

(Same course as Anthropology 126.)

Prerequisites: Three units in linguistics or Anthropology 104, 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.

190. Selected Topics in Linguistics (2-3) I, II

Specialized study of a selected topic in linguistics. May be repeated with new content. Maximum credit six units.

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. (Formerly numbered General Language 196.)

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

#### Graduate Courses

#### 220. Indo-European (3)

Prerequisite: Anthropology 104 or Linguistics 183.

Phonology, morphology, and syntax of the Indo-European language community, with special attention to "Centum" and "Satem" relationships. (Formerly numbered English 220.)

221. Structure of a Non-Indo-European Language (3)

The structure of a non-Indo-European language, to be chosen by the instructor, including grammar, reading of texts, and sessions with a native speaker of the language, if possible. 223. Old English (3)

Study of Old English phonology, morphology, and syntax. (Formerly numbered English 223.)

#### 224. Middle English (3)

Modern linguistic analyses of the Middle English language; emphasis on the development of historical English dialects. (Formerly numbered English 224.)

# 290. Bibliography and Methods of Linguistic Research (3)

Prerequisite: Twelve upper division units in linguistics.

Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research, including editorial procedures. Recommended for the first semester of graduate work.

#### 295. Seminar in Linguistics (3)

Prerequisite: Completion of three units of 200-numbered courses in the master's program for linguistics.

Research in linguistics, course content varying according to instructor. Maximum credit six units applicable on a master's degree. (Formerly numbered English 295.)

# 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

#### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy Preparation of a project or thesis for the master's degree.

# **Mathematics** In the College of Sciences

#### Faculty

Emeritus: Clark, Emerson, Lemme

Professors: Becker, Branstetter, Bray, Burton, Deaton, Drobnies, Eagle, Fountain, Garrison, Gindler, Harris, Harvey, Ho, Holmes, Moser, Riggs, Saltz, Shaw (Chairman), Smith, Van de Wetering, Warren, Warschawski, Willerding

Associate Professors: Bryant, Burdick, Davis, Hager, Howard, Khazanie, Kopp, Lesley, Lopez, Macky, Marcus, Nower, Romano, Ross, Short, Villone, Whitman

Assistant Professors: Baase, Carpenter, Eckberg, Elwin, Flanigan, Herndon, Hintzman, Korevaar, Marosz, McLeod, Park, Self, Vinge

#### Offered by the Department

Master of Arts degree in mathematics.

Master of Science degree in mathematics.

Master of Science degree in computer science.

Master of Science degree in statistics.

Master of Arts for teaching service with a concentration in mathematics. Major in mathematics with the A.B. degree in liberal arts and sciences. Major in mathematics with the A.B. degree in applied arts and sciences. Minor in mathematics.

Teaching major in mathematics for the single subject teaching credential.

### **Mathematics Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. Mathematics 50, 51, and 52. (13 units.) Recommended: Physics 4A-4B-4C.

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work, including Mathematics 121A, 149, and 150A, and one two-semester sequence chosen from the following: Mathematics 119 and 170; 121A-121B; 121A and 160; 134 and 140A; 134 and 143; 135A-135B; 136 and 139; 150A-150B; 150A and 158.

# **Mathematics** Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Mathematics 50, 51, and 52. (13 units.) Recommended: Physics 4A-4B-4C.

Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work, including Mathematics 121A, 149, and 150A, and one two-semester sequence chosen from the following: Mathematics 119 and 170; 121A-121B; 121A and 160; 134 and 140A; 134 and 143; 135A-135B; 136 and 139; 150A-150B; 150A and 158.

# **Emphasis in Computer Sciences**

Preparation for the major. Mathematics 7, 37, 50, 51, 52. (19 units.)

Major. A minimum of 24 upper division units to include Mathematics 135A, 136, 137, 139; Mathematics 121A or 150A; and nine units selected, with the approval of the adviser, from mathematics or closely related areas.

#### **Emphasis in Statistics**

Preparation for the major. Mathematics 50, 51, and 52. (13 units.)

Major. A minimum of 24 upper division units in mathematics to include Mathematics 121A, 134, 140A, 140B, 149; nine additional units selected, with the approval of the adviser, from mathematics or closely related areas.

# **Mathematics Minor**

The minor in mathematics consists of a minimum of 21 units in mathematics, to include in the lower division Mathematics 50 and 51 or Mathematics 21, 22 and 23, and in the upper division, nine units in mathematics with not more than three units selected from 101, 104, 110A, 130A.

# **Mathematics Major**

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education. This major may be used by students in Teacher Education as an undergraduate major for

the A.B. degree.

The requirements for the mathematics major for the single subject teaching credential are being revised. For further information consult the department.

#### **Mathematics Placement Examinations**

All students who expect to enroll in Mathematics 3, 4, 19, 20, 21, 40, or 50 and have not completed prerequisite courses at San Diego State University must take the mathematics placement tests. Students in elementary education who expect to enroll in Mathematics 10A, 10B, or 110A and have not completed prerequisite courses at San Diego State University must take the Mathematics Education Placement Test. 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

# 3. Intermediate Algebra (3) I, II

Prerequisite: One year of elementary algebra. Review of elementary algebra, exponents, radicals, logarithms, quadratic equations, arithmetic and geometric progressions. Not open to students with credit in Mathematics 20

or higher-numbered courses.

4. Trigonometry (2) I, II Prerequisites: Credit in plane geometry in either high school or college combined with either credit in Mathematics 3 at this university or qualification on Mathematics Placement Examination. Mathematics 4 may be taken concurrently with either Mathematics 40 or 50. Basic concepts of analytic trigonometry.

7. Introduction to Computer Programming (2) I, II

- One lecture and three hours of laboratory.
- Prerequisite: Mathematics 3.

The use of a problem-oriented language and peripheral equipment. Machine organization. Extensive programming of problems on the computer.

- 10A. Mathematics for Elementary School Teachers (3) I
- Open only to students working towards a teaching credential in elementary education. Prerequisites: High school algebra and geometry, or qualification on Mathematics Education Placement Test.

Sets and relations, functions, the development of the number system from the natural numbers, including the whole numbers, the rational numbers, and the real numbers.

10B. Mathematics for Elementary School Teachers (3) I

Open only to students working toward a teaching credential in elementary education. Prerequisite: Mathematics 10A or qualification on Mathematics Education Placement Test. Elementary number theory and congruences, metric and nonmetric geometry. Introduction to logic and probability and some concepts from algebra.

18. Introduction to Mathematics (3) I, II

Prerequisites: Two years of high school mathematics. Topics from logic, modern algebra, and analysis designed to give the student an introduction to the structure of mathematical theories and their applications. Not open to students with credit in Mathematics 40 or higher-numbered courses.

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#### 19. Elementary Statistics (3) I, II

Two lectures and two hours of laboratory.

Prerequisite: Mathematics 3 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. (Formerly numbered Mathematics

# 20. Mathematics for Business Analysis (3) I, II

Prerequisite: Mathematics 3 at this university or qualification on the mathematics placement examinations. Basic mathematics for business students, including topics from finite mathematics and

calculus.

#### 21. Mathematical Analysis (3) I, II

Prerequisite: Mathematics 3 at this university or qualification on the mathematics placement examinations.

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 50.

#### 22. Mathematical Analysis (3) I, II

Prerequisite: Mathematics 21.

A continuation of Mathematics 21 including concepts of trigonometry and the calculus of elementary transcendental functions. Not open to students with credit in Mathematics 51.

#### 23. Mathematical Analysis (3) Prerequisite: Mathematics 22

Infinite series, partial differentiation, multiple integrals. For the nonmajor. (Not open to students with credit in Mathematics 52.)

# 37. Intermediate Computer Programming (4) I, II

Prerequisite: Mathematics 7.

General concept of machine and assembly languages, including data representation, looping and addressing techniques, subroutine linkages and use of system and programmer-defined macros.

#### 40. College Algebra (3) I, II

Prerequisite: Mathematics 3 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 50.

#### 49. Introductory Matrix Algebra (3)

Prerequisite: Mathematics 40. Matrices, vectors, linear dependence and independence, basis, change of basis, similarity and congruence. Applications to systems of equations, characteristic values and orthogonality.

#### 50. Single Variable Calculus (5) I, II

Prerequisites: Mathematics 40 at this university, with minimum grade of C, and credit or concurrent registration in Mathematics 4; or qualification on the mathematics placement examinations.

Topics in analytic geometry; differentiation and integration of single variable functions, with emphasis on techniques.

51. Calculus and Linear Algebra (4) I, II Prerequisite: Mathematics 50 with minimum grade of C.

Infinite series, linear equations and matrices, real vector spaces, linear transformations, determinants, eigenvalues. Emphasis on techniques in low dimensional cases.

### 52. Multivariable Calculus (4) I, II

Prerequisite: Mathematics 51 with minimum grade of C.

Partial differentiation, differential equations, multiple integrals, applications.

#### 55A-55B. Elementary Proofs (2-2) I, II

Prerequisite: Mathematics 50 with minimum grade of C. Mathematics 55A, with minimum grade of C, is prerequisite to 55B.

Semester I: Elementary algebraic systems, sets, functions, and induction. Semester II: Real numbers and limits.

60. Introduction to Modern Mathematical Concepts (3) II

Prerequisite: Mathematics 21 or 40.

Elementary approach to selected topics from mathematical logic, set theory, probability, matrices, linear programming and theory of games.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

#### 100. Mathematical Topics for School Teachers (2 or 3)

Offered only in Extension to currently employed elementary and secondary school teachers.

A study of selected portions of elementary or secondary school mathematics. May be repeated with new subject matter for additional credit. May not be used in a mathematics major or minor.

# 101. Mathematical Concepts for Secondary School Teachers (3) I, II

#### Prerequisite: Mathematics 50.

An examination of the concepts of secondary school mathematics from the teacher's point of view.

#### 104. History of Mathematics (3) I, II

Prerequisite: Mathematics 21 or 40.

History of mathematics down to early modern times.

105. Introduction to the Foundations of Geometry (3) II

#### Prerequisite: Mathematics 22 or 51

The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry.

#### 106. Projective Geometry (3) I

Prerequisites: Mathematics 22 or 51 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.

#### 107. Non-Euclidean Geometry (3)

Prerequisite: Mathematics 22 or 51

History of attempts to prove the fifth postulate; emphasis on plane synthetic hyperbolic geometry; brief treatment of other types of non-Euclidean geometry.

#### 108. Differential Geometry (3)

# Prerequisite: Mathematics 52.

Curves in space, Frenet formulas, curves on surfaces, geodesics, lines of curvature, asymptotic lines, Gaussian Curvature.

### 110A-110B. Modern Elementary Mathematics (3-3)

Prerequisite: Mathematics 10B or qualifications on Mathematics Education Placement Test. Mathematics 110A is prerequisite to 110B.

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.

# 118A-118B. Methods of Applied Mathematics (3-3) I, II

Prerequisite: Mathematics 52. Mathematics 118A is prerequisite to 118B. Selected topics from ordinary differential equations, with applications; hyberbolic, elliptic, Bessel and gamma functions, Fourier series and integrals, electromechanical analogies, the Laplace transform, and partial differential equations.

# 119. Differential Equations (3) I, II

Prerequisite: Mathematics 52 Ordinary differential equations with applications to geometry, physics, and chemistry.

# 121A. Advanced Calculus I (3)

Prerequisite: Mathematics 52. The real number system, limits and other topics, with emphasis on functions of one variable.

# 121B. Advanced Calculus II (3)

Prerequisite: Mathematics 121A. A continuation of Mathematics 121A with emphasis on functions of two or more variables.

# 124. Vector Analysis (3)

Prerequisite: Mathematics 52. Vector algebra, differentiation of vectors, gradient, divergence, and curl. Applications to geometry and physics.

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# 130A. Statistical Methods (3) I

Two lectures and two hours of laboratory. Prerequisite: Mathematics 19 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.

# 130B. Statistical Methods (3) II

Prerequisite: Mathematics 130A. Multiple regression, factorial models and nonparametric methods, all with emphasis on applications.

#### 134. Probability (3)

Prerequisite: Credit or concurrent registration in Mathematics 52.

Definitions, computation of probability by enumeration of the cases, discrete and continuous random variables, density functions, moments, limit theorems, selected distributions.

# 135A. Numerical Analysis and Computation (3) I

Prerequisites: Mathematics 7 and 52.

Iteration methods to solve nonlinear equation (convergence, errorbound, rate of convergence). Iteration methods to solve systems of nonlinear equations. Application to approximating real and complex zeros of a polynomial; Bernoulli's method and difference equations. Floating point arithmetic.

#### 135B. Numerical Analysis and Computation (3) II

Prerequisites: Mathematics 118A or 119, 121A and 135A. The interpolating polynomial, Lagrangian representation. Iterated linear interpolation. Inverse interpolation. Representations of the interpolating polynomial using differences. Numerical differentiation. Numerical integration. Numerical solution of ordinary differential equations. Solving linear systems.

#### 136. Data Structures (3)

Prerequisite: Mathematics 37.

Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multilinked structures.

137. Finite Mathematics, with Computer Applications (3)

#### Prerequisite: Mathematics 23 or 52.

Equivalence and order relations, Boolean algebra, finite machines and their optimization, logical design.

### 139. Programming Languages (3)

Prerequisite: Mathematics 37.

Formal definition of programming languages including specification of syntax and semantics. Structure of algorithmic languages. Special purpose languages.

#### 140A. Mathematical Statistics (3) I

Prerequisite: Mathematics 134. Sampling distributions, point and interval estimations and hypothesis testing with applications to problems in various fields.

#### 140B. Mathematical Statistics (3) II

Prerequisite: Mathematics 140A.

Elementary Bayesian decision theory and nonparametric statistics. Estimations and hypothesis testings in linear models.

### 141. Statistics, Theory and Applications (3)

Prerequisite: Mathematics 140A.

Applications of and case studies employing statistical techniques from the areas of experimental design, nonparametric inferences, decision theory and selected topics.

#### 143. Stochastic Processes (3)

Prerequisite: Mathematics 134.

Introduction to stochastic processes with selected applications.

#### 149. Linear Algebra (3) I, II

Prerequisite: Mathematics 23 or 52.

A study of linear equations, Euclidean spaces, linear transformations, matrices, determinants, and eigenvalues.

150A-150B. Modern Algebra (3) I, II

Prerequisites: Mathematics 22 and 60, or 51. Mathematics 150A is prerequisite to 150B. Selected topics from modern algebra to include an introduction to the theory of groups, theory of equations, and finite mathematics.

#### 152. Number Theory (3)

Prerequisites: Mathematics 22 and 60, or 51.

Selected topics from the theory of numbers to include congruences, Diophantine equations, and a study of prime numbers.

#### 155. Mathematical Logic (3)

Prerequisite: Mathematics 51 or 60 or Philosophy 20.

The logical rules of proof governing sentential connectives and the universal and existential quantifiers with applications. Not open to students with credit in Philosophy 121.

#### 156. Logical Foundations of Mathematics (3) Prerequisite: Mathematics 52 or 155.

Cantor's set theory and its antinomies. Development of various viewpoints on foundations of mathematics: logicism, intuitionalism, formalism.

#### 157. Machines and Recursive Functions (3)

Prerequisite: Mathematics 55A or 137 or 155.

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.

#### 158. Automata Theory (3) II

Prerequisite: Mathematics 150A.

Definition and algebraic description of finite automata. Reduced forms for sequential machines. Regular sets and expressions. Introduction to context-free languages.

### 160. Introduction to Topology (3)

Prerequisite: Mathematics 121A. Topological spaces. Functions, mappings, and homeomorphisms. Connectivity, compactness. Metric spaces.

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

170. Partial Differential Equations (3) Prerequisite: Mathematics 119.

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.

# 175. Functions of a Complex Variable (3)

Prerequisite: Mathematics 52.

Analytic functions, Cauchy-Riemann equations, theorem of Cauchy, Laurent series, calculus of residues.

#### 176. Compiler Construction (3)

Prerequisites: Mathematics 136 and 139.

Syntactical specification of languages. Scanners and parsers. Precedence grammars. Run-time storage organization. Code generation and optimization.

# 177. Artificial Intelligence (3) II

Prerequisite: Mathematics 155.

Heuristic approaches to problem-solving. Systematic methods of search of the problem state space. Theorem proving by machine. Resolution principle and its applications.

187A-187B. Probability and Statistics for Secondary Teachers (3-3)

Probability, measures of central tendency and dispersion, characteristics of frequency functions of discrete and continuous variates; applications.

196. Advanced Topics in Mathematics (1-3) I, II

Prerequisite: Consent of instructor. Selected topics in classical and modern mathematics. May be repeated with the approval of the instructor. Maximum credit six units.

198. Directed Readings in Mathematics Literature (1)

Prerequisite: Credit or concurrent enrollment 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.

199. Special Study (1-3) I, II Prerequisite: Consent of instructor.

Individual study. Maximum credit six units.

**Graduate** Courses

200. Seminar (1-3)

Prerequisite: Consent of instructor. An intensive study in advanced mathematics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

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#### 202. Geometrical Systems (3)

Prerequisites: Mathematics 150A and an upper division course in geometry. Ordered and affine geometries, decompositions, dilations. Projectivities and projective

space. Absolute geometry, isometrics, groups generated by inversions.

203. Topics in Algebra (3)

Prerequisites: Mathematics 121A and 150A.

Unique factorization domains, rings and ideals, groups, algebraic field extensions. A course designed for secondary school teachers.

### 204A-204B. Topics in Analysis (3-3)

Prerequisites: Mathematics 121A and 150A. Mathematics 204A is prerequisite to 204B. Topics in analysis, including the real number system, convergence, continuity, differentiation, the Riemann-Stieltjes integral, complex analysis, designed to give the secondary teacher a broad understanding of the fundamental concepts.

205 Advanced Mathematical Logic (3)

Prerequisite: Mathematics 150A or 155.

First-order theories, completeness theorems, arithmetization, Godel's incompleteness theorem.

#### 206. Applications of Computer Science (3)

Prerequisite: Classified graduate standing in Mathematics of Computer Science. Topic to be chosen from such applications as theorem proving simulation, learning theory, graphics, definition languages. Maximum credit six units applicable on a master's degree.

212. Advanced Ordinary Differential Equations (3)

Prerequisites: Mathematics 119 and 121A.

Existence and uniqueness theorems. Wronskians, adjoint systems, Sturm-Liouville boundary value problems, equations of Fuchsian type.

#### 214. Advanced Partial Differential Equations (3)

Prerequisite: Mathematics 170.

Theory and application of the solution of boundary value problems in the partial differential equations of engineering and physics by various methods; orthogonal functions, the Laplace transformations, other transformation methods, Green's functions.

#### 220A-220B. Topology (3-3)

Prerequisite: Mathematics 160. Mathematics 220A is prerequisite to 220B.

Metric spaces, regular spaces, Hausdorff spaces, general topological spaces, arcs and curves, and the Jordan curve theorem.

#### 222A-222B, Functional Analysis (3-3)

Prerequisites: Mathematics 149 and 160. Mathematics 222A is prerequisite to 222B. Banach spaces, Hilbert spaces, spectral theory and Banach algebras.

#### 224A-224B. Functions of a Complex Variable (3-3)

Prerequisites: Mathematics 121B and 175. Mathematics 224A is prerequisite to 224B. Analytic continuation, elliptic functions, conformal mapping, Riemann surfaces.

#### 226A-226B. Functions of a Real Variable (3-3)

Prerequisite: Mathematics 121B. Mathematics 226A is prerequisite to 226B.

Point sets, functions and limits, continuity, differentiations, Riemann and Lebesgue integration.

#### 230. Rings and Ideals (3)

Prerequisite: Mathematics 150B.

A development of the theory of rings.

231. Theory of Groups (3)

Prerequisite: Mathematics 150B. A development of the theory of groups.

232. Theory of Fields (3)

A study of both finite and infinite fields, and field extensions.

233. Linear Algebra and Matrix Theory (3) Prerequisite: Mathematics 149.

A study of matrices, determinants, and vector spaces.

240A-240B. Advanced Mathematical Statistics (3-3)

Prerequisites: Mathematics 121A and 134. Mathematics 240A is prerequisite to 240B. Hypothesis testing and estimation: optimality considerations; applications of the linear hypothesis, invariance and unbiasedness to analysis of variance and regression problems; sequential techniques, decision theory.

241. Advanced Probability (3)

Prerequisites: Mathematics 121A and 134.

Probability spaces, integration of random variables, convergence in probability, product spaces and product measures; conditional measures and independent measures.

242. Nonparametric Statistics (3)

Prerequisite: Mathematics 140B.

Tolerance regions, randomness problems, most powerful rank tests, the invariance methods, consistency and efficiency of tests.

243. Sample Surveys (3)

Prerequisite: Mathematics 140A.

The methods and applications of sample surveys, stratification and sampling, subsamples of clusters.

244. Multivariate Analysis (3)

Prerequisites: Mathematics 140B and 149.

Multivariate normal distributions, multivariate analysis of variance, factor analysis, canonical correlation.

245. Linear Statistical Hypothesis Testing (3)

Prerequisites: Mathematics 140A and 149

The multivariate normal distribution; distribution of quadraic forms; linear and curvilinear models; general linear hypotheses of full rank, regression models.

246. Statistical Decision Theory and Applications (3)

Prerequisites: Mathematics 121A and 140B.

Sequential and nonsequential decision methods, complete classes of decision functions, admissible decision functions, adaptive control systems, stochastic stability and control. 247. Design of Experiments (3)

Prerequisites: Mathematics 140A and 149. Experimental design models, a basic approach as well as a matrix algebra approach.

260A-260B. Theory of Computability (3-3) Prerequisites: Mathematics 137 or 155, and 157.

Turing machines and their variants. Godel numbering and unsolvability results. Models of computation.

265A-265B. Formal Languages and Syntactic Analysis (3-3)

Prerequisites: Mathematics 136, 139, and 157 or 158.

Definition of formal grammars; arithmetic expressions and precedence grammars, context-free and finite-state grammars. Algorithms for syntactic analysis. Relationship between formal languages and automata.

268A-268B. Computer Architecture and Programming Systems (3-3)

Prerequisites: Mathematics 136 and 139.

Topics to include computer architecture, operating systems, I/O hardware and software. translators. Selected applications such as simulation, computer graphics, CAI are additional optional topics.

### 270A. Advanced Numerical Analysis (3)

Prerequisites: Mathematics 135B and 149.

Numerical methods in linear algebra (solving linear systems, inverting matrices, eigenvalue problems). Elimination and iteration methods. Ill-conditioned systems, Detailed error analysis.

270B. Advanced Numerical Analysis (3)

Prerequisite: Mathematics 270A.

Polynomial approximation (least squares approximation, orthogonal polynomials, Chebyshev polynomials, trigonometric approximation), numerical solution of partial differential equations.

#### 297. Research (1-3) Cr/NC

Prerequisite: Six units of graduate level mathematics.

Research in one of the fields of mathematics. Maximum credit six units applicable on a master's degree.

#### 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

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# Mexican-American Studies

#### Faculty

Associate Professor: Nuñez

Assistant Professors: Blourock, Villarino Lecturers: Chavez, Lopez, Palacios (Chairman), Preston, Rascon, Rico, Urista Instructor: De Rivera

### Offered by Mexican-American Studies

Major in Mexican-American Studies with the A.B. degree in liberal arts and sciences. Minor in Mexican-American Studies.

Single subject teaching credential in social sciences in the area of Mexican-American Studies.

# Mexican-American Studies Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation

requirements listed on page 60 of this catalog. 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 1A-1B. (6 units.)

Major. A minimum of 24 upper division units to include Mexican-American Studies 100; History 182A-182B; History 183A or 183B or Comparative Literature 180; and 12 units History 182A-182B; History 183A or 183B or Comparative Literature 180; and 12 units selected from (social sciences) Mexican-American Studies 101, 102, 103, 104, 105, 111, 121, 122A-122B; or 12 units selected from (humanities) Mexican-American Studies 131, 132, 133, 134, 135, 165; or 12 units selected from (bilingual systems) Mexican-American Studies 134, 170, 172A, 172B, 173A, 173B, (for college teaching, students are urged to include Mexican-American Studies 172A or 172B, 179 and 185); or 12 units selected from (education) Mexican-American Studies 170, 180, 182, 183, 184, 185, 186.

Foreign language requirement. Students majoring in Mexican-American Studies must demonstrate knowledge of Spanish by satisfactory completion of 20 units of Spanish (Spanish 1, 2, 3, 4, 10, 11, or equivalents), or by written and oral examinations administered by Mexican-American Studies.

# **Mexican-American Studies Minor**

The minor in Mexican-American Studies consists of a minimum of 15 units in Mexican-American Studies, nine units of which must be in upper division courses.

# **Mexican-American Studies**

For the Single Subject Teaching Credential in Social Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree.

The requirements for the single subject teaching credential in social sciences which includes the area of Mexican-American Studies are being revised. For further information consult the department.

# Lower Division Courses

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.

2A-2B. Oral and Written Communication for the Spanish-Speaking (3-3)

Training for the Spanish-speaking in processes of oral and written expression. Semester I: Oral expression; addressing the barrio; formal delivery. Semester II: Written expression; English grammar and composition; the term paper. Mexican-American Studies 2A is equivalent to Speech Communication 3. Mexican-American Studies 2B is equivalent to English 5.

Mexican-American Studies 2A is not open to students with credit in Speech Communication 3 and Mexican-American Studies 2B is not open to students with credit in English 5.

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 10 is equivalent to Sociology 10.

#### 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 1A or 1B. Maximum credit six units.

#### 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.

#### 30. Mexican Literature in Translation (3)

Contemporary Mexican prose and poetry in translation.

#### 40. History and Sociology of Racism (3)

Survey and analysis of majority group racism and its effects upon minority ethnic groups and society.

#### 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.

### 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.

#### 60. Mexican-American Art (3)

Contemporary barrio art in the Southwest. Lectures and exhibitions by Chicano artists of California.

### 65A. History of Mexican-American Drama (3)

The Teatro Campesino of Luis Valdes: the Los Angeles Teatro Urbano. Theory and practice in Contemporary Chicano Theater, including literary, critical, and technical aspects viewed against the historical background.

### 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.

### 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.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

# 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 Aztlán.

# 101. Community Organization and Development (3)

Theory of organizing the Mexican-American community for creative roles in educational, political, social change. Role of the professional organizer.

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#### 102. Contemporary Problems of the Barrio (3)

Sociological and practical analysis of barrio problems. Observation in informal agencies for experience and sensitizing.

103. Narcotics in the Mexican-American Community (3)

Prevention and cure of drug problems; old and new methods and formal and informal agencies explored.

#### 104. 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,

#### 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.

#### 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.

#### 121. Immigration Law and Practices (3)

Legal and political status of the immigrant from Mexico: process of immigration; counseling the immigrant.

#### 122A-122B. The Chicano in Urban Politics (3-3)

Prerequisite: Consent of instructor. Mexican-American Studies 122A is prerequisite to 122B

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.

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.

#### 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.

#### 133. Prehispanic Literature (3)

Literature of Nahua and Maya areas in translation: studied as literature.

#### 134. Language of the Barrio (3)

Pachuco, caló, and barrio Spanish: a linguistic study.

#### 135. Mexican-American Literature (3)

Ideas, forms, history of significant Mexican-American prose, poetry and other literary genres.

#### 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.

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

Refer to Honors Program.

170. Bilingual and Bicultural Education (3) I, II

Prerequisite: Mexican-American Studies 1A-1B.

Philosophy of bilingual and bicultural education; investigation of bilingual models and exploration of research in area. Introduction to bilingual methods. (Formerly numbered Mexican-American Studies 181.)

#### 171. Bilingual Linguistics (3) I

Prerequisite: Mexican-American Studies 1A or 1B.

Basic elements of linguistics in English and Spanish; definitions and applications. A study of comparative elements in bilingual linguistics. Taught bilingually.

#### 172A. Bilingual Linguistics, Spanish (3) I

Prerequisite: Credit or concurrent registration in Mexican-American Studies 171.

A Spanish-English description incorporating the historical and dialectal elements of linguistics. Spanish syntax, phonology, morphology and semantics. Theories and principles of teaching in bilingual systems. This course is taught in Spanish. (Formerly numbered Mexican-American Studies 171A-171B-171C.)

# 172B. Bilingual Linguistics, English (3) II

Prerequisite: Credit or concurrent registration in Mexican-American Studies 171.

An English-Spanish description incorporating the historical and dialectal elements of linguistics. English syntax, phonology, morphology and semantics. Theories and principles of teaching in bilingual systems. Taught in English. (Formerly numbered Mexican-American Studies 172A-172B-172C.)

# 173A-173B. Bilingual Ethnolinguistics and Analysis (3-3)

Prerequisites: Mexican-American Studies 172A and 172B.

Semester I: The interrelationship of language and other aspects of human behavior. Language, thought, and reality. Relativity and universals. The origin of language. Semester II: Techniques of bilingual ethnolinguistic analysis (phonetics, phonemics, morphology, syntax). Application of these techniques under field conditions to the recording and analysis of the heterogeneous language styles of bilinguals by direct elicitation. Taught in Spanish and English.

# 174A-174B. Literature for the Bilingual Student (3-3)

Semester I: The study of Iberian, Spanish-American and Chicano literature for the pre-school, elementary, and junior high bilingual student. May be used in lieu of Education 133. Semester II: The study of Iberian, Spanish-American, and Chicano literature for the high school, college, and adult school bilingual student. Taught in Spanish.

#### 175A-175B. Bilingual Materials and Curriculum (3-3) I. II

One lecture and four hours of laboratory.

Prerequisite: Credit or concurrent registration in Mexican-American Studies 170.

Semester I: Investigation, evaluation and adaptation of existing materials in bilingual and bi-cultural education. Semester II: Design and development of curricula appropriate to bilingual and bi-cultural programs.

#### 178. Bilingual Systems Methods (3) I

Prerequisites: Mexican-American Studies 170; and 172A and 172B, or 175A-175B. Theory of teaching methods within a bilingual and bicultural program.

#### 179. Bilingual Practicum (4) II

Eight hours of laboratory.

Prerequisites: Mexican-American Studies 170 or 171, and Mexican-American Studies 178. Methods of teaching Spanish and English in elementary, junior high, and high school, emphasizing all valid linguistic approaches to language learning. May be used in lieu of Education 121E. (Formerly numbered Mexican-American Studies 175.)

#### 180. The Mexican-American and the Schools (3)

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. 182. Mexican-American Curricula (3)

Studies of current theories in Mexican-American curricula and their development.

#### 183. Rural and Migrant Education (3)

The Mexican-American rural and migrant student: problems and new programs.

#### 184. Counseling the Mexican-American Student (3)

Motivational counseling at all levels; parent counseling and involvement; recruiting for secondary continuation and college.

#### 185. Testing the Mexican-American Student (3)

Overview of psychological testing of the Chicano student. Topics include current issues in testing, test development, statistical analyses, latest research on testing.

#### 186. The Educational System (3)

Study and observation in county, city, and community administrative and staff offices. Identification of specific problems relating to Mexican-Americans as administrators and teachers.

# 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.

#### 197. Senior Survey in Mexican-American Studies (3)

Survey integrating studies of selected areas of Mexican-American Studies. Senior report will be written.

199. Special Study (1-3) Individual study. Maximum credit six units. Prerequisites: Consent of instructor and chairman of Mexican-American Studies.

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# Microbiology In the College of Sciences

Faculty

Emeritus: Myers Professors: Baxter, Kelly, Moore, Walch (Chairman) Associate Professors: Anderes, Phelps Assistant Professor: Steenbergen Lecturers: Campbell, Hemmingsen, Jokela

#### Offered by the Department

Master of Science degree in microbiology.

Master of Arts or Master of Science degree in biology with an emphasis in microbiology. Major in microbiology with the A.B. degree in liberal arts and sciences. Major in microbiology with the B.S. degree in applied arts and sciences. Major in Environmental Health with the B.S. degree in applied arts and sciences.

Minor in microbiology.

Single subject teaching credential in life sciences in area of microbiology.

# **Microbiology** Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. To satisfy the requirement in foreign language, it is strongly recommended that students select French, German, or Russian.

A minor is not required with this major.

Preparation for the major. Biology 1, 2, and 15 or Mathematics 19; Chemistry 1A-1B, 4 or 5, and 11 or 12; Mathematics 21 and 22, or 40 and 50; and Physics 1A-1B, or 2A-2B and 3A-3B. (39-42 units.) Recommended: Chemistry 13.

Major. A minimum of 24 upper division units in Microbiology and approved related fields to include Microbiology 101, 103, 105, and 114 or Biology 155; and Chemistry 115A-115B. Remaining units to be selected from courses in microbiology, and approved courses in other biological sciences, chemistry and physics.

# **Microbiology** Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Biology 1, 2, and 15 or Mathematics 19; Chemistry 1A-1B, 4 or 5, and 11 or 12; Mathematics 21 and 22, or 40 and 50; and Physics 1A-1B, or 2A-2B and 3A-3B. (39-42 units.) Recommended: Chemistry 13.

Major. A minimum of 36 upper division units in microbiology and approved related fields to include Microbiology 101, 103, 105, and 102 or 115; Chemistry 115A-115B; and three of the following courses: Microbiology 104, 107, 114, 116. Recommended: Chemistry 117, 109A and 109B. Remaining courses to be selected from courses in microbiology and approved courses in other biological sciences, chemistry, and physics.

# Medical Technology Curriculum

# In Applied Arts and Sciences

The curriculum in medical technology, which prepares for the licensed profession of Public Health Microbiologist or Clinical Laboratory Technologist or Bioanalyst, may be obtained by taking the microbiology major with the B.S. degree, but following a modified arrangement of courses. A description of the curriculum follows:

Public Health Microbiologist. To fulfill the academic requirements to qualify for the licensing examination given by the California State Department of Public Health for Public Health Microbiologist, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 102, 104, 107, 109, and Zoology 128. Recommended: Microbiology 107L, 111A-111B, 114; Zoology 108 and 126.

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 Normatic 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 102, 104, 107, 109, and Zoology 128, and should substitute Chemistry 114A-114B for Chemistry 115A-115B. Recommended: Biology 150 and 151; Microbiology 107L, 111A-111B, 114; Zoology 108 and 126.

# **Environmental Health Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Biology 1 and 2; Chemistry 1A-1B, 4 or 5, and 11 or 12; Physics 1A-1B, or 2A-2B and 3A-3B; Mathematics 21 and 22, or 40 and 50; Biology 15 or Mathematics 19; Geology 2; Health Science and Safety 65; and Sociology 1. (48-53 units.)

Major. A minimum of 36 upper division units to include Biology 110; Microbiology 101, 102, 111A-111B, 112, 113; Zoology 126; Public Administration 160; Engineering 123A, 125. The prerequisites for Engineering 123A are waived for students in this major.

# **Microbiology Minor**

The minor in microbiology consists of a minimum of 15 units in microbiology to include Microbiology 101, 103 and 105.

# Microbiology

# For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in life sciences which includes the area of microbiology are being revised. For further information consult the department.

#### Lower Division Courses

#### 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.

1L. Microbiology and Man, Laboratory (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Microbiology 1.

Laboratory exercises designed to complement material presented in Microbiology 1. Fulfills the general education laboratory requirement in the natural science area.

10. General Microbiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Chemistry 1A-1B or 2A-2B. Students with credit in Microbiology 1 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. (Formerly numbered Microbiology 1.)

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

101. General Microbiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Chemistry 11 or 12.

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.
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# 102. Pathogenic Bacteriology (4) I, II

Two lectures and six hours of laboratory. Prerequisites: Microbiology 101; Chemistry 4 or 5. Recommended: Chemistry 114A or

Bacterial and rickettsial agents of disease in man and other animals. Consideration of 115A. host-parasite relationships, the biology of the inciting agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.

# 103. Fundamentals of Immunology and Serology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 101; Chemistry 114A or 115A; and one other upper division

biological science course. The immunochemistry of antigens and antibodies and their reactions. Immunohematology and hypersensitivity. Serological techniques.

# 104. Medical Mycology (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Microbiology 101. Recommended: Chemistry 114A or 115A. 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.

## 105. Microbial Physiology (4) I, II

Two lectures and six hours of laboratory. Prerequisites: Microbiology 101; Chemistry 4 or 5; and Physics 2A-2B. Recommended:

Chemistry 114A or 115A; Physics 3A-3B. Physiology of selected bacteria, fungi, and other microorganisms.

Prerequisite: Microbiology 101. Recommended: Microbiology 102 and 103. 107. General Virology (2) I, II Viruses, their structure, function, culture, and methods of study.

# 107L. General Virology Laboratory (2) II

Prerequisites: Microbiology 102 and credit or concurrent registration in Microbiology 107. The culture, isolation, and characterization of viruses. (Formerly numbered Microbiology

### 108.)

109. Hematology (4) I, II Two lectures and six hours of laboratory.

Prerequisite: Microbiology 101. The study of normal and pathological blood with chemical, physical and microscopic methods.

# 111A-111B. Epidemiology (2-2)

Prerequisite: Microbiology 102; Biology 15 or Mathematics 19. Study of the transmission, distribution, and control of infectious and noninfectious diseases

in the community.

# 112. Principles of Environmental Health (4) I

Three lectures and three hours of laboratory and field work. Prerequisites: Biology 15 or Mathematics 19; Health Science and Safety 65; and

Microbiology 101. 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.

# 113. Environmental Health Administration (4) II

Three lectures and three hours of field work.

Prerequisite: Microbiology 112.

Concepts of organization and administration applied to environmental health; factors affecting these at the local, national and international levels.

## 114. Bacterial and Viral Genetics (2) I

Prerequisite: Microbiology 101. Recommended: Chemistry 114A or 115A. The genetics of bacteriophages; selected animal viruses and bacteria.

114L. Bacterial and Viral Genetics Laboratory (2) I

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Microbiology 114.

## 115. Advanced General Microbiology (4) II

Two lectures and six hours of laboratory.

Prerequisite: Microbiology 101. Recommended: Chemistry 114B or 115B; Microbiology 105, Biology 101, or Botany 130.

Taxonomy, comparative physiology and ecology of representative microorganisms found in various natural environments.

116. Marine Microbiology (4) I

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 101, and one other upper division biological science course. Microbiological population of estuary and ocean waters, interrelationships with other organisms and the physical and chemical environment.

118. Community Epidemiology (3) I, II Prerequisite: Microbiology 10.

A course for other than biological sciences majors. Epidemiological concepts and methods as they apply to current community problems.

120. Animal Viruses (4) I

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 102 and 107. Recommended: Microbiology 103 and 107L.

Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and serology.

### 130. Experimental Immunology (4) I

Two lectures and six hours of laboratory.

Prerequisite: Microbiology 103.

The study of selected antigens and antibodies and their reactions.

140. History of Microbiology (2) I, II

Prerequisite: Microbiology 1, 10, or 101.

The development of microbiology as a specialty area of the biological sciences and its influence on social and political developments.

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

Refer to Honors Program.

180. Electron Microscopy (4) II

Two lectures and six hours of laboratory.

Prerequisites: Physics 2A-2B and Microbiology 101. Recommended: Biology 103. Microbiology 107, and Zoology 108.

Principles and techniques in the biological application of the electron microscope.

190. Investigation and Report in Microbiology (2) I, II

Prerequisites: Microbiology 101 and at least one additional upper division course in microbiology.

Investigation and reports on current microbiological literature.

## 198. Methods of Investigation (2) I, II

One discussion and three hours of laboratory.

Prerequisites: Microbiology 101 and one other upper division course in the biological sciences.

Selection and design of individual investigation in microbiology; oral and written reports. Four units maximum credit for Microbiology 198 or a combination of this course with Biology 198 or Zoology 198.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Fifteen upper division units in the major with an average of B (3.0) or better.

### **Graduate Courses**

200. Seminar (2 or 3)

Prerequisite: Consent of instructor. An intensive study in advanced microbiology; topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

# 205. Seminar in Microbial Physiology (2)

Prerequisite: Microbiology 105.

May be repeated with new content. Maximum credit four units applicable on a master's degree.

210. Seminar in Pathogenic Bacteriology (2)

Prerequisite: Microbiology 102.

May be repeated with new content. Maximum credit four units applicable on a master's degree.

# 215. Seminar in Bacterial and Viral Genetics (2)

Prerequisite: Microbiology 114. May be repeated with new content. Maximum credit four units applicable on a master's degree.

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230. Seminar in Medical Mycology (2)

Prerequisite: Microbiology 104 or consent of instructor. May be repeated with new content. Maximum credit four units applicable on a master's degree.

# 240. Seminar in General Microbiology (2)

Prerequisite: Microbiology 105 or consent of instructor. May be repeated with new content. Maximum credit four units applicable on a master's degree.

245. Seminar in Aquatic Microbiology (2)

Prerequisite: Microbiology 105 or 116 or Biology 113.

May be repeated with new content.

Maximum credit four units applicable on a master's degree.

250. Seminar in Virology (2)

Prerequisite: Microbiology 107 or consent of instructor.

May be repeated with new content. Maximum credit four units applicable on a master's degree.

# 260. Seminar in Immunology and Serology (2)

Prerequisite: Microbiology 103 or consent of instructor. May be repeated with new content. Maximum credit four units applicable on a master's degree.

270. Biology of Animal Pathogenic Fungi (4)

## Three lectures and three hours of laboratory.

Prerequisites: Microbiology 103, 104, 105, and Chemistry 115B. Recommended: Botany 102, Biology 155, and Microbiology 102.

Physiological, cytological, genetical, and ecological factors relating to pathogenesis of the fungi-causing diseases in man and other animals.

### 272. Advanced Pathogenic Bacteriology (4)

Three lectures and three hours of laboratory.

Prerequisites: Microbiology 102 and consent of instructor. Biological and chemical nature of disease-producing bacteria. Application of experimental information to diagnostic laboratory procedures.

### 290. Bibliography (1)

Use of basic reference books, journals, pertinent bibliographies preparatory to the writing of a master's thesis.

291. Research Techniques (3) Prerequisites: Major in a biological science and two upper division courses in the area of microbiology or consent of instructor.

Analysis of research procedures in microbiology.

### 297. Research (1-3) Cr/NC

Research in one of the fields of microbiology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

### 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

In the College of Professional Studies

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

### Faculty

Emeritus: Smith, L D., Smith, D., Springston Professors: Anderson, Blyth, Bruderer, Estes, Forman, Genzlinger, Hogg, Hurd, Lambert, Mracek, Savage, Sheldon, Smith (Chairman), Snider, Ward-Steinman

Associate Professors: Almond, Brunson, Meadows, Rohfleisch

Assistant Professors: Flye, Hill, Logan, Loomis, Mitchell, Moe, Murphy, Yates Lecturers: Greenbush, Huber, O'Donnell

### Offered by the Department

Master of Arts degree in Music

Major in music with the A.B. degree in liberal arts and sciences.

Bachelor of Music degree in applied arts and sciences.

Minor in music.

Teaching major in music for the single subject teaching credential.

# Music Curricula

The music curricula are designed to fulfill the needs of all students: (1) those who have professional ambitions in music performance, or seek a foundation for graduate study leading to college or university teaching; (2) those who are preparing for one of the several state teaching credentials; (3) those whose major professional interest is in another department, and are seeking musical study as a minor; and (4) those who are interested in music as an elective study area for the enrichment of their cultural background.

### **General Basic Requirements**

General basic requirements for the B.M. degree in applied arts and sciences, the A.B. degree with a major in music in liberal 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.)

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 50.

3. Appearance in at least one student recital during each semester in residence, according to departmental recital requirements.

4. As laboratory experience, participation in one or two performing groups each semester, to meet the requirement in courses numbered 70 through 90 and 170 through 190 as stated in each of the majors, half of this requirement to be met in a major group in which the major instrument or voice is regularly used.

# **Music Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. Students must choose French, German or Italian to meet the language requirement.

A minor is not required with this major.

Preparation for the major. Music 8A-8B, 10A-10B, 10C, 58A-58B, and four units of Music 50. (23 units.)

Major. A minimum of 24 upper division units to include Music 108, 152A, 152B, six units selected from 154A-154B-154C-154D, four units selected from 170 through 188, six units of upper division electives.

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# **Music Major**

## With the B.M. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. Music 8A-8B, 10A-10B, 10C-10D (may be waived in full or in part by examination), 58A-58B; six units selected from courses numbered Music 70 through 90; four to eight units in Music 50. (26-34 units.)

Major. Forty-four to 49 upper division units to include two units selected from Music 148A-148B or 149A-149B, 152A-152B, 158A-158B, six units selected from courses numbered 170 through 190, four to eight units in Music 150, and the requirements in one of the following fields of emphasis:

(a) Performance. Ten units to include Music 167, 197, and seven units to be selected with the aid of the departmental adviser. (Pianists, vocalists, and string performers must include Music 141 and 142.)

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 199 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 7, two units of Music 107, 197 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 Minor**

To be admitted to the minor program, the student must demonstrate vocal or instrumental performing ability.

The minor in music consists of 26 units in music to include Music 8A-8B, 10A-10B, 58A-58B, and eight units of electives, six units of which must be in upper division courses selected in consultation with the departmental adviser.

### **Music Major**

### For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

Students in teacher education may use this major for the A.B. degree in applied arts and sciences by completing additional departmental requirements in recital attendance and performance, and proficiency examinations in voice and piano.

Preparation for the major. Music 8A-8B; 10A-10B-10C-10D (may be waived in full or in part by examination); 15A; four units selected from courses numbered Music 20A through 35; 46A-46B; four units of Music 50; 58A-58B; four units selected from courses numbered Music 70 through 90. (31-35 units.)

Teaching major. A minimum of 30 upper division units to include Music 146A-146B-146C: one unit selected from Music 148A or 149A; two units of Music 150; 152A-152B; 155; 158A-158B; two units selected from courses numbered Music 170 through 190.

### **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 51 and 151 and the music courses numbered 70 to 90 and from 170 to 190. Some students will be musically prepared to elect courses which may or may not be included in this group. Enrollment by qualified students who wish to elect these courses is encouraged.

### **Performance Studies for Credit**

Credit may be allowed for performance studies under the following conditions:

- 1. Properly enrolled music majors may enroll for performance studies with resident faculty without an additional fee.
- 2. Properly enrolled music majors who elect to study off campus with a teacher approved by the Department of Music may do so and may apply 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.

### Lower Division Courses

### 1. Recitals (1) I, II

Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with departmental requirements. Maximum credit four units.

# 2. Basic Musicianship for Non-Music Majors (3) I, II

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.

# 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.

# 8A-8B. Comprehensive Musicianship (3-3) I, II

Two lectures and two hours of activity.

Prerequisite: Music 8A is prerequisite to 8B.

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.

# 10A-10B. Piano-Elementary Class Instruction (1-1) I, II

Two hours.

Prerequisite: Music 10A is prerequisite to 10B. 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.

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10C-10D. Piano-Elementary Class Instruction (1-1) I, II Two hours. Prerequisite: Music 10B is prerequisite to 10C; and 10C to 10D. Continuation of Music 10A-10B.

15A. Voice-Elementary Class Instruction (1) I, II Two hours.

Mastery of the fundamentals of voice. Not open to voice majors.

15B. Voice-Elementary Class Instruction (1) I, II

Two hours.

Prerequisite: Music 15A.

Observation of individual or group lessons; critiques and discussion; performance in class. 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 120A.

### 20B. Strings-Elementary Class Instruction (1) II

Two hours.

Prerequisite: Music 20A or 120A.

Fundamentals of violin, viola, cello, and string bass by lecture and acquisition of elementary skills emphasizing those instruments not previously studied in Music 20A or 120A. Not open to students with credit in Music 120B.

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 125A.

### 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 125B.

### 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 130.

### 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 135.

### 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 140.

### 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 50 is eight units.

A. Piano

- B. Harpsichord
- C. Organ
- D. Voice
- E. Flute
- F. Oboe
- G. Clarinet H. Saxophone
- K. French Horn L. Trumpet M. Trombone N. Baritone Horn O. Tuba P. Percussion

Bassoon

O. Violin

Contrabass Harp **Classical** Guitar X. Classical Accordion Y. Composition

R. Viola

S. Cello

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.

### 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.

# 58A-58B. Comprehensive Musicianship (5-5) I, II

Four lectures and two hours of activity.

Prerequisite: Music 8B. Music 58A is prerequisite to 58B. Continuation of Music 8A and 8B. Late 19th and 20th century harmony. Counterpoint and texture in Medieval, Renaissance, and Baroque styles.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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.

## **Performance Organization Courses**

performance of a wide range of representative literature for each type of ensemble and

70. Chamber Music (1) I, II

Three hours.

credit four units.

Concurrent registration in Music 75 and 76 required. Combined activity, six hours. Prerequisite: Consent of instructor.

Maximum credit two units.

76. Symphonic Band (1) I, II

Semester I: Concurrent registration in Music 75 and 76 required. Combined activity, six hours.

Semester II: Activity, five hours. Prerequisite: Consent of instructor. Maximum credit four units.

80. Symphony Orchestra (1) I, II

Five hours. Prerequisite: Consent of instructor. Maximum credit four units.

85. Concert Choir (1) I, II Five hours. Prerequisite: Consent of instructor. Maximum credit four units.

86. Treble Clef (1) I, II

Three hours. Maximum credit four units.

87. Men's Glee Club (1) I, II Three hours.

Maximum credit four units. 88. University Chorus (1) I, II

Open to all persons interested in performing oratorio, cantata, opera, and the extended choral works. No entrance auditions are required. Maximum credit four units.

89. Jazz Ensemble (1) I, II

Three hours.

Prerequisite: Consent of instructor. Maximum credit four units.

90. Collegium Musicum (1) I, II

Three hours. Prerequisite: Consent of instructor.

Maximum credit four units.

The performance organization courses are devoted to the study in detail and the public designed to provide students with practical experience in rehearsal techniques.

Sections for string, woodwind, brass, piano, vocal, and mixed ensemble groups. Maximum Prerequisite: Consent of instructor.

75. Marching Band (1) I

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### **Upper Division Courses**

101. Recitals (1) I, II

Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with department requirements. Maximum credit four units.

104. Eighteenth Century Counterpoint (3) I, II

Prerequisite: Music 58B.

Two- and three-voice counterpoint in the eighteenth century manner; compositional exercise in appropriate forms. (Formerly numbered Music 59B.)

105. Modern Harmonic Practice (3) I, II

Prerequisite: Music 58B.

Analysis and composition in modern idioms.

106. Sixteenth Century Counterpoint (3) I, II

Prerequisite: Music 58B.

Contrapuntal techniques of the sixteenth century, as revealed in the works of Palestrina, Lassus and Ingegeneri. Compositional exercises in setting parts of the Mass and in writing motets.

107. Composition Laboratory (1) II

Three hours of laboratory.

Prerequisites: Music 7 and consent of instructor. Continuation of Music 7. Maximum credit two units.

108. Form and Analysis (2) I, II Prerequisite: Music 58B.

Musical structure and design from traditional and modern literature; development of detailed analytical techniques.

109A-109B. Instrumentation and Arranging (2-2) I, II

Prerequisite: Music 58B. Music 109A is prerequisite to 109B.

Arranging of music for full orchestra. Selected works of students to be performed by standard orchestras.

### 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.

### 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 20A.

### 120B. Strings-Elementary Class Instruction (1) II

Two hours.

Prerequisite: Music 20A or 120A

Fundamentals of violin, viola, cello and string bass by lecture and acquisition of elementary skills emphasizing those instruments not previously studied in Music 20A or 120A. Not open to students with credit in Music 20B.

### 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 25A.

### 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 25B.

# 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 30.

### 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 35.

# 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 40.

Prerequisite: Consent of instructor. Teaching beginning and intermediate applied music.	Survey	and	ev
A. Piano B. Strings			

B. String C. Voice

materials.

142. Performance Studies Laboratory (2) I, II

141. Performance Studies Pedagogy (3) I, II

Two lectures and three hours of laboratory.

- One lecture and three hours of laboratory.
- Prerequisite: Music 141A is prerequisite to 142A and 141B is prerequisite to 142B.
- Practical experience in the teaching of individual or group lessons.
- A. Piano
- **B.** Strings
- C. Voice
- 143. Music Literature for Elementary Teachers (3) I, II
  - Prerequisite: Music 2 or 8B.

Music literature suitable for teaching at the elementary school level; includes background information and ways of classroom presentation.

144. Folk Music (3) I, II

Prerequisite: Music 2 or 8B.

The origin and development of folk music; the social instruments and their use. Participation in singing and playing folk music.

145. Music in Contemporary Life (3) I, II

Prerequisite: Music 2 or 8B.

Functional music in society to include its psychological, physical and recreational uses; music as communication; the composer, the musician, and the audience.

### 146. Practicum (2) I, II

Usually taken concurrently with practice teaching and emphasizing the application of best practices.

- A. Choral Music
- **B.** Instrumental Music

# 147. Perspectives in Music (3) I, II

Prerequisite: Music 2 or 8B. Musical understandings from nonperformance aspects and perspectives regarding the relationships of music to the visual arts and the humanities.

# 148A-148B. Choral Conducting (1-1) I, II

Three hours.

Prerequisite: Music 58B. Music 148A is prerequisite to 148B. 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. (Formerly numbered Music 146A.)

# 149A-149B. Instrumental Conducting (1-1) I, II

Three hours.

Prerequisite: Music 58B. Music 149A is prerequisite to 149B.

Orchestra and band scores of graduated levels of advancement. The class will prepare and conduct instrumental works in public performance. (Formerly numbered Music 146B.)

# 150. 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; 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 150 is eight units.

. Piano . Harpsichord 2. Organ 0. Voice . Flute . Oboe 2. Clarinet I. Savophone	J. Bassoon K. French Horn L. Trumpet M. Trombone N. Baritone Horn O. Tuba P. Percussion Q. Violin	
I. Saxophone	and the second	

- S. Cello T. Contrabass U. Harp V. Classical Guitar X. Classical Accordion
- Y. Composition

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aluation of teaching

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### 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.

152A-152B. History of Music (3-3) I, II Prerequisite: Music 58B. Music 152A is prerequisite to 152B.

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.

### 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.

### 154. Music Literature (2) I, II

Prerequisite: Music 58B.

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

155. Ethnic Musics (3)

World music outside the European art tradition with emphasis on the musics of India, Africa, East Asia and Indonesia.

### 158A-158B. Comprehensive Musicianship (5-5) I, II

Four lectures and two hours of laboratory.

Prerequisite: Music 58B. Music 158A is prerequisite to 158B.

Continuation of Music 58A-58B. Counterpoint from 18th to 20th century, serial techniques, jazz, electronic music. Individual projects in instrumentation, composition, analysis, non-Western musics.

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

Refer to Honors Program.

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.

### 196. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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.

### 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.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of the department chairman.

# **Performance Organization Courses**

The performance group courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble, and designed to provide students with practical experience in rehearsal techniques.

# 170. Chamber Music (1) I. II

Three hours.

Prerequisite: Consent of instructor.

Section for string, woodwind, brass, piano, vocal, and mixed ensemble groups. Maximum credit four units.

175. 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. Symphonic Band (1) I, II

Semester I: Concurrent registration in 175 and 176 required. Combined activity, six hours. Semester II: Five hours per week. Prerequisite: Consent of instructor. Maximum credit four units.

180. Symphony Orchestra (1) I, II Five hours. Prerequisite: Consent of instructor.

Maximum credit four units. 185. Concert Choir (1) I, II

Five hours. Prerequisite: Consent of instructor. Maximum credit four units.

186. Treble Clef (1) I, II

Three hours. Maximum credit four units.

187. Men's Glee Club (1) I, II

Three hours.

Maximum credit four units.

188. University Chorus (1) I, II

Three hours. Open to all persons interested in performing oratorio, cantata, opera and the extended choral works. No entrance auditions are required. Maximum credit four units.

189. Jazz Ensemble (1) I, II

Three hours. Prerequisite: Consent of instructor. Maximum credit four units.

190. Collegium Musicum (1) I, II Three hours.

Prerequisite: Consent of instructor. Maximum credit four units.

### **Graduate Courses**

200. Seminar in Music Education (3)

Prerequisite: Consent of instructor. Seminars in music education are offered to provide an opportunity for concentrated study in the several areas listed. A. Development and Teaching of Strings B. Choral and Vocal Techniques C. General Music

- 201. Foundations of Music Education (3)

History and philosophy of music education in relation to current trends in the teaching of music.

202. Administration and Supervision of Music Education (3)

Curriculum, scheduling, finance, human relations, organizational aspects, and the role of the supervisor-consultant.

### 204. Comparative Music Education (3)

Various international philosophical and technical approaches to teaching music to include the Orff, Kodaly, Suzuki and other systems.

# 207. Composition (2 to 3)

Three hours of laboratory and public performance of an extended original work as a project.

Prerequisite: Music 107.

Advanced composition for various media, development of original idiom, intensive study of modern music.

208. History and Development of Music Theory (3)

Prerequisites: Music 108 and 152B.

A survey of important theoretical approaches to music, from pre-Socratic writers to the present.

# 209. Advanced Orchestration (2)

Prerequisite: Music 109B.

Intensive work in the practical scoring for ensemble, full orchestra, and symphonic band. Score analysis. Selected works of the class members will be performed.

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210. Electronic Music (3)

Prerequisite: Undergraduate concentration in composition. Theory, techniques and composition of various kinds of electronic music.

211. Analytical Studies of Music (3) Prerequisite: Music 108.

Melodic, formal, contrapuntal and harmonic analysis of music.

213. Seminar: Music Theory (3)

Prerequisites: Music 104 and 106.

Principles of traditional harmony and ear training.

# 246A. Advanced Choral Conducting (2)

Prerequisite: Music 146B.

Course designed to develop skills at professional level; study of different styles of choral literature and their relationship to conductor's art; score analysis and experience in conducting.

### 246B. Advanced Instrumental Conducting (2)

Prerequisite: Music 146B.

Course designed to develop skills at professional level; study of conducting style as related to band and orchestra literature score analysis and experience in conducting.

### 250. Advanced Performance Studies (2)

Fifteen one-hour private lessons.

Prerequisite: Audition before music faculty.

Advanced studies in technical, stylistic and aesthetic elements of artistic performance culminating in a graduate recital. Maximum credit four units applicable on a master's degree.

A. Piano	J. Bassoon	R. Viola
B. Harpsichord	K. French Horn	S. Cello
C. Organ	L. Trumpet	T. Contrabass
D. Voice	M. Trombone	U. Harp
E. Flute	N. Baritone Horn	V. Classical Guitar
F. Oboe	O. Tuba	X. Classical Accordio
G. Clarinet	P. Percussion	Y. Composition
H. Saxophone	Q. Violin	the Spilling many fillesteration was

### 252. Seminar in Music History (3)

Prerequisites: Music 152B and consent of instructor.

Seminars in music history are offered for intensive study in each of the historical eras as listed below.

- A. Music of the Middle Ages and Renaissance B. Music of the Baroque Era
- C. Music of the 18th and 19th Centuries D. Twentieth Century Music
- E. American Music

253. Musicology (3)

Prerequisite: Music 152B.

Problems and research in musicology. Projects in bibliography, source materials, music history, criticism, aesthetics and related fields. Writing and presentation of a scholarly paper.

255. Seminar: A Major Composer (3) Prerequisite: Music 152B. Completion of a seminar in Music 252 is recommended. The life, milieu and works of a major composer, such as Bach, Mozart or Schubert will be studied. Maximum credit six units applicable on a master's degree.

# 260. Seminar in the Notation of Polyphonic Music (3)

Prerequisite: Music 152B. Completion of Music 252A is recommended.

Problems related to the notation of Medieval, Renaissance and Baroque music. Examples will be transcribed into modern notation.

A. Notation of Ensemble Music: White Mensural Notation.

B. Notation of Ensemble Music: Black Notation to the End of Franconian Notation.

270. Seminar: Interpretation of Early Music (3)

Prerequisites: Completion of Music 252A and 252B is recommended.

Performance practice in Medieval, Renaissance and Baroque music; projects in music editing; reports; performance on historical instruments. Participation in the Collegium Musicum required.

290. Research Procedures in Music (3)

Reference materials, bibliography, investigation of current research in music, processes of thesis topic selection and techniques of scholarly writing.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

### 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for a master's degree.

# Nursing

In the College of Professional Studies

Agency Member of the National League for Nursing

Accredited by the California Board of Nursing Education and Nurse Registration and by the National League for Nursing

### Faculty Emeritus: Nye

Professors: Black, Coveny, Johnson, Moses, Petrie (Director), Salerno, Sirovica, Thomas Associate Professor: Laiho

Assistant Professors: Barton, Flagg, Hassall, La Monica, Laws, Leslie, Moffett, Richards, Roth, Verderber, Warnock

Lecturers: Blanchard, Clerkin, Colwell, Dodson, Ford, Gunning, Heifetz, Rehman, Schwartz, Wong

### Offered by Nursing

Major in nursing with the B.S. degree in applied arts and sciences

# Nursing Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

The curriculum in nursing requires completion of a minimum of 128 units as prescribed, with a grade of C or better in each nursing course completed in satisfaction of requirements for the degree. Directed clinical experience in hospitals and health agencies in San Diego County is an integral part of the program. Graduates are eligible to apply for licensing as a registered nurse in California and to apply for the California Certificate of Public Health Nursing.

All students, including registered nurses, are subject to the same requirements. However, graduates of associate degree and diploma programs in nursing may, after evaluation of their competency, be placed in appropriate advanced nursing classes.

Nursing reserves the right to evaluate for acceptance, prerequisite courses required for nursing major completed over five years prior to application for admission or readmission.

Preparation for the major. Biology 9; Chemistry 1A-1B, 11; Microbiology 10;

Psychology 1; Sociology 1; Zoology 8; three units in human growth and development; three units in personality development; three units in marriage and the family. (42 units.)

Major. A minimum of 50 upper division units in Nursing to include Microbiology 118, Nursing 101, 102, 103A-103B, 104A-104B, 105, 106, 116, 130, 131, 132, 133, 136, 137; and four units selected from Nursing 151, 152, 153, 154 and 155. A minimum grade of C must be earned in each nursing course in order to enroll in the next sequential course.

# **Upper Division Courses**

101. Maternal-Neonatal Nursing (3) I, II

Prerequisites: Minimum grade of C in each course listed under Preparation for the Major in Nursing; concurrent registration in Nursing 102, 103A and 104A.

Principles of care of mothers and newborn infants, including the recognition of the manifestation of basic needs with emphasis on the importance of family relationships.

102. Maternal-Neonatal Nursing Experience (4) I, II

Twelve hours of laboratory.

Prerequisites: Concurrent registration in Nursing 101, 103A and 104A. Clinical experience in the care of mothers and newborn infants including all phases of the maternity cycle.

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103A-103B. Psychiatric and Mental Health Nursing (2-1) I, II

Prerequisites: Nursing 103A: Concurrent registration in Nursing 101, 102 and 104A. Nursing 103B: Nursing 103A and concurrent registration in Nursing 104B, 130 and 131.

Beginning development in the utilization of principles and concepts of mental hygiene in meeting needs of patients exhibiting both normal and deviant behavior.

104A-104B. Psychiatric and Mental Health Nursing Experience (2-2) I, II Six hours of laboratory

Prerequisites: Nursing 104A: Concurrent registration in Nursing 101, 102 and 103A. Nursing 104B: Nursing 104A and concurrent registration in Nursing 103B, 130 and 131.

Clinical experience focusing on the utilization of mental health concepts in meeting needs of patients.

### 105. Adult Health Nursing (4) I, II

Prerequisites: Nursing 130 and concurrent registration in Nursing 106, 132 and 133. The analysis of the health-illness needs of the adult and the nursing therapies necessary for the promotion of optimum health.

### 106. Adult Health Nursing Experience (4) I, II

### Twelve hours of laboratory.

Prerequisites: Concurrent registration in Nursing 105, 132 and 133.

Clinical experience in recognizing and meeting the health needs of the adult patient in a variety of settings.

116. The Professional Role (3) I, II

Prerequisite: Concurrent registration in Nursing 136 and 137.

Development of the nursing profession in Western Civilization. Focus on the multifaceted role of the professional nurse in modern social order.

### 130. Child Health Nursing (3) I, II

Prerequisites: Nursing 101 and concurrent registration in Nursing 103B, 104B and 131. Nursing care needs of the well and the sick child from birth through adolescence.

### 131. Child Health Nursing Experience (4) I, II

Twelve hours of laboratory.

Prerequisites: Concurrent registration in Nursing 103B, 104B and 130.

Clinical experience focusing on growth, developmental and health needs of the child in a variety of settings.

132. Community Health Nursing (3) I, II Prerequisites: Microbiology 118, Nursing 130 and concurrent registration in Nursing 105, 106 and 133.

Principles and concepts of community health necessary to maintain the health of individuals, families and groups.

### 133. Community Health Experience (3) I, II

Nine hours of laboratory.

Prerequisites: Concurrent registration in Nursing 105, 106 and 132.

Clinical experience, in conjunction with community agencies, directed toward attaining and maintaining the health of the total population.

### 134. Advanced Medical-Surgical Nursing (2) I

Prerequisites: Nursing 130. Concurrent registration in Nursing 116, 135, 136 and 137. Common problems in the care of the acutely ill patient and the patient with continuing health problems requiring a planned rehabilitation program.

### 135. Experience in Advanced Medical-Surgical Nursing (2) I, II

Six hours of laboratory.

Prerequisite: Concurrent registration in Nursing 116, 134, 136 and 137.

Directed clinical experience in the nursing care of the acutely ill patient and the long-term patient requiring rehabilitation and teaching.

### 136. Management of Patient Care (2) I, II

Prerequisites: Nursing 132 and concurrent registration in Nursing 116 and 137.

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.

### 137. Management of Patient Care Experience (2 or 3) I, II

Six or nine hours of laboratory.

Prerequisites: Nursing 133 and concurrent registration in Nursing 116 and 136. Clinical experience in utilizing tools and skills of management in assessing, providing and directing health care.

151. Advanced Concepts in Clinical Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 132.

Theory and selected practice in the care of the patient with complex problems requiring intensive care, coronary care and/or rehabilitation.

152. Advanced Psychiatric and Mental Health Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 132.

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.

### 153. Geriatric Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 132.

Principles of gerontology as they apply to the nursing care of the older patient in a variety of settings.

154. Advanced Maternal-Neonatal Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 132.

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.

### 155. Cancer Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 132.

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.

### 160. School Nursing (3) Extension

Prerequisite: Nursing 132.

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.

# 165A. The School Nurse Practitioner (6) Irregular

Four lectures and six hours of laboratory.

Primary health care of school age children. Emphasis on the physical assessment.

# 165B. The School Nurse Practitioner (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 165A. Theory and supervised practice of assessing the health-illness of children in the school system.

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

Refer to Honors Program.

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

# Oceanography

# Administered by the Dean of the College of Sciences

San Diego State University provides preparation for work in the oceans by offering degree programs in fundamental fields supplemented by marine-related course work and oceanographic experience. Interdisciplinary instructional and research activities are coordinated by a Bureau of Marine Sciences. Ocean-oriented courses and bachelor's degree programs are available in the departments of: Biology, Botany, Chemistry, Civil and Mechanical Engineering, Geography, Geology, Microbiology, Physical Sciences, Physics and Zoology. Master's degree with emphasis on marine problems may be earned in these departments and in the School of Business Administration. The Ph.D. degree is offered in

departments and in the School of Business Administration. The Ph.D. degree is offered in Chemistry, Ecology and Genetics jointly with the University of California. Certification by the San Diego State University Diving Control Board is required for all faculty and students performing SCUBA diving under the auspices of the University. Certification information can be obtained upon application to the Control Board via the Bureau of Marine Sciences.

# Prerequisites: Bachelor's degree in Nursing; Nursing 160.

# 304 / Philosophy

### 100. The Oceans (2) 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.

### 196. Practical Oceanography (6) I, II

Laboratory, field work, or on-the-job training by arrangement.

Prerequisites: Chemistry 1A-1B; Physics 2A-2B and 3A-3B; a course in intermediate college algebra and an elementary course in statistics. Recommended: a course in analytical chemistry (Chemistry 4 or 5).

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.

### For additional courses in Oceanography see:

Biology 113. Biological Oceanography Chemistry 180. Chemical Oceanography Geology 140. Marine Geology Microbiology 116. Marine Microbiology Physical Science 110. Physical Oceanography Zoology 150. Marine Biology

# Philosophy

### In the College of Arts and Letters

### Faculty

Emeritus: Mendenhall

Professors: Crawford, Howard, McClurg, Nelson, O'Reilly, Ruja, Shields, Snyder, Warren, Weissman

Associate Professors: Carella, Koppelman (Chairman), Lauer, Troxell Assistant Professors: Feenberg, Rosenstein

### Offered by the Department

Master of Arts degree in philosophy. Major in philosophy with the A.B. degree in liberal arts and sciences. Minor in philosophy.

# **Philosophy Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Nine lower division units in philosophy including Philosophy 20.

Major. A minimum of 24 upper division units in philosophy. Six units from Philosophy 101, 102, 103, 104 and 175; and six units from Philosophy 121, 122, 123, 125 and 128 are recommended.

### **Philosophy Minor**

The minor in philosophy consists of a minimum of 15 units in philosophy, nine units of which must be in upper division courses. Philosophy 101 is recommended.

### Lower Division Courses

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. (Formerly numbered Philosophy 1A.)

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. (Formerly numbered Philosophy 1B.)

### 3. Historical Introduction to Philosophy (3) I, II

Introduction to philosophical inquiry through study of the works of major philosophers in their historical contexts.

### 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.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101. History of Philosophy I (3) I, II Prerequisite: Three units of philosophy. Thales through Marcus Aurelius.

102. History of Philosophy II (3) I, II Prerequisite: Philosophy 101. Plotinus through William of Occam.

103. History of Philosophy III (3) I, II Prerequisite: Philosophy 101. Recommended: Philosophy 102. Nicholas of Cusa through Kant.

104. History of Philosophy IV (3) I Prerequisite: Philosophy 103. Fichte through Royce.

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.

# 108. Existentialism (3) I

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.

# 109. Ordinary Language Analysis (3) I

Prerequisite: Six units of philosophy. Foundations of linguistic philosophy with emphasis on achieving an awareness of the relationship between thinking and language.

## 110. Philosophy of Law (3) I

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.

# 112. Political Philosophy (3) II

Prerequisite: Philosophy 1, 2 or 3. Selected aspects of the political structures within which we live, such as law, power, sovereignty, justice, liberty, welfare.

# 121. Deductive Logic (3) I

Prerequisite: Philosophy 20 or Mathematics 60.

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 155.

122. Inductive Logic (3) II

Prerequisite: Philosophy 20.

Definition, classification and division. The logic of experimentation and statistics. Formation and validation of hypotheses. Probability theories.

## 306 / Philosophy

# 123. Theory of Knowledge (3) I

Prerequisite: Six units of philosophy.

The major theories of human knowledge: mysticism, rationalism, empiricism, pragmatism.

125. Metaphysics (3) II

Prerequisite: Six units of philosophy. Prominent theories of reality, e.g., realism and nominalism, materialism and idealism, teleology and determinism.

127. Values and Social Science (3) II

### 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. 128. Theory of Ethics (3) I

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.

### 129. Social Ethics (3)

Prerequisite: Philosophy 1, 2 or 3.

Ethical issues of contemporary life. Individualism vs. collectivism; democracy vs. dictatorship; ethical problems arising in law, medicine, business, government and interpersonal relationships.

# 131. Philosophy of Language (3) II 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.

### 132. Philosophy of History (3) I

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.

### 133. Philosophy of Education (3) II

Prerequisite: Philosophy 1, 2 or 3.

Various philosophical viewpoints concerning education. The functions of education as conceived by major figures in the western philosophical tradition.

### 134. Philosophy of Literature (3)

Prerequisite: Six units of philosophy. Study of literature of philosophical significance, and of philosophical problems of literature.

135. Philosophy of Religion (3) I, II Prerequisite: Six units of philosophy. Philosophical examination of issues raised by the religious impulse in man.

### 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 Manimon, Moses Mendelssohn and Martin Buber.

## 137. Philosophy of Science (3) I

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.

## 141. History of Aesthetics (3) I

Prerequisite: Philosophy 1, 2 or 3. Major documents in the history of aesthetics.

142. Philosophy of Art (3) II

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.

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.

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

175. A Major Philosopher (3) I, II

Prerequisite: Philosophy 101.

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.

### 195. Selected Topics (3) I, II

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 195 and 295 applicable on a master's degree.

### 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.

199. Special Study (1-3) I, II Individual study. Maximum credit six units. Prerequisites: Twelve upper division units in philosophy and consent of instructor.

### Graduate Courses

201. Seminar in Ancient Philosophy (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 101. Directed research in a major author (e.g., Plato or Aristotle), or a school (e.g., the Pythagoreans or the Stoics), or a problem (e.g., causation or the state). Maximum credit six units applicable on a master's degree.

# 202. Seminar in Medieval Philosophy (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 102.

Directed research in a major author (e.g., Augustine or Aquinas), or a school (e.g., neo-Aristotelianism), or a problem (e.g., political philosophy or reason and authority). Maximum credit six units applicable on a master's degree.

## 203. Seminar in Modern Philosophy (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 103. Directed research in a major author (e.g., Hume or Kant), or a school (e.g., the continental rationalists or the British empiricists), or a problem (e.g., the nature of substance). Maximum credit six units applicable on a master's degree.

# 205. Seminar in Contemporary Philosophy (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 105. Directed research in a major author (e.g., Dewey or Wittgenstein), or a school (e.g., the pragmatists or the language analysts), or a problem (e.g., perception or personhood). Maximum credit six units applicable on a master's degree.

211. Seminar in Legal Philosophy (3) Prerequisite: Twelve upper division units in philosophy. Directed research in recurrent themes of philosophical significance in jurisprudential literature.

# 212. Seminar in Political Philosophy (3)

Prerequisite: Twelve upper division units in philosophy. Directed research in a major problem in political philosophy or the work of a major political philosopher.

# 221. Seminar in Deductive Logic (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 121.

A comparison of deductive systems in logic. Problems of definability, consistency and completeness. The role of logic in the foundations of mathematics.

223. Seminar in Epistemology (3) Prerequisite: Twelve upper division units in philosophy.

Basic problems concerning meaning, perception and knowledge.

225. Seminar in Metaphysics (3)

- Prerequisite: Twelve upper division units in philosophy.
- An inquiry into the search of significant qualities of reality.

228. Seminar in Ethics (3)

Prerequisite: Twelve upper division units in philosophy. Contemporary ethical issues. Critical analysis of the works of some leading theorists, such as Moore, Dewey, Stevenson and Toulmin.

### 231. Seminar in Semantics and Logical Theory (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 121 and 131. Contemporary issues in the foundations of logic and theories of language.

### 235. Seminar in Philosophy of Religion (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 135. A philosophical investigation of the nature of religious thought: its structure, growth and significance.

### 236. Seminar in Philosophy of Art (3)

Prerequisite: Twelve upper division units in philosophy. An analysis, criticism and comparative study of selected philosophies of art.

237. Seminar in Philosophy of Science (3)

Prerequisite: Twelve upper division units in philosophy including Philosophy 122 and 137. The methodology of the empirical sciences. The logical structure of science.

## 295. Seminar in Selected Topics (3)

Prerequisite: Twelve upper division units in philosophy.

Directed research in a major problem or movement in philosophy. Maximum credit six units applicable on a master's degree.

### 298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisites: Twelve upper division units in philosophy and consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# **Physical Education** In the College of Professional Studies

### Faculty

Emeritus: Schwob, Shannon, Sportsman, Tollefsen

- Professors: Andrus, Benton, Carter, Cullen, Fox, Governali, Kasch, Lockman, Murphy, Olsen, A., Olsen, L., Phillips, Schutte, Scott, Terry, Ziegenfuss
- Associate Professors: Barone, Broadbent, Cave, Franz, Friedman, Moore, Selder, Sucec, Wells (Chairman)

Assistant Professors: Bird, Gutowski, Hollyfield, Lamke, Landis, Quinn, Smith, Whitby, Wilhelm, Williamson, Willis Lecturers: Iverson, Zasueta

### 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. Major in physical education for the single subject teaching credential. Minor in physical education.

Minor in dance.

# **Physical Education Major**

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

All candidates for a degree in liberal arts and sciences must complete the requirements listed on page 60 of this catalog.

Preparation for the major. Biology 140; Physical Education 41, 75, 90; Psychology 1; Zoology 8. (17 units.)

Major. A minimum of 24 upper division units in physical education to include twelve units from Physical Education 160, 161, 170, 171, 175, 185 and 12 units selected with the approval of the adviser.

# **Physical Education Major**

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

All candidates for a degree in applied arts and sciences must complete the requirements listed on page 60 of this catalog.

# Physical Education / 309

### **Emphasis** in Dance

Preparation for the major. Physical Education 50A-50B, 52, 53, 54; one unit selected from Physical Education 33A-33B and 34A-34B; Zoology 8; and 16 units selected from Art 2A, 2B, 5, 50A, 50B, 61; Drama 5, 30, 31, 50; Music 10A, 35, 51; Speech Communication 11A. (28 units.)

Major. A minimum of 24 upper division units to include four units from Physical Education 145D, 145E or 154A; 145F, 150, 151, 152, 153, 155A, 156; and two units of upper division electives to be selected with the approval of the dance adviser. In addition to course requirements, the student must be a member of the Dance-Theater group and must participate in a minimum of four semesters of dance programs, preferably in the junior and senior years. Substitution for such participation will require departmental approval. This emphasis does not meet the teaching credential requirements.

# **Physical Education**

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in the section of this catalog on the School of Education.

This major may be used by students as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Biology 140; Physical Education 41, 75, 90; Psychology 1; Zoology 8. (17 units.) Physical Education 90 must be taken in first semester of declared physical education major. Competency tests must be passed in three team sports, three individual or dual sports, one dance, one gymnastics, one swimming, one physical fitness, one track and field (women), one combatives (men).

Major. A minimum of 35 upper division units to include Physical Education 160, 161, 170, 171, 175, 180, 185; two units from each of the following groups for a total of 14 units: Physical fitness (145A); team sports (145L-men; 141C, 145M or 145N-women); individual sports (145I-men; 145I or 145J-women); dance (women) 141B, 145D, 145E or 145F); coaching (men) (131A, 131B, 131C or 131D); and six units from physical education 122, 131, 141 or 145. A maximum of six additional units in physical education may be elected to count toward the A.B. degree.

A student must pass 11 competency tests listed above before admission to any practicum course.

# **Physical Education Minor**

The minor in physical education, planned in consultation with an adviser, consists of a minimum of 15 units in physical education, nine units of which must be in upper division courses.

## **Dance** Minor

The minor in dance consists of Physical Education 33A-33B, 34A-34B, 50A-50B, 53, 54; two units selected from Physical Education 150, 151, 152 or 155A, 156; and three upper division units to be selected from the areas of art, drama and music with the approval of the adviser in dance. (15 units.)

### **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. Physical Education 1A-39M are acceptable for general education credit.

1A. Physical Fitness and Figure Control (1)

2A-2B. Conditioning (1-1)

3A-3B. Jogging (1-1)

(Formerly numbered Physical Education 36A-36B.)

4A-4B. Weight training (1-1) (Formerly numbered Physical Education 2A-2B.)

### 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. (Formerly numbered Physical Education 38.)

8A-8B. Basketball (1-1) 9A-9B. Soccer (1-1) 10A-10B. Volleyball (1-1) 11A-11B. Softball (1-1) (Formerly included in Physical Education 6A-6B.) 12A-12B. Field Hockey (1-1) (Formerly included in Physical Education 6A-6B.) 13A-13B. Flag Football (1-1) (Formerly included in Physical Education 6A-6B.) 14A-14B. Wrestling (1-1) (Formerly numbered Physical Education 12A-12B.) 15A-15B. Track and Field (1-1) (Formerly numbered Physical Education 11A-11B.) 16A-16B. Golf (1-1) 17A-17B. Archery (1-1) 18A-18B. Tennis (1-1) 19A-19B. Bowling (1-1) 20A-20B. Badminton (1-1) 21A-21B. Handball (1-1) 22A-22B. Fencing (1-1) 23A-23B. Racquetball (1-1) (Formerly numbered Physical Education 36A-36B.) 24A-24B. Sailing (1-1) 25A-25B. Gymnastics (Men) (1-1) (Formerly numbered Physical Education 7A-7B.) 26A. Rhythmic Gymnastics (Women) (1) (Formerly numbered Physical Education 46.) 27A-27B. Apparatus Gymnastics (Women) (1-1) (Formerly numbered Physical Education 7A-7B.) 28A-28B. Ice Skating (1-1) (Formerly numbered Physical Education 36A-36B.) 29A-29B. Swimming (1-1) 30A-30B. Synchronized Swimming (1-1) 31. Life Saving (1) (Formerly numbered Physical Education 50.) 32A-32B. Ballroom Dance (1-1) 33A-33B. Folk and Square Dance (1-1) 34A-34B. Modern Dance (1-1) 35A-35B. Ballet (1-1) (Formerly numbered Physical Education 39.) 36A-36B. Jazz (1-1) (Formerly numbered Physical Education 36A-36B.) 38. Selected Activities (1) May be repeated with new activity for additional credit. See class schedule for semester offerings. 39. Women's and Coed Teams (1) (Formerly numbered Physical Education 36A-36B.) Maximum credit four units. A. Archery H. Softball B. Badminton I. Swimming C. Basketball Tennis D. Fencing K. Track and Field E. Field Hockey L. Volleyball F. Golf M. Other G. Gymnastics

### 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. (Formerly numbered Physical Education 53.)

## 45. Dance (2)

Four hours of activity.

Competency development in dance. Emphasis on skills, movements, facilities and organizational procedures in dance. (Formerly numbered Physical Education 73.)

### 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.

### 50A-50B. Advanced Modern Dance (1-1)

Two hours of activity.

Prerequisite: Physical Education 34B. Skill techniques. Compositional factors and devices. Materials of design, rhythm and

dynamics in group compositions. The use of percussion and various forms of accompaniment. (Formerly numbered Physical Education 48A-48B.)

52. Advanced Skill Techniques in Dance (1)

Two hours of activity.

Prerequisite: Consent of instructor. Progressively difficult dance techniques using several creative approaches. Emphasis on motivation, body design, rhythm and dynamics. (Formerly numbered Physical Education 54.)

53. Introduction to Dance (2)

Dance as an art form with emphasis on the development of contemporary trends; American dance personalities and their contributions. (Formerly numbered Physical Education 81.)

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. (Formerly numbered Physical Education 82.)

# 75. Sociocultural Foundations of Physical Activity (3)

Integrated approach to the understanding of the historical, philosophical and sociological forces shaping the development of physical education and sport.

# 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 course offerings.

Proficiency tests will be given in each area commonly taught in secondary physical education. Must be taken in first semester of declared physical education major.

### **Upper Division Courses**

## 120. Skin and Scuba Diving (2)

Four hours of activity. 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. (Formerly numbered Physical Education 123.)

# 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.

# 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. (Formerly numbered Physical Education 131.)

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. (Formerly numbered Physical Education 133.)

141. Practicum: Physical Education Activities for Elementary Schools (2)

Four hours of activity

Prerequisite: Physical Education 41.

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

Track and field activities for children

E. Gymnastic activities for children

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. (Formerly numbered Physical Education 177.) B. Track and Field (Men).

C. Track and Field; Softball (Women). (Formerly included in Physical Education 156.) D. Folk Dance. (Formerly included in Physical Education 151.) E. Square and Ballroom Dance. (Formerly included in Physical Education 151.)

F. Modern Dance. (Formerly numbered Physical Education 154.)

G. Gymnastics (Men). (Formerly numbered Physical Education 71.)

H. Gymnastics (Women). (Formerly numbered Physical Education 152.)

I. Tennis, Badminton, Racquetball. (Formerly included in Physical Education 155 and 176.)

Archery, Golf, Handball. (Formerly included in Physical Education 155 and 176.) K. Speedball, Softball, Touch Football (Men). (Formerly included in Physical Education 175.)

Volleyball, Basketball, Soccer (Men). (Formerly included in Physical Education 175.) L. M. Hockey, Soccer, Flag Football (Women). (Formerly included in Physical Education 156.)

N. Volleyball, Basketball (Women). (Formerly included in Physical Education 156.)

O. Combatives (Men). (Formerly numbered Physical Education 174.)

# 150. Dance Composition (Preclassic Forms) (3)

Two lectures and two hours of activity

Prerequisites: Physical Education 52 and 54.

Compositions based on a study of preclassic dance forms as a contribution to form in contemporary dance. Study of the music of the period. Critical evaluation of group and individual compositions. (Formerly numbered Physical Education 182A.)

151. Dance Composition (Modern Forms) (3)

Two lectures and two hours of activity.

Prerequisites: Physical Education 52 and 54.

Compositions related to contemporary art forms emphasizing the interaction of form and content in the creative idea. The temporal, spatial, dynamic and dramatic elements of choreography. (Formerly numbered Physical Education 182B.)

### 152. Workshop in Dance (1-2)

Choreographic techniques and skills with visiting master teachers; written report or project. Maximum credit four units. (Formerly numbered Physical Education 184.) 153. Dance Production (3)

Lecture-demonstration, recital and concert forms of dance programs. Presentation and staging of original solo and group compositions. (Formerly numbered Physical Education 183.)

154A-154B. Problems in Dance (2-2)

Prerequisite: Physical Education 50A.

Problems in ethnic or modern dance; history, anthropological basis, stagecraft, accompaniment, costuming. (Formerly numbered Physical Education 153A-153B.)

155A-155B. Choreography in Contemporary Dance (3-3) Two lectures and two hours of activity.

Prerequisite: Consent of instructor.

Experimentation in dance, relating contemporary theories to other art forms. Force and time-space relationships as factors of choreography. (Formerly numbered Physical Education 157A-157B.)

A. Production problems for large and small groups.

B. Production problems for trios, duos and solos.

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. (Formerly numbered Physical Education 181.)

### 160. Applied Anatomy and Kinesiology (3)

Prerequisites: Biology 140 and Zoology 8. Arthrology, syndesmology and myology, with special emphasis on movement analysis. Muscle groups and their functional relationships. Application of simple mechanical principles to movement analysis. (Formerly numbered Physical Education 167.)

161. Physiology of Exercise (3)

Prerequisites: Biology 140 and Zoology 8.

Effects of physical activities on the physiological functions of the body. (Formerly numbered Physical Education 168.)

### 162. Exercise Physiology Laboratory (1)

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Physical Education 161

Laboratory experiences in the application of exercises and the analysis of the results.

163. Biomechanics of Human Movement (2)

Prerequisite: Zoology 8.

Mechanical principles as applied to movement; analysis and application to selected motor skills. (Formerly numbered Physical Education 160.)

# 164. Kinesiology-Biomechanics Lab (1) Three hours of laboratory.

Prerequisites: Physical Education 160 and 163.

Experiments in application of kinesiology and biomechanics to human movement.

# 165. Prevention and Rehabilitation of Injuries to Athletes (2)

One lecture and three hours of laboratory

Prerequisites: Physical Education 160 and 161.

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. (Formerly numbered Physical Education 164.)

### 167. Adapted and Special Physical Education (2)

Prerequisites: Physical Education 160 and 161. Adaptation of programs for atypical and handicapped individuals, including prescribed

exercises, activities and evaluation. (Formerly numbered Physical Education 169.)

# 168. Adapted and Special Physical Education Laboratory (1-4)

Three hours of laboratory per unit. Prerequisites: Credit or concurrent registration in Physical Education 167.

Supervised laboratory of practicum experience in adapted or special physical education programs. Maximum credit four units.

## 170. Psychological Bases of Physical Education (3)

Prerequisite: Psychology 1.

Psychological parameters related to physical performance and the acquisition of motor skills. (Formerly numbered Physical Education 161.)

# 171. Physical Growth and Development (3)

Principles of human growth; performance as affected by developmental levels and individual differences in structure and function. (Formerly numbered Physical Education 163.)

175. Contemporary Sociocultural Aspects of Physical Activity (3)

Current sociological and cultural factors influencing the role and significance of sport and physical activity in modern American society.

### 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.

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. (Formerly numbered Physical Education 165.)

A. Interscholastic sports B. Extracurricular activities

### 185. Measurement and Evaluation in Physical Education (3)

Two hours of lecture 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. (Formerly numbered Physical Education 162.)

### 196. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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.

### 197. Workshop in Physical Education (1-2)

Methods, techniques and development of skills in such areas as aquatics, combatives, gymnastics, rhythms and dance, and individual and team sports. Designed for secondary school administrators, teachers, coaches, recreation and youth leaders. Maximum credit six units. (Formerly numbered Physical Education 178.)

### 198. Supervised Field Experience (1-3)

Prerequisite: Consent of department chairman.

Supervised practical experience in the area of physical education. (Formerly numbered Physical Education 179.)

199. Special Study (1-3)

Individual study. Maximum credit six units. Prerequisite: Consent of department chairman.

**Graduate Courses** 

### 200. Seminar (3)

An intensive study in advanced physical education, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

### 201. Curriculum in Physical Education (3)

Prerequisite: Major or minor in physical education, or equivalent.

Curricula in physical education. Special emphasis on curriculum construction and evaluation.

### 202. Administration of Physical Education in the Secondary Schools (3)

Prerequisite: Major or minor in physical education, or equivalent.

Topics include personnel problems, selection and maintenance of equipment and facilities, program organization and evaluation, budget and related items.

### 203. History of Physical Education (3)

Historical forces guiding the development of physical education from ancient to modern times.

### 204. Problems in Recreation (3)

(Same course as Recreation 204.)

Current problems facing the recreation profession, through a review of literature, discussion of trends, and observation of school and community situations. Analysis and evaluation of actual problems. Written reports required.

205. Current Trends and Issues in Physical Education (3) A critical appraisal of contemporary trends and issues. Investigation and analysis of professional literature.

206. Seminar in Competitive Athletics (3)

Prerequisite: Major or minor in physical education or recreation.

Knowledge and appreciation of the skills, techniques and teaching methods involved in the coaching of athletics; the study of possible solutions to problems associated with the program of competitive school athletics.

207. Advanced Kinesiology and Biomechanics (3)

Prerequisite: Physical Education 160.

Principles of mechanics applied to the analysis of human motion. Electromyography and cinematography as aids in analysis. Kinetic analysis of movement.

208. Advanced Physiology of Exercise (3)

Prerequisites: Physical Education 160 and 161.

Advanced aspects of the physiology of exercise. Effects of exercise on human beings in relation to health, longevity, morphology and performance.

209. Advanced Adapted Activities (3)

Prerequisite: Physical Education 167.

Postural divergencies, lack of physical development, physical handicaps and special programs. Individual exercise programs. Preventive and corrective exercises. Functional examinations and the physician's report. Ethical procedures and limitations.

211. Advanced Evaluation in Physical Education (3)

Prerequisite: Physical Education 185.

Methods, statistical techniques and apparatus used in testing physical performance. Sources of error, limitations on application and interpretation. Practice in construction and use of tests.

213. Problems in Physical Education (3)

Prerequisite: Major or minor in physical education. A study of selected areas of the physical education program.

215. Philosophical Foundations for Physical Education (3)

Major philosophies and their application in physical education.

220. Principles of Neuromuscular Tension (3)

Prerequisite: Physical Education 160.

Theories underlying the causes of muscular hypertension and the application of hypokinetic principles in daily living.

# 221. Exercise Electrocardiography (3)

Principles of resting and exercise electrocardiography with emphasis on ergometric methods and application to exercise physiology.

223. Advanced Exercise Physiology Laboratory (3)

Nine hours of laboratory.

Prerequisite: Physical Education 167.

A laboratory course designed to develop competency in respiratory metabolism pulmonary function, gas analysis, blood chemistry and ergometry. Experience in the application of exercise procedures with human subjects and analysis and interpretation of results.

### 227. Fitness of Adults (3)

One lecture and six hours of laboratory.

Prerequisite: Physical Education 167.

Evaluation, exercise prescription and training of adults. An understanding of the underlying hypokinetic diseases of adults and the procedures used in coping with the associated health problems of an automated environment.

261. Seminar in Motor Learning and Motor Performance (3)

Prerequisite: Physical Education 170.

A review of research in physical education and related fields plus experimental laboratory experiences in motor learning.

291. Research Techniques (3) Prerequisites: Major in physical education and Physical Education 185. Principles and methods of planning and carrying out the investigation of problems related to physical education. The development of research designs and practice in formulating and testing hypotheses as well as the interpretation of results. (Prerequisite to thesis.)

### 295. Seminar in Physical Education (3)

Prerequisites: Physical Education 291 and advancement to candidacy for the master's degree in physical education.

Selected subjects in physical education culminating in written projects. Limited to students following Plan B for the Master of Arts degree in Physical Education.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of department chairman.

Individual study. Maximum credit six units.

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy Preparation of a project or thesis for the master's degree.

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# **Physical Science** In the College of Sciences

### Faculty

Emeritus: Watson

Professors: Dessel, Merzbacher, Shull (Chairman)

Associate Professors: Feher, Ingmanson, Metzger

Assistant Professors: Dowler, Jackson, May, Phleger, Springer, Thompson, Wallace

### Offered by the Department

Master of Arts degree in physical sciences for teaching.

Teaching major in the physical sciences for the single subject teaching credential. See "School of Education" in the catalog section Professional Schools: Courses and Curricula. See "School of Education" also for description of an interdepartmental major in physical sciences.

Minor in physical science.

# **Physical Science Minor**

The minor in physical science consists of a minimum of 15 units selected from astronomy, chemistry, geology, physical science and physics with the approval of the department adviser. Nine of the 15 units must be in upper division courses, six units of which must be taken in physical science.

### Lower Division Courses

### 1. General Physical Science (4) I, II

Three lectures and three hours of laboratory.

Designed specifically to show why an understanding of science is essential for a complete liberal education. Topical emphasis varies with instructor. Satisfies general education requirements in physical science including laboratory. Not open to students with credit or concurrent registration in Physical Science 2A or 10A.

### 2A-2B. Principles of Physical Science (3-3) I, II

Prerequisite: Physical Science 1 or 2A is prerequisite to 2B.

The nature of the physical universe with emphasis on the whole field of physical science rather than on its separate division. Not open to students with credit or concurrent registration in Physical Science 1 or 10A. Physical Science 2A may be taken with Physical Science 3 for laboratory credit in natural science.

### 3. Experimental Methods in Physical Science (1) I, II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Physical Science 2A.

Methods in physical science as illustrated by the use of significant examples from the various disciplines. The technique of observation, measurement and discovery of relationships. Fulfills the general education laboratory requirement in the natural science area.

### 10A-10B. Structure and Concepts of Physical Science (4-4) I, II

Three lectures and three hours of laboratory.

Physical Science 10A is prerequisite to 10B. Emphasis on processes of inquiry which are characteristic of physical science. Approach is suited for people interested in science instruction at the elementary level. Not open to students with credit or concurrent registration in Physical Science 1 or 2A.

### 55. Technology and Human Values (3) II

Prerequisite: Physical Science 1.

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.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

110. Physical Oceanography (3) I, II

Prerequisites: Chemistry 1A, Mathematics 40, Physics 1A or 2A.

History and structure of the ocean basins; geochemistry and origins of sea water; dynamics of ocean currents, waves and tides, heat budget of the oceans.

# 120. Physical Science for Elementary Teachers (3) I, II, S

An integrated study of the physical sciences for teachers in order to provide a broad background of information, a consideration of current developments and an opportunity for individualized work. Enrollment limited to those in training for or engaged in teaching in the elementary schools.

# 130. Modern Physical Science (3) I, II

Prerequisite: At least one college-level course in the physical sciences or life sciences. Current topics in physical science. Emphasis on broad interdisciplinary subject areas directed toward extending general education in science related to contemporary issues raised by science and technology. Consult class schedule for topic of current semester. May be repeated with new content. Maximum credit six units.

### 135A-135B. IPS Physical Science (3-3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Introductory course work in astronomy, geology, physical science or physics, and chemistry. Physical Science 135A is prerequisite to 135B

Principles of physical science as presented in national curriculum study courses, particularly the IPS program of the Physical Science Study Committee.

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.

141. Electronics for Scientists (3) I, II, S

Two lectures and three hours of laboratory.

Primarily for science majors.

Electronic instrumentation used in the sciences; uses and limitations.

### 142. History of Science I (3) I, II

Prerequisites: Completion of minimum general education requirements in science and six units of history.

The growth and development of science from antiquity to the 15th century. Emphasis on man's cognitive reactions to his environment through the coalescence of the occult arts, empirical practices and rational thought associated with early scientific theory.

### 143. History of Science II (3) I, II

Prerequisite: Physical Science 142.

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.

150. Readings in Physical Science (3) I

Reading of selected materials with informal class discussion of topics. Emphasis on the historical background, the philosophical implications and the impact of science on thought and culture.

### 160. The Development of Scientific Thought (3) I, II

Prerequisites: Six units from astronomy, chemistry, geology, physical science, or physics; and Mathematics 21 or equivalent.

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.

### 162. The Origins of Life (3) II

Prerequisite: Completion of general education requirements in science, including Chemistry 1A or Physical Science 1 or 2A.

Theories of chemical evolution with emphasis on multidisciplinary aspects involving geology, geochemistry, cosmochemistry and molecular biology.

## 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.

# 196. Advanced Physical Science (1-3) I, II

Prerequisite: Consent of instructor. Selected topics in classical and modern physical science. May be repeated for additional credit with new subject matter for a total of six units.

### 199. Special Study (1-3) I, II

Prerequisite: Consent of instructor.

Individual study or laboratory work on a special problem in physical science selected by the student. Maximum credit six units.

### Graduate Courses

200. Seminar (2 or 3)

An intensive study in advanced physical science, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

210. Advanced Topics in Physical Science (3) I, II

Prerequisite: Undergraduate major or minor in one of the physical sciences. Selected topics in classical and modern physical science. Topics covered in a particular semester to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

261. General Relativity and Cosmology (3)

Prerequisites: Mathematics 119 and consent of instructor.

Introduction to General Relativity. Topics include: absolute differential calculus of Ricci and Livi-Civita, development of the ordinary and null geodesic equations, field equations, application to classical astronomical problems and high energy astrophysics.

298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a thesis or project in one of the physical sciences for the master's degree.

# **Physics** In the College of Sciences

### Faculty

Emeritus: Craig, Kalbfell, Moe, Terhune

Professors: Garrison, Morris, Nichols, Piserchio, Skolil, Smith, Snodgrass, Teasdale, Templin (Chairman), Wolf, Wolter

Associate Professors: Cottrell, Lilly, Rehfuss, Roeder Assistant Professors: Burnett, Solomon

### 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 physics with the A.B. degree in liberal arts and sciences.

Major in physics with the B.S. degree in applied arts and sciences.

Major in chemical 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.

## **Physics Major**

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

All candidates for a degree in liberal arts and sciences must complete the requirements listed on page 60 of this catalog.

To meet the foreign language requirement for graduation, students should choose French, German or Russian.

A minor in mathematics is required. It should include Mathematics 50, 51, 52, 118A-118B, and three units from Mathematics 121A, 150A, or 175. Mathematics 104 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 1A-1B or 10A-10B; Mathematics 50, 51, 52; Physics 4A-4B-4C. (35 units.)

Major. Twenty-seven upper division units in physics and mathematics to include Physics 100A-100B, 102A-102B, 103, 116 and 170; Mathematics 118A-118B. For preparation for graduate work in physics, the student should choose from Physics 106, 114, 151, 175, 180, 186, 190, 196, 198A, and 198B.

# **Physics Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Chemistry 1A-1B or 10A-10B; Mathematics 50, 51 and 52; Physics 4A-4B-4C. (35 units.)

Major. Thirty-nine upper division units in physics and mathematics to include Mathematics 118A-118B, Physics 100A-100B, 102A-102B, 103, 104, 116, 170, 198A-198B, and six units of electives. Courses are to be selected in consultation with the departmental adviser. Concentrations in the areas of applied physics, scientific instrumentation, nuclear physics, optics and teacher education are available in this degree.

# **Chemical Physics Major**

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

Preparation for the major. Chemistry 1A-1B or 10A-10B, 5, and 12: Mathematics 50, 51 and 52; Physics 4A-4B-4C. (43 units.)

Major. Thirty-nine upper division units to include Chemistry 110A-110B, 112, 127A and 155. Mathematics 118A; Physics 100A-100B, 102A-102B, 103, 116 and 190.

# **Physics Minor**

The minor in physics consists of a minimum of 15 units in physics, six units of which must be in upper division courses.

## Physics

### For the Single Subject Teaching Credential in Physical Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

The requirements for the single subject teaching credential in physical sciences which includes the area of physics are being revised. For further information consult the department.

### Lower Division Courses

Maximum credit 15 units for any combination of Physics 1A-1B, 2A-2B, 3A-3B, 4A-4B-4C. and 5.

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 1A is prerequisite to 1B. 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 1A is not open to students with credit in 2A or 4A; 1B not open to students with credit in 2B, 4B, or 4C.

### 2A-2B. General Physics (3-3) I. II

Prerequisites: Completion of high school physics. Physics 2A is prerequisite to 2B. Recommended: For Physics 2A, concurrent registration in 3A; for Physics 2B, concurrent registration in 3B.

This course is for students in those liberal arts and preprofessional courses not requiring physics with calculus. Physics 2A is not open to students with credit in 1A or 4A; 2B not open to students with credit in 1B, 4B, or 4C.

3A-3B. Physical Measurements (1-1) I, II

Three hours of laboratory

Prerequisite for 3A: Credit or concurrent registration in Physics 2A.

Prerequisite for 3B: Physics 3A and credit or concurrent registration in Physics 2B. A laboratory course to accompany Physics 2A-2B. Semester I: Properties of matter, mechanics, heat and sound. Semester II: Electricity, magnetism and light. Physics 3A is not open to students with credit in 1A or 4A; 3B not open to students with credit in 1B, 4B, or

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### 4A-4B-4C. Principles of Physics (4-4-4) I, II

Three hours of lecture and three hours of laboratory.

Prerequisites for 4A: Completion of high school physics or equivalent and credit or concurrent registration in Mathematics 50.

Prerequisites for 4B: Physics 4A with a grade of C or better and credit or concurrent registration in Mathematics 51.

Prerequisites for 4C: Physics 4B with a grade of C or better and credit or concurrent registration in Mathematics 52.

Certain students may, with consent of the Department, substitute credit in Mathematics 22 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.

### 4E. Principles of Physics for Engineers (4)

# Three lectures and three hours of laboratory.

Prerequisites: Completion of high school physics or equivalent and credit or concurrent registration in Engineering 50A.

Designed to prepare the engineering student for Physics 4C 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 4A or 4B.

### 5. Introductory Physics (4) I, II

Three lectures and three hours of laboratory.

Some of the more important phenomena and concepts in physics with practical illustrations and applications. Not open to students with credit for Physics 1A-1B, 2A-2B, or 4A-4B-4C

11. Special Topics in Physics (1 or 2) I, II

Prerequisite: Credit or concurrent registration in Physics 1B, 2B, or 4B; or credit in Physics &

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.

### 73. Introductory Electronics (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Physics 1B, or 2B and 3B, or 4B; and Mathematics 22.

Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 103.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

### 100A-100B. Classical Physics (3-3) I, II

Prerequisites: Physics 4C and credit or concurrent registration in Mathematics 118A. Semester I: Newtonian mechanics and wave motion. Semester II: Electrostatics and magnetostatics.

### 102A-102B. Modern Physics (3-3) I, II

Prerequisite: Physics 4C. Physics 102A is prerequisite to 102B.

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.

### 103. Basic Electronics (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Physics 1B, or 2B and 3B, or 4B; and Mathematics 22.

Modern electronic devices and their utilization in scientific instruments. Not open to students with credit in Physics 73.

### 104. Advanced Electronics (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Physics 73 or 103.

Conventional and operational amplifiers, oscillators, pulse and digital electronics, with emphasis on their use in the modern physics laboratory.

### 106. Optics (3) II

Prerequisites: Physics 1B, or 2B and 3B, or 4C; and a working knowledge of calculus. Reflection, refraction, dispersion, interference, diffraction, double refraction and polarization, with applications to optical instruments, wave propagation, radiation, spectra and the nature of light.

107. Optical Design (3)

Prerequisite: Physics 4C.

Ray tracing, aberrations, matrix methods, optical instrumentation.

111. Concepts in Modern Physics (3) I, II

Prerequisite: Physics 1B, 2B or 5.

Modern developments in physics for nonphysics majors, including relativity, introductory quantum theory, and atomic nuclear and solid state physics.

114. Acoustics (3) I

Prerequisites: Physics 100B and 116.

Wave motion and its application to the production, transmission and reception of sound. Development of acoustic circuits using electroacoustic analogs.

116. Advanced Physical Measurements (3)

One lecture and six hours of laboratory.

Prerequisites: Physics 4C and credit or concurrent registration in Physics 103.

A course stressing laboratory experiments and measurements chosen from the major areas of physics. (Formerly numbered Physics 120A.)

# 118. Nuclear Energy (2)

Prerequisite: Physics 1B, or 2B and 3B, or 4C, or 5.

Nuclear sources of energy, introduction to nuclear reactors, radiation problems associated with nuclear reactors and devices, plowshare, radioactivity in the environment.

121. Radiation Physics (3)

One lecture and six hours of laboratory. Prerequisite: Physics 1B, or 2B and 3B.

X-rays, radioactivity, interaction of radiation with matter, and methods of measurement. May not be used in the physics major.

### 122. Senior Physics Laboratory (2) I, II

Six hours of laboratory

Prerequisite: Physics 116.

Advanced experimental measurements in the fields of classical and modern physics, in one of the following areas: acoustics, nuclear physics, heat and thermodynamics, advanced electronics, electricity and magnetism, microwaves, solid state physics, and analog computers. Combinations of two areas in one semester may be taken with consent of the instructor. May be repeated with new content. Maximum credit four units.

### 123. Methods of Electronic Instrumentation (2)

Six hours of laboratory.

Prerequisite: Physics 1B, or 2B and 3B, or 4B.

Modern electronics instrumentation used in making physical measurements. May not be used in the physics major.

135A-135B. PSSC and PPC Physics (4-4) Three lectures and discussions and three hours of laboratory.

Prerequisite: Physics 1B, or 2B and 3B.

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.

148. Nuclear Physics Laboratory (3) II

One lecture and six hours of laboratory.

Prerequisite: Physics 116 or 121.

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.

### 151. Nuclear Physics (3) I, II Prerequisite: Physics 190.

Nuclear Phenomena, theory of the nucleus, cosmic rays, and high-energy reactions of particles.

154. Theory of Scientific Instrumentation (3) I

Prerequisites: Physics 73 or 103, and Mathematics 52.

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.

### 156. Digital Computers (3) I

Prerequisites: Mathematics 7 and 118B; Physics 73 or 103.

The binary number system; electronic and magnetic flip-flop circuits; memory devices; programming; complete computer systems. Auxiliary equipment for inserting information and reading out results rapidly. Typical applications and limitations.

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### 163. Electronic Instrumentation (2) I

Six hours of laboratory.

Prerequisites: Physics 104 and credit or concurrent enrollment in Physics 154.

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.

164. Techniques of Scientific Instrumentation (3) II

One lecture and six hours of laboratory.

Prerequisite: Physics 4C.

Nuclear and optical instrumentation, low temperature and high vacuum techniques, magnet technology.

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

Refer to Honors Program.

170. Electromagnetic Theory (3) I, II

Prerequisites: Mathematics 118B, Physics 100B and 102B.

Electrostatics and magnetostatics treated by vector methods; Maxwell's equations. Electromagnetic induction, radiation and wave propagation.

### 173. Physical Electronics (3) I

Prerequisites: Mathematics 118B, Physics 100B and 102B.

Conductors; Fermi model; thermionic, photoelectric and field emission; contact potentials; space charge. Semiconductors, linear equivalent, circuits, elements of frequency and time domain analysis, linear feedback circuits.

### 175. Advanced Mechanics (3) I

Prerequisites: Mathematics 118B and Physics 100B.

Special theory of relativity, generalized coordinates, Lagrangian and Hamiltonian formulations, normal coordinates, theory of vibrations and introduction to continuum mechanics.

### 180. Solid State Physics (3) II

Prerequisites: Mathematics 118B, Physics 100B and 102B.

Elastic, thermal, electric, magnetic and optical properties of solids. Introduction to the energy band theory of solids, with applications to dielectrics, semiconductors and metals. **186.** Modern Optics (3) I

Prerequisites: Mathematics 118B, Physics 100B and 102B.

Optics of solids, coherence and partial coherence theory, Fourier optics, holography.

### 187. Modern Optics Laboratory (2) I, II

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Physics 186.

Experiments in various fields of modern optics such as holography, Fourier spectroscopy, spatial filtering, nonlinear effects and coherence measurements.

### 190. Introductory Quantum Mechanics (3) I, II

Prerequisites: Mathematics 118B, Physics 100B and 102B.

The physical basis of the quantum theory and its mathematical formulation in terms of Schroedinger's wave equation.

193. Minicomputer Interfacing (3) II

Two lectures and three hours of laboratory.

Prerequisite: Physics 104.

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.

### 196. Advanced Physics (1-3) I, II

Prerequisite: Consent of instructor.

Selected topics in classical and modern physics. May be repeated with the approval of the instructor. Maximum credit six units.

### 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. 198B. Senior Research (2) I, II

Two discussion periods and four additional hours per week to be arranged. Prerequisite: Physics 198A with grade of C or better.

Laboratory work, progress reports, oral and written final reports.

## 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.

### Graduate Courses

200. Seminar (1-3)

Prerequisite: Consent of instructor.

An intensive study in advanced physics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

205. Theoretical Mechanics (3)

Prerequisite: Physics 175.

Mechanics utilizing vector and tensor methods. Study of the motion of rigid bodies, vibration, coupled circuits. Lagrange's and Hamilton's equations. Principle of least action. 210A-210B. Mathematics of Physics (3-3)

Prerequisite: Mathematics 118B. Physics 210A is prerequisite to 210B.

Topics from matrix theory, vector and tensor analysis, orthogonal function theory, calculus of variations and probability theory with particular emphasis on applications to physical theory.

214. Advanced Acoustics (2)

Prerequisite: Physics 114.

The acoustic wave equation in two and three dimensions. Propagation of sound in bounded media and enclosures. Radiation and scattering. Electrical-mechanical-acoustical elements and circuits.

### 219. Statistical Mechanics (3)

Prerequisites: Physics 175 and 190.

Classical and quantum statistics, kinetic theory, low-pressure phenomena, Boltzmann transport equation, irreversible processes.

220. Radiation Physics (2)

Prerequisite: Physics 148.

Topics in nuclear radiation phenomena, including interaction of radiation with matter; radiation detectors.

221. Radiological Physics (2)

One lecture and three hours of laboratory.

Prerequisite: Physics 148.

Topics and problems in radiological physics.

222. Health Physics (2)

One lecture and three hours of laboratory.

Prerequisite: Physics 148. Topics and problems in health physics.

### 231. History of Physics (2)

Prerequisite: Bachelor's degree in physics or chemistry.

Lectures and readings in the history of physics with emphasis on the history of classical physics and the subsequent development of the quantum theory.

232. Concepts in Relativity (2)

Prerequisites: Physics 135A and credit or concurrent registration in Physics 135B. The development of the concepts of relative motion from Einstein's assumptions and from experimental results. Designed for physics teachers.

### 248. Advanced Nuclear Physics Laboratory (3)

One lecture and six hours of laboratory.

Prerequisite: Physics 148.

Experimental work involving subcritical reactor assembly, neutron generator, whole-body counter, etc.

### 251. Nuclear Physics (3)

Prerequisites: Physics 151 and 175.

Theory of nuclear forces, nuclear reactions, interaction of radiation with matter, radioactivity, nuclear structure and high energy physics.

270A-270B. Electromagnetic Theory (3-3)

Prerequisite: Physics 170. Physics 270A is prerequisite to 270B.

Boundary value problems; time varying electric and magnetic fields; propagation of radiation; antennas, wave guides.

# 275A-275B. Quantum Mechanics (3-3)

Prerequisites: Physics 151 and 175. Physics 275A is prerequisite to 275B. Quantum theory of radiation, molecular and nuclear systems. Approximation methods.

### Physics / 323

# 324 / Political Science

### 280. Theory of the Solid State (3)

Prerequisites: Physics 175, 180 and 190. The band theory of solids, with applications to the electrical and optical properties of dielectrics, semiconductors and metals.

### 286. Advanced Optics (3)

Prerequisite: Physics 186.

Selected topics in advanced optics such as rigorous diffraction theory, optical spectra, lasers, nonlinear optics and applications of Fourier analysis to optical systems and information processing.

### 297. Research (1-3) Cr/NC

Prerequisite: Consent of department chairman.

Research in one of the fields of physics. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3) Cr/NC Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis in physics for the master's degree.

# **Political Science**

# In the College of Arts and Letters

### Faculty

**Emeritus:** Leiffer Professors: Andrain (Chairman), Crain, Feierabend, Generales, Gripp, Janssen, Johns, Kahng, Miles, Nesvold, Padgett

Associate Professors: Conniff, Cutter, Funston, Hobbs, Lewin, Schultze, Terrell Assistant Professors: Anderson, Fairlie, Keiser, Loveman, Soule Lecturers: Aboud, Fisher, Newton

### Offered by the Department

Master of Arts degree in political science.

Major in political science with the A.B. degree in liberal arts and sciences. Minor in political science.

# **Political Science Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Students majoring in political science must complete a minor in another field to be approved by the chairman of the major department.

Preparation for the major. Political Science 1, 2, 3 and three units of either statistics or logic. (12 units.)

Major. A minimum of 24 upper division units to include (a) three units in Political Science 128 or 197, 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 II.

Group I: Research Methods. Courses numbered 100 to 104.

Group II: Political Theory. Courses numbered 105 to 114.

Group III: Politics. Courses numbered 115 to 134.

Group IV: Public Law. Courses numbered 135 to 139. Group V: International Relations. Courses numbered 165 to 179.

Group VI: Comparative Government. Courses numbered 180 to 195.

# **Political Science Minor**

The minor in political science consists of a minimum of 15 units of political science, to include Political Science 1, and 2 or 3, and nine units in upper division courses.

# Political Science / 325

### Lower Division Courses

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 1 and 2 will meet all requirements in American Institutions.

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 1 and 2 will meet all requirements in American Institutions. Political Science 2 will meet the requirements in U.S. Constitution and California government.

### 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.

Elementary Statistics for Political Science (3)

Prerequisites: Political Science 1 and 2, and Mathematics 3 or gualification 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.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

### Research Methods (Group I)

100A-100B. Research Methods in Political Science (3-3) I. II

Prerequisite: Political Science 4. Political Science 100A is prerequisite to 100B. 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.

### Political Theory (Group II)

105. American Political Thought (3) I, II

The development of American ideas concerning political authority from the period of colonial foundation to the present time.

### 106A-106B. Socialist Political Thought I, II

Prerequisites: Political Science 1 or 2, and 111B or 112.

Semester I: Socialist thought from an historical perspective. Semester II: Selected topics in socialist thought.

### 110. Politics and the Arts (3) I, II

Prerequisites: Political Science 1 and 2.

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 II.

# 111A-111B. Theory of the State (3-3)

Prerequisite: Political Science 111A is prerequisite to 111B.

The nature of the state, its organization and activities, and its relation to the individual and other states.

### 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.

113. The Theory of Political Inquiry (3) Prerequisites: Political Science 1, 2 and 3.

Philosophical bases of science with reference to political science. Concepts, concept formation, theory building and verification.

## 114. Problems in Political Theory (3)

Prerequisite: Six upper division units in political theory.

Research methods in political theory; intensive development of selected issues.

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### Politics (Group III)

### 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 105, 117 or 118, will also meet requirements in American history, institutions and ideals. Not open to students with credit in Political Science 2.

### 116. American National Government (3) I, II

Prerequisite: Political Science 2 or 115, or History 17A-17B.

An intensive examination of the primary institutions of the national government. Critical analysis of changing aspects of traditional relationships among the institutions of president, congress and the judiciary.

# 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.

### 118. Urban Politics (3)

### Prerequisite: Political Science 1 or 2.

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. (Formerly numbered and entitled Political Science 148, Government and Politics of Metropolitan Areas.)

### 119. Community Political Behavior (3)

### Prerequisite: Political Science 1 or 2

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. (Formerly numbered Political Science 150.)

### 120. Political Parties (3) I, II

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.

### 121. Political Behavior (3) I, II

Prerequisites: Political Science 4.

Social and attitudinal variables in political behavior. Quantitative research data as used in electoral studies. (Formerly numbered Political Science 124.)

### 122. Political Communication (3) I, II

Prerequisite: Political Science 2.

Communication as a political process; the effects of political communications on individuals and groups.

### 123-S. Contemporary American Politics (3) S

A consideration of a selected group of current major political problems in terms of their possible future implications and of their relationship to established American democratic principles and ideals.

### 124. The American Presidency (3) I, II

Prerequisites: Political Science 1 and 2.

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.

### 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.

## 126. Political Groups and Movements (3) I, II

Prerequisite: Political Science 1 or 2.

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.

### 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.

129. The Politics of Bureaucracy (3) I, II

Prerequisites: Political Science 1 and 2.

An analysis of the bureaucracy as an actor in the political system.

130. Government and Public Policy (3)

Prerequisite: Political Science 2.

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. (Formerly numbered Political Science 147.)

# 131. Special Problems in American Politics (3) I, II

Prerequisites: Political Science 1 and 2 and three upper division units within Group III. Intensive exploration of selected issues in the field of American politics.

132. Minority Political Thought and Politics in the United States (3) I, II

Political attitudes, behavior and thought of selected minority groups.

133. Advanced Field Research (3) I, II

Prerequisites: Consent of instructor and Political Science 130 or previous experience in field research.

Students will design and organize field research projects.

### Public Law (Group IV)

# 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.

## 136. Constitutional Government (3) I, II

Prerequisites: Political Science 1 and 2.

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.

137. Special Problems in Public Law (3) I, II

Prerequisites: Political Science 1 and 2, and three upper division units within Group IV. Intensive exploration of selected issues in the field of constitutional law.

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.

139A-139B. American Constitutional Law (3-3)

Prerequisite: Political Science 139A is prerequisite to 139B.

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.

# International Relations (Group V)

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.

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

168-S. Institute on World Affairs (3) S Contemporary problems in international relations. May be repeated once for course credit

with permission of the instructor.

170A-170B. International Relations (3-3) An historical and analytical consideration of the basic factors-historic, geographic, economic, ideologic and strategic-which underlie and condition the modern conflict between the "sovereign state" and the "community of nations." Semester I: Origins and development through the nineteenth century. Semester II: Twentieth century experimentation and conflict.

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# 171. The Conduct of American Foreign Relations (3) I

The legal, administrative and political organizations by which American foreign policies are formulated and implemented.

# 172. International Organization (3) I

The organization by which the international community seeks to provide for the exercise of legislative, administrative and judicial functions on the international level: diplomatic and consular corps; conferences; administration through commissions and unions; amicable procedures for settlement of disputes; the League of Nations-United Nations experiment.

# 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.

## 174. National Security Policy (3)

Objectives, instruments and consequences of national security policy.

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.

# 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.

177. Comparative Foreign Policies (3)

Prerequisite: Six units of political science.

Comparison of foreign policies of nations in various regional, socioeconomic and ideological areas.

178. Special Problems in International Politics (3) I, II

Prerequisites: Political Science 1, 2 and three upper division units within Group V. Intensive exploration of selected issues in the field of international politics.

# Comparative Government (Group VI)

180. Government of England (3) II The structure and functioning of the English parliamentary system with emphasis on present-day political principles and parties.

# 181. Government of the Soviet Union (3) I

Theory and practice of government in the Soviet Union, with some attention to foreign affairs.

### 182. Political Violence (3)

Prerequisite: Political Science 1, 2 or 3.

Underlying conditions, expressions and consequences of violence within political systems.

184. The Mexican Political System (3)

Prerequisite: Political Science 1 or 3. Principal factors in Mexican governmental decision making. Ideology, political groups, tactics of leaders and governmental structure.

185. Governments of Continental Europe (3) I, II

The political systems of countries of western continental Europe.

186. Comparative Communist Governments (3) I, II

The interrelations between the theory and practice of modern communism as found in representative communist systems.

187. Governments and Politics of the Far East (3)

The internal political structure and foreign policies of China, Japan and Korea.

188. Governments and Politics of the African States (3) I Domestic and international politics of specific African states.

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.

# 190. Comparative Political Systems (3) I, II

Prerequisite: Political Science 3.

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.

191. Governments and Politics of the Developing Areas (3) I, II

Prerequisite: Political Science 1 or 3.

Internal political systems, governmental structures and the foreign policies of developing nations

# 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.

### 193. Proseminar in Cross-National Studies (3)

Prerequisites: Political Science 3 and 100A.

Cross-national analysis of institutional norms, attitudes and behavior in relation to government; factors which determine patterns and styles of political participation in comtemporary societies.

194. Political Change in Latin America (3) Prerequisite: Political Science 1 or 3.

General pattern of politics and political development in Latin America with an emphasis on those features which condition domestic and foreign policy making.

# 195. Political Systems of Latin America (3)

# Prerequisite: Political Science 194.

- Domestic and international politics of selected Latin American states.
- 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.

197. Investigation and Report (3) I, II

- Analysis of special topics. Admission by permission of instructor.
- 198. Special Problems in Comparative Politics (3) I, II Prerequisites: Political Science 1, 2, 3 and three upper division units within Group VI. Intensive exploration of selected issues in the field of comparative politics.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisites: Twelve upper division units in political science and consent of the instructor.

## **Graduate** Courses

# 200. Seminar in the Scope and Method of Political Science (3)

The discipline of political science and systematic training in its methodology. Required of all applicants for advanced degrees in political science.

- 210. Seminar in Political Theory (3) Maximum credit six units applicable on a master's degree.
- 215. Seminar in American National Government (3)
- Maximum credit six units applicable on a master's degree.

# 220. Seminar in Politics (3)

- Prerequisite: Six upper division units in political science, three units of which must come from Political Science courses 115 through 134.
- Process by which individuals and groups make demands upon political decision makers; emphasis on the styles, structures, channels and consequences of interest articulation. Maximum credit six units applicable on a master's degree.

- 221. Seminar in Political Participation (3) Prerequisite: Six upper division units in political science, three units of which must be from
- Political Science courses 115 through 134. American political culture and subculture groupings as related to various dimensions of

political behavior.

225. Seminar in the Legislative Process (3)

Prerequisite: Six upper division units in political science. Legislative institutions and processes. Emphasis on U.S., national, state and local

legislatures.

226. Seminar in Political Psychology (3)

Prerequisites: Six units selected from Psychology 110, 112, 145; Political Science 100A-100B,

Psychological factors of the individual's political behavior; psychological theory as it applies 121, 122, 190. to political variables such as: ideology, conflict, consensus and participation.

230. Seminar in Public Law (3) Maximum credit six units applicable on a master's degree.

Selected problems of state and local government and intergovernmental relations. Maximum credit six units applicable on a master's degree.

# 330 / Political Science

# 255. Seminar in Metropolitan Government and Politics (3)

Prerequisite: Political Science 117 or 118 or 119. Government and politics in the world's major metropolitan areas. Maximum credit six units applicable on a master's degree.

270. Seminar in International Relations (3)

Maximum credit six units applicable on a master's degree.

272. Seminar in International Organization (3)

Prerequisite: Political Science 172.

Analysis of selected problems of international organization with special reference to those of the United Nations. Oral and written reports.

# 275. Seminar in Theories of International Relations (3)

Prerequisite: Political Science 170A or 170B.

Theoretical concepts used in the study of international political systems. Maximum credit six units applicable on a master's degree.

# 280. Seminar in General Comparative Political Systems (3)

Prerequisite: Political Science 190 or 191, and three additional upper division units in political science.

The field of comparative politics, including historical developments, major theoretical approaches, substantive concerns, uses and limitations of the comparative method, methodological innovations in study of foreign political systems.

## 281. Seminar in Western Political Systems (3)

Prerequisite: Six upper division units in political science. Comparative study of European and other modern political systems. Conditions responsible for the attainment and maintenance of democratic government. The relationship between social modernity and the functioning of Western democratic political institutions.

# 282. Seminar in the Political Systems of the Developing Nations (3)

Prerequisite: Six upper division units in political science.

Theoretical analysis of political development, modernization and industrialization in the emerging nations. Search for valid generalizations about the non-Western political process. Political trends and developments in the developing nations.

# 283. Seminar in Latin American Political Systems (3)

Prerequisite: Political Science 190 or 191, and three additional upper division units in political science.

Political developments in selected Latin American nations, with an emphasis on the Mexican political system.

## 284. Seminar in Communist Political Systems (3)

# Prerequisite: Six upper division units in political science.

The differences and similarities among Communist nations in Europe and Asia, with particular reference to instruments of power and ideology. A comparison of Communist ruling techniques and processes.

### 290. Bibliography (1)

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

### 291. Problem Analysis (3)

Analytical treatment of selected problems in political science. Review of methods for investigation and reporting of data. Consideration of problems in preparation of project or thesis.

### 297. Research in Political Science (3) Cr/NC

Prerequisite: Consent of the department chairman.

Research in political theory, political parties, comparative government, international relations, public law or American government.

### 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

# Portuguese

In the College of Arts and Letters

### Faculty Assistant Professor: Windsor

Offered by the Department of Spanish and Portuguese Languages and Literatures

Minor in Portuguese.

- Courses in Portuguese.
- Major work is not offered.

### **Portuguese Minor**

The minor in Portuguese consists of a minimum of 15 units in Portuguese, six units of which must be in upper division courses.

## 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 1; three years the equivalent of Portuguese 2; and four years the equivalent of Portuguese 3. 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.

# 1. Elementary (4)

Four lectures and one hour of laboratory. Pronunciation, oral practice, reading on Luso-Brazilian culture and civilization, essentials

of grammar.

2. Elementary (4) Four lectures and one hour of laboratory. Prerequisite: Portuguese 1. Continuation of Portuguese 1.

3. Intermediate (4)

A practical application of the fundamental principles of grammar. Reading in Portuguese of cultural material, short stories, novels or plays; oral practice.

4. Intermediate (4)

- Prerequisite: Portuguese 3. Continuation of Portuguese 3.
- 10. Conversation (2)

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays.

- 11. Conversation (2) Prerequisite: Portuguese 10.

Continuation of Portuguese 10.

Refer to the catalog statement on Experimental Topics on page 106. 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**

101A-101B. Advanced Oral and Written Composition (3-3)

Oral and written composition in Portuguese, based on models from modern Portuguese

and Brazilian literature.

A study of important movements, authors and works in the literature of Portugal from its 134. Portuguese Literature (3)

# beginnings to the present.

A study of the important movements, authors and works of the literature of Brazil from 135. Brazilian Literature (3)

# the colonial period to modern times.

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185. Selected Studies (3) Topics in Luso-Brazilian language, literature, culture and linguistics.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

# Psychology In the College of Sciences

### Faculty

Emeritus: Carlson, Kidwell, McCollom, Peiffer, Steinmetz, Treat, Voeks

Professors: Alf, Dicken, Feierabend, Gallo, Grossberg, Harari, Harrison, Hillix, Hunrichs, Kaplan, Karen, Kass, Kinnon, Koppman, Leckart, Leukel, Levine, Linton, McDonald, O'Day, Parker, Penn (Chairman), Radlow, Sattler, Schulte, Segal, Sheposh, Stevens

Associate Professors: Bryson, J., Franzini, Graf, Graham, Hornbeck, Lynn, Psomas, Rodin, Sand, Smith, Yaremko

Assistant Professors: DeFran, Jacobson, Litrownik, Manese, McCordick, Mollenauer, Plotnik, Price, Spinetta

Lecturers: Borges, Bryson, R., Buchanan, Chase, Eisen, Hillyard, Johnson, Scollay

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.

Major in psychology with the A.B. degree in applied arts and sciences for students admitted to Secondary Teacher Education.

Minor in psychology.

# **Psychology Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major. Two plans are provided for the major in psychology: Plan A for those students who wish to extend their liberal arts education in the field of psychology; and Plan B for those students expecting to pursue the study of psychology beyond the A.B. degree.

### Plan A

Plan A is for a nonprofessional major in psychology and is designed to provide the student with a greater understanding of human behavior as the emphasis in his liberal arts education. The recommended pattern of courses for this program is not designed to facilitate graduate and professional study in psychology.

Preparation for the major. Psychology 1, 40 and 50. (Nine units.) Recommended courses in related fields: Six units in biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

Major. A minimum of 24 upper division units in psychology to include Psychology 106, 131, 145, and 150. 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 159, 160; Economics 102; and courses in home economics.

### Plan R

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 1, 40, 50, and 70. (12 units.) Recommended courses in related fields: six units in biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

Major. A minimum of 24 upper division units in psychology to include Psychology 105, 110, 150, and one of the following: 111, 112, 113, 114, 115, 116, 117, or 118; and ten units selected from courses in consultation with the departmental adviser. Psychology 167A-167B may be taken instead of Psychology 70 and 110.

# **Psychology** Minor

The minor in psychology consists of a minimum of 15 units in psychology, nine units of which must be in upper division courses.

Approved Courses for Liberal Studies Majors (Group B).

Lower Division Courses: Psychology 1, 10, 40, and 50. Upper Division Courses: Psychology 106, 109, 131, 145, and 150.

# Lower Division Courses

### 1. Introductory Psychology (3) I, II

Facts, principles, and concepts which are basic to understanding human behavior.

### 10. The Evaluation of Psychological Literature (3) I, II

Designed to increase the nonpsychologist's ability to evaluate psychological and quasi-psychological writings. Topics include methods of generating information, concept of controlled observations, interpretation of data, pitfalls in decision making and aids to critical thinking. Practical experience in evaluation will be obtained through the criticism of current articles and other activities.

12. Psychology of Individual Adjustment (3) I, II Cr/NC

Prerequisite: Psychology 1.

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.

40. Principles of Learning and Perception (3) I, II

Prerequisite: Psychology 1.

The nature of psychological inquiry. Emphasis on principles and basic experimental data of learning and perception.

50. Introduction to Physiological Psychology (3) I, II

Prerequisite: Psychology 1.

Physiological mechanisms underlying the psychological phenomena of sensation, perception, emotion, motivation, learning and psychosomatic disorders.

70. Statistical Methods in Psychology (3) I, II Prerequisites: Psychology 1, and Mathematics 3 or qualification on the mathematics placement examination.

Quantitative methods in psychology. Measures of central tendency and variability, graphic methods and percentiles, linear correlation, applications of the normal probability curve, chi-square, and an introduction to statistical inference. Not open to students with credit in Psychology 167A-167B.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

100. Selected Topics in Psychology (1-3) Cr/NC

Prerequisite: Six units of psychology.

An intensive study in specific areas of psychology, topic to be announced in the class schedule.

105. Psychological Testing and Measurement (3) I, II Prerequisite: Psychology 70, 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.

# 106. Developmental Psychology (3) I, II

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 Education 111 and Family Studies and Consumer Sciences 70.

107. Psychology of Later Maturity (3) II

The psychological, physiological, and sociological factors influencing behavior in the later

years of life.

108. Advanced Developmental Psychology (3) I, II

Prerequisite: Psychology 106. Selected topics in the areas of infancy, childhood and adolescence.

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### 109. Mental Deficiency (3) I, II

Prerequisite: One of the following: Psychology 106, Education 110, 112, 113, or equivalents. The nature and causes of mental retardation, including the psychological effects of brain

injury. Characteristics of the mentally defective.

110. Introduction to Experimental Psychology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Psychology 40 and 70.

Understanding of experimental design, quantitative methods, and experimental reports as they are applied to all areas of psychology. Not open to students with credit in Psychology 167A-167B

111. Experimental Psychology: Perception (4)

Two lectures and six hours of laboratory.

Prerequisite: Psychology 110.

Experimental literature, assigned and original laboratory projects in the field of perception.

112. Experimental Psychology: Social (4) I, II

Two lectures and six hours of laboratory. Prerequisite: Psychology 110.

Experimental literature, assigned and original laboratory projects in the field of social psychology.

113. Experimental Psychology: Physiological (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 50 or 142 or six units of biology; and Psychology 110.

Experimental literature, assigned and original laboratory projects in the field of physiological psychology. Surgical and histological techniques necessary to research in brain mechanisms and behavior; includes basic electronics for biological scientists.

### 114. Experimental Psychology: Comparative (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Psychology 110.

Experimental literature, assigned and original laboratory projects in the field of comparative psychology.

115. Experimental Psychology: Personality and Clinical (4) I. II

Two lectures and six hours of laboratory.

Prerequisites: Psychology 110 and 150.

Experimental and theoretical literature, assigned and original laboratory projects in the field of personality and clinical psychology.

116. Experimental Psychology: Learning (4)

Two lectures and six hours of laboratory. Prerequisite: Psychology 110.

Experimental literature, assigned and original laboratory projects in the field of learning.

117. Experimental Psychology: Primate Behavior (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Psychology 110.

Experimental literature, assigned and original observational and experimental projects in the field of primate learning and behavior.

118. Experimental Psychology: Child Development (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Psychology 106 and 110.

Methods, techniques and principles used in the scientific study of child behavior.

120. Consumer Psychology (3) I, II

Prerequisite: Six units of psychology.

A review of the research literature and methods relevant to the individual as a consumer in our society. Attitudes, values, and decision-making abilities of people when functioning as consumers.

121. Personnel and Industrial Psychology (3) I, II

Prerequisites: Psychology 1, and 70 or statistics in another field.

Psychological principles applied to industrial problems of selection, placement and training.

122. Public Opinion Measurement (3) I

(Same course as Journalism 122.)

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.

# 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.

124. Engineering Psychology (3) I, II Prerequisite: Psychology 1.

Psychological problems of man-machine-environment systems. Visual, auditory, and other sensory factors involved in the interrelations between man and machines and the environment. Survey of origin and basic data of engineering psychology.

125. Human Factors Psychology (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Psychology 1 and consent of instructor.

Experimental techniques and procedures in the application of synthesis of behavioral criteria to the design, development, operation and maintenance of man-machineenvironmental systems. Government and industry job requirements, routines and practices.

### 131. Psychology of Personality (3) I, II

Prerequisite: Six units of psychology.

Principles of personality functioning and adaptation.

133. Principles of Personnel Interviewing (3)

Prerequisite: Psychology 1.

Psychological factors in interviewing; interviewing techniques. Supervised practice in interviewing for purposes of personnel selection, appraisal and development.

### 141. Neural Bases of Behavior (4) I. II

Two lectures and six hours of laboratory.

Prerequisites: Psychology 50 or six units in the biological sciences.

Elements of neurology and psychobiology with emphasis on sensory, central, and motor mechanisms.

## 142. Physiological Psychology (3) I, II

Prerequisites: Psychology 40 and 50 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.

145. Social Psychology (3) I, II

Prerequisite: Psychology 1.

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 140.

146. Advanced Topics in Social Psychology (3)

Prerequisites: Psychology 40 and 145.

An intensive exploration of selected areas within social psychology. May be repeated with new content. Maximum credit six units.

147. Psychology of Contemporary Social Problems (3)

Prerequisite: Psychology 1.

Discussion of social issues and problems of importance to the contemporary world, from the point of view of psychological theory, method and knowledge.

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.

151. Introduction to Clinical Psychology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Psychology 105 and 150.

History and current status of the profession; professional ethics and interprofessional concerns; clinical assessment and prediction; theory and practice of behavior change.

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 131 or 178, and 150.

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 233 or Education 233.

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# 153. Advanced Abnormal Psychology (3)

Prerequisite: Psychology 150.

An intensive study and evaluation of research methodology and current literature concerning the neuroses, psychoses, aphasias, ataxia, mental defect, and psychopharmacology.

155. Psychology of Human Sexual Behavior (3)

Prerequisites: Psychology 106 and 150.

Evaluation of behavioral and physiological data of normal, aberrant, and dysfunctional human sexual behavior, including description of available treatment methods.

166. Honors Course (1-3) I, II Cr/NC

Refer to Honors Program.

167A-167B. Statistical Methods and Experimental Psychology (4-4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 40 and mathematical aptitude examination. (See Honors Program.)

Integrated approach to the understanding of statistical methods, experimental design and the writing of experimental reports as applied to all areas of psychology. Not open to students with credit in Psychology 70 and 110.

170. Advanced Statistics (3) I, II

Prerequisite: Psychology 70.

A further study of quantitative methods in psychology with particular emphasis on methods of correlation, chi-square, and contingency, and an introduction to the analysis of variance.

171. Intermediate Correlational Analysis (3)

Prerequisite: Psychology 70.

Quantitative methods in psychology with emphasis on methods of correlation, multiple correlation, partial correlation, and factor analysis.

174. Theories of Perception (3) I, II

Prerequisite: Psychology 110. Study of research and theory in the areas of sensation, perception, and attention.

175. Theories of Learning (3) I, II

Prerequisites: Psychology 40 and 70. The facts, principles, and major theories of learning.

177. History of Psychology (3) I, II

Limited to psychology majors with senior standing. The historical background of modern psychology.

178. Theories of Personality (3) I, II

Prerequisites: Major in psychology and six upper division units in psychology. Representative personality theories and supporting evidence.

179. Philosophical Issues in Psychology (3) II

Prerequisite: Twelve units of psychology. Modern empiricism and the philosophy of science as related to issues in contemporary

psychology

### 180-S. Contemporary Problems in Psychology (1) S Cr/NC

Lectures open to the public.

Enrollment for credit limited to upper division and graduate majors in psychology; or consent of instructor

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.

197. Senior Project (1-3) I, II Cr/NC

Prerequisites: Twelve units of psychology and consent of instructor.

An individual investigation and report on a research project. Maximum credit six units. 199. Special Study (1-3) I, II Cr/NC

Individual study, including library or laboratory research and a written report. Maximum credit six units.

Prerequisite: Twenty-four upper division units in psychology.

### **Graduate Courses**

### 200. Seminar (3)

Prerequisites: Twenty-four upper division units in psychology and consent of graduate adviser.

An intensive study in advanced psychology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

# 201. Selected Topics in Clinical Psychology (3)

Prerequisites: Psychology 151, 152 and consent of graduate adviser. Advanced study of such clinical topics as community mental health, forensic psychology, ethics, and autogenic training. Topics will vary on a semester basis.

## 202A-202B. Contemporary Psychology (3-3)

Prerequisite: Bachelor's degree in psychology.

A comprehensive survey of contemporary literature in psychology, dealing with recent developments in the areas of learning and motivation, perception, psychophysiology, personality and psychodynamics, social behavior, and experimental inference.

### 204. Psychological Assessment I (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 105, 150, 178, and consent of graduate adviser. Theory and practice in assessment of intelligence and special abilities.

### 205. Psychological Assessment II (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 151, 204 and consent of graduate adviser. Theory and practice in assessment of special abilities, personality and behavior disorders.

211. Seminar in Behavior Disorders of Childhood and Adolescence (3)

Prerequisites: Psychology 106, 151 and consent of graduate adviser.

Contemporary approaches to emotional and behavioral problems of childhood and youth. Considers developmental, cognitive and social variables as well as theory and treatment.

# 212. Seminar in Behavior Disorders of Adults (3)

Prerequisites: Psychology 151 and consent of graduate adviser.

Contemporary approaches to emotional and behavioral problems of adulthood. Considers developmental, cognitive and social variables as well as theory and treatment.

### 219. Seminar in Personnel Psychology (3)

Prerequisites: Psychology 121 and consent of graduate adviser.

Problems and procedures in selection, classification, and performance appraisal, focusing on testing in industry, the interview, and other selection and assessment devices. Criterion development and measurement methods.

### 220. Seminar in Organizational Psychology (3)

Prerequisites: Psychology 123 or Business Administration 145, and consent of graduate adviser

Applications of psychological principles and methods of investigation to problems of industrial relations and motivation of employees; factors influencing morale and employee productivity; criteria of job proficieny; psychological aspects of worker-management relationships and leadership.

### 221. Seminar in Problems in Social Psychology (3)

Prerequisites: Psychology 110, 145, 175 and consent of graduate adviser.

Factors influencing the formation of attitudes, opinions, and stereotypes; the establishment of roles during socialization of the individual; social crises, change, and resistance to change; the causes and alleviation of interpersonal conflict.

### 222. Seminar in Theoretical Psychology (3)

Prerequisites: Psychology 175, 178 and consent of graduate adviser.

Basic nature of theories, their relationships to data, and the characteristics of various types of constructs used in psychological theories.

# 223. Experimental Design (3)

Prerequisites: Psychology 110, 170 and consent of graduate adviser.

Principles and methods of planning and carrying out systematic investigations to answer questions concerning human behavior with stress on the interdependence of experimental design and statistical evaluation of results. Practice in formulation of testable hypotheses, techniques of equating groups, solution of sampling problems, and interpretation of results.

# 224. Advanced Experimental Design (3)

One lecture and six hours of laboratory.

Prerequisite: Psychology 223 and consent of graduate adviser. Methods, techniques, and apparatus applicable to questions of various types. Special attention is given to sources of error, limitations on interpretations, and psychophysical methods. Students will design and carry out experiments in preparation for original independent investigations.

225. Principles of Test Construction (3)

Prerequisites: Psychology 105, 170 and consent of graduate adviser. Detailed consideration of adequate sampling techniques, item construction, item analysis, determination and enhancement of reliability and validity of tests.

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### 226. Seminar in Political Psychology (3)

(Same course as Political Science 226.

Prerequisites: Six units selected from: Psychology 110, 112, 145; Political Science 100A-100B, 121, 122, 190; and consent of graduate adviser.

Psychological factors of the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus, and participation.

# 230. Seminar in Physiological Correlates of Behavior (3)

Prerequisites: Psychology 50, 113 or 142, or nine units of biology; and consent of graduate adviser.

An exploration of current research and theory in physiological psychology with emphasis on behavioral correlates and psychophysiology.

## 231. Seminar in Ethology and Comparative Psychology (3)

(Same course as Biology 231.)

Prerequisites: Psychology 114 or 117 or Biology 110, or Zoology 170, and consent of graduate adviser.

Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.

# 233. Counseling and Psychotherapy Laboratory (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 151, 152, 178 and consent of graduate adviser. Supervised practice in the application of psychotherapeutic and counseling techniques from selected cognitive, dynamic, interpersonal, and behavioral approaches.

### 234. Behavior Therapy Laboratory (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 151, 175, 178 and consent of graduate adviser. Supervised practice in the application of behavior therapy (individual treatment) and behavior modification (group method).

270. Statistical Theory (3)

Prerequisites: Psychology 70, 105 and consent of graduate adviser.

Study of quantitative methods in psychology with emphasis on normal inference and nonparametric statistics. Not open to students with credit or concurrent enrollment in Psychology 170.

### 275. Advanced Principles of Learning (3)

Prerequisites: Psychology 110 and consent of graduate adviser.

The empirical data, basic principles and theoretical positions of major learning theorists. Not open to students with credit or concurrent enrollment in Psychology 175.

## 277. Seminar in the History of Psychology (3)

Prerequisites: Psychology 110 and consent of graduate adviser.

The history of modern psychology. Not open to students with credit or concurrent enrollment in Psychology 177.

### 278. Applied Community Psychology (3)

Prerequisites: Psychology 200 (Seminar in Community Psychology), 201 and consent of graduate adviser.

Systematic integration of principles of psychotherapy, behavior modification, child development, gerontology, social psychology, vocational testing, and psychological methodology into community psychology.

295. Field Work in Community Psychology (3) Prerequisites: Psychology 199 (Special Study in Community Psychology), 200 (Seminar in Community Psychology), 201 and consent of graduate adviser.

Applied community psychology in the service of the community, including supervision of undergraduate students and contact with community organizations.

### 296. Directed Field Experience (3 or 6)

Prerequisites: Psychology 205, 211 or 212, and 233.

The student must arrange his practicum setting in cooperation with the chairman of the Psychology Department Practicum Committee and with the express approval of that committee during the semester prior to enrolling for credit in this course. Maximum credit six units.

### 297. Research (1-3) Cr/NC

Research in one of the fields of psychology. Maximum credit six units applicable on a master's degree.

### 298. Special Study (1-3) Cr/NC

Individual projects involving library or laboratory research in any area of psychological investigation or interest. Maximum credit six units applicable on a master's degree.

### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree. Credit is contingent upon acceptance of the completed thesis by the Department of Psychology.

**Public Administration and Urban Studies** 

In the College of Professional Studies

Public Administration and Urban Studies is a member of the National Association of Schools of Public Affairs and Administration

### Faculty

**Emeritus:** Love

Professors: Bigger, Gilbreath, Kitchen (Chairman) Associate Professors: Clapp, Gazell, Gitchoff, Hamilton Assistant Professors: Boostrom, Thompson, Walshok Lecturers: Corso, Frankum

Offered by Public Administration and Urban Studies Master of City Planning degree.

Master of Public Administration degree.

Master of Science degree in criminal justice administration.

- Major in criminal justice administration with the B.S. degree in applied arts and sciences. (Refer to this section of the catalog on Criminal Justice Administration.)
- Major in public administration with the A.B. degree in applied arts and sciences. Minor in public administration.

## **Public Administration Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. Nine units of social science, a three-unit course in statistics (may be taken in upper division), and Business Administration 83. (15 units.)

Major. A minimum of 36 upper division units to include Public Administration 140 and 197 or 198; and additional upper division courses selected with approval of the departmental adviser, including a three-unit course in statistics if not taken in the lower division. Within this program, students may elect to specialize in urban management. Interested students should seek guidance from the director.

# **Public Administration Minor**

The minor in public administration consists of a minimum of 15 units to include Political Science 2, Public Administration 140, and Public Administration 197 or 198, or other courses selected with the guidance of an adviser in public administration.

# 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 110, 111, 112, 116, 146, and 188. (2) Public administration. Most relevant are courses numbered 114, 115, 135, 136, 140, 141,

142, 143, 144, 145, 147, 149, 152, and 156.

(3) Urban studies. Most relevant are courses numbered 148, 150, 154, and 160.

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### Lower Division Courses

90. The Urban Scene (3)

Urban society as an environment in which people interact with such public institutions as municipal and county administrations, school districts, and special authorities; community control over institutions within the urban conglomerate: improving urban life styles.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

### 114. Negotiation and Bargaining in the Public Service (3)

Prerequisite: Public Administration 140.

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.

115. Governmental Employer-Employee Relations (3) I, II

## Prerequisite: Public Administration 144.

Historical development, legal basis and organizational implications of governmental employer-employee relations; emphasis on California local government.

135. Selected Topics in Public Affairs (3)

Selected topics in the administration of public policy and problems of public administrative organization.

### 136. Administrative Law (3) II

The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action.

### 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.

### 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.

### 142. Management of State Governments (3) I, II

Administrative and constitutional problems of state management in the American federal system. Emphasis on California.

### 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.

### 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.

### 145. Administrative Behavior (3) I

Social, psychological, and behavioral theories of organization; concepts of administrative leadership; organization and the individual; emphasis on governmental organizations.

### 147. Administration and Public Policy Development (3) I, II

Process of formulating public policy with emphasis on the role of public agencies.

### 148. The Metropolitan Area (3) I. II

Prerequisite: Public Administration 142 or 143.

Problems of government and administration arising from population patterns and physical and social structures of metropolitan areas.

### 149. Comparative Public Administration (3) II

Prerequisite: Public Administration 140.

Administrative organization and process of selected foreign and American governments. Analysis of the cultural basis of administrative systems.

### 150. Decision Making in the Urban Community (3) I. II Prerequisite: Public Administration 143.

Processes of decision making in the management of urban communities.

### 151. California Law of Municipal Corporations (3) I, II

Offered only in Extension.

California law governing the nature, regulation and control of the counties, charter cities, sixth class cities, school districts and special districts. The creation, alteration, dissolution, legal actions by and against, powers and duties; rights and liabilities of local governments.

### 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.

153. Management of the Federal Government (3) I. II

Prerequisite: Public Administration 140.

Problems in the administration of the federal government; for example, leadership, specialization, unity of command, oversight,

## 154. Intergovernmental Relations in the United States (3) II

Prerequisite: Public Administration 142 or 143 or 153.

Constitution, political and administrative characteristics of American federalism, including regionalism, interstate compacts, and grants-in-aid.

### 156. Public Administrative Systems Analysis (3)

Prerequisites: Public Administration 140 and a statistics course.

Systems and organization analysis; survey of electronic systems; work standards and units; procedures analysis; administrative planning.

An introduction to community planning: regional, county, and city. Consideration of the

by responsible officers and inspection of work operations and facilities in management, public safety, public works and utilities, and other major governmental operations.

### 162. Fiscal and Budgetary Policy (3) I, II

Prerequisite: Public Administration 140.

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.

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

Refer to the Honors Program.

197. Investigation and Report (3) I, II

Analysis of special topics. Admission by permission of instructor.

# 198. Internship in Public Administration (2-6) I, II

Prerequisite: Consent of instructor.

Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences.

## 199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisites: Twelve upper division units in public administration and consent of instructor.

### **Graduate** Courses

201. Scope of Public Administration (3)

Prerequisite: Six upper division units in public administration. The development of public administration as an academic discipline; a systematic evaluation of the rise and operations of large-scale public bureaucracies.

# 203. Seminar in Theory of Administrative Organization (3)

Prerequisite: Public Administration 201.

Organization and management; the executive role, decision making; bureaucracy; authority and power; communication and control and organizational system; tactics and strategies in effective management.

205A. Empirical Approaches to Public Administration: Qualitative Analysis (3) Prerequisite: Public Administration 201.

Examination of basic research approaches, i.e., legal, historical, and small-group, etc.

205B. Empirical Approaches to Public Administration: Quantitative Analysis (3)

Prerequisite: Public Administration 201.

Study of techniques for the gathering of data on Public Administration with reference to survey research and methodology; examination of various data analysis methods.

# 230. Seminar in Public Financial Management (3)

Prerequisite: Public Administration 162.

Problems in the administration and budgeting of public revenues.

240. Seminar in Public Administration (3)

Maximum credit six units applicable on a master's degree.

### 160. Principles of Planning (3) I, II

Master Plan, including its purposes, contents, and method of adoption.

### 161. Field Studies in Government (3) II. S

Prerequisite: Public Administration 140. Study of organization, policies and functions of selected government agencies. Discussion

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## 241. Seminar in Public Personnel Administration (3)

Prerequisite: Public Administration 201.

Analysis of selected problems in personnel administration; special emphasis on organizational development and consultation skills as emerging personnel functions. Maximum credit six units applicable on a master's degree.

243. Science, Technology, and Public Policy (3) Prerequisite: Public Administration 201, or equivalent seminar in another department. The influence of science and technology on governmental policy making; scientists as administrators and advisers; governmental policy making for science and technology; government as a sponsor of research and development.

### 245. Beadings in Public Administration (3)

Prerequisite: Credit or concurrent registration in Public Administration 201. Selected readings in the literature of public administration.

### 249. Seminar in Comparative Administration (3)

Prerequisite: Public Administration 140.

Selected problems in administration, organization, and processes of foreign and international governments. Maximum credit six units applicable on a master's degree.

## 250 Management of Urban Governments (3)

Selected problems in the management of urban governments. Maximum credit six units applicable on a master's degree.

### 255. The Metropolitan Area (3)

Prerequisite: Public Administration 143, 148, or 150.

Selected problems in the government and administration of the world's major metropolitan areas.

### 260. Administration and Public Policy Development (3)

Prerequisite: Twelve upper division units in social science.

Social, political, and administrative problems involved in governmental program development and change.

### 291. Problem Analysis (3)

Analytical treatment of selected problems in Public Administration, Review of methods for investigation and reporting of data. Consideration of problems in preparation of projects or thesis.

### 296. Internship in Public Administration (1-6)

Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences. Admission by consent of instructor.

297. Research in Public Administration (3) Cr/NC Prerequisite: Consent of Director, Public Administration and Urban Studies. Research in one of the areas of public administration.

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

### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

### Graduate Courses in City Planning

CP 260. Seminar in Urban Theory (3)

Prerequisite: Public Administration 160.

Study of the various empirically and normatively based theories of the city and urbanization process, with emphasis on communication and transaction and institutional approaches.

CP 261. Urban Design and Land Use Planning Studio (6)

Two lectures and eight hours of laboratory. Prerequisite: City Planning 266B.

Laboratory course concerned with graphic expression, principles of land use planning, land development, and urban design. Project integrating principles. (Formerly numbered Public Administration 261A-261B.)

## CP 262. History of Urban Planning (3)

History of urban development and of the field of urban planning.

## CP 265. Seminar in Planning Administration (3)

The administration of the planning function in urban government. Relationships between the planner and public and private agencies, governmental departments and elected officials. Case studies and problems.

### CP 266A. Seminar in Urban Planning (3)

Prerequisite: Public Administration 160. Introductory seminar to the Master of City Planning Program, focusing upon the planner's perspective of urban problems and goal formation. (Formerly numbered City Planning 266.)

CP 266B. Seminar in Urban Planning Methodologies (3)

Prerequisite: City Planning 266A. Procedures and analytical techniques in urban planning.

CP 266C. Seminar in Urban Planning Implementation (3)

# Prerequisite: City Planning 266B.

Analysis of the content and function of zoning, subdivision regulation, codes, capital budgeting, urban renewal, model cities, and other implementation methods and programs.

## CP 266D. Seminar in Urban Planning Theory (3)

Prerequisite: City Planning 266C.

Alternative theories of planning and organization of the planning function. Emphasis on conceptual foundations, relationship to governmental structure, decision making, and ideological and ethical orientations.

### CP 267. Readings in Urban Planning (3)

Selected topics in urban planning. Maximum credit six units applicable on a master's degree.

## CP 296. Internship in Urban Planning (3-6)

Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences. (Formerly numbered City Planning 293.)

# CP 297. Research in Urban Planning (3) Cr/NC

Prerequisite: Consent of Director of City Planning Program.

Research in one of the areas of urban planning. Maximum credit six units applicable on a master's degree

# CP 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff.

To be arranged with Director of City Planning and instructor. Individual study. Maximum credit six units.

# Recreation In the College of Professional Studies

Faculty

Professors: Butler (Chairman), Hanson Assistant Professors: Duncan, Hutchinson, Namba Instructor: Gore

# Offered by the Department

Major in recreation administration with the A.B. degree in applied arts and sciences. Minor in recreation.

A cooperative education program is available on a selective basis, whereby a student alternates semesters of study and full-time, paid work experience during the final two years of college. This program normally results in a one-year delay in date of graduation. Students in the program profit from approximately one and one-half years of full-time work experience prior to graduation.

Inquiries and applications should be directed to the Department Chairman.

# **Recreation Administration Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

The major in recreation administration may be planned with an emphasis in one of the following four areas: (1) Leisure Agency Leadership, (2) Outdoor Recreation, (3) Park and Recreation Management, or (4) Recreation Rehabilitation.

A minor is not required with this major.

### Recreation / 343

### Recreation / 345

### 344 / Recreation

### Emphasis in Leisure Agency Leadership

Preparation for the major. Music 2: Physical Education 32A, 33A, 33B; Psychology 1; Sociology 1; Recreation 40, 60, 70, 80, 84. (27 units.)

Major. A minimum of 37 upper division units to include Health Science and Safety 146; Industrial Arts 101: Journalism 180: Psychology 106: Recreation 140, 165, and 184 or 198. Nine units selected from Psychology 131, 145, 152; Sociology 113, 114, 125, 157. Eight units selected from Art 110; Industrial Arts 102, 140; Education 140; Drama 110; Physical Education 122, 151, 155, 156, 175, 176; Recreation 151,

### **Emphasis in Outdoor Recreation**

Preparation for the major. Biology 1, 2; Botany 1; Economics 1A; Geography 1; Recreation 40, 60, 80; and six or more units selected from Anthropology 2; Engineering 10; Geology 2, 3; Zoology 50, 60. (28 units.)

Major. A minimum of 36 upper division units to include Biology 115; Geography 170, 171, 175; Health Science and Safety 146; Recreation 165, 175, 185; and twelve units selected from Anthropology 161: Botany 112: Business Administration 132, 145: History 185: Industrial Arts 101; Journalism 180; Psychology 145; Sociology 150; Zoology 112, 114, 115, 116, 117, 118, 150 and 170.

### **Emphasis in Park and Recreation Management**

Preparation for the major. Psychology 1: Recreation 40, 60, 70, 80, 84: Sociology 1. Four units selected from Art 2A: Business Administration 80: Music 2: Physical Education 32A, 33A. 33B. (25 units.)

Major. A minimum of 38 upper division units to include Industrial Arts 101; Journalism 180; Public Administration 140, 143; Recreation 140, 165, 175, and 184 or 198. Nine units selected from Psychology 106; Public Administration 144, 152, 160, 162; Sociology 114, 125, 157. Six units selected from Botany 112, Geography 170, 171, 175, Recreation 150, 151, 185.

## **Emphasis in Recreation Rehabilitation**

Preparation for the major. Psychology 1; Recreation 40, 60, 70, 80, 84; Sociology 1; and four units of electives from art, aquatics, business administration, dance, drama, or music. (25 units.)

Major. A minimum of 36 upper division units to include Industrial Arts 101: Journalism 180; Recreation 150, 151, 165, and 184 or 198; Psychology 106, 109, 150. Nine units selected from Drama 110, 142; Physical Education 122, 151, 154; Psychology 145, 152; Sociology 136; Education 135, 167; Health Science and Safety 154, 172, 175, 176.

# **Recreation Minor**

The minor in recreation consists of a minimum of 19 units to include two lower division units in art, dance, drama, or music; Recreation 60, 70, 80, 165, and 184; and Drama 110 or Recreation 140. Recommended: Industrial Arts 101, Physical Education 151, 175, 176, Psychology 106, Public Administration 144, and Recreation 150.

### Lower Division Courses

### 40. Challenges of Leisure (3) I. II

Study of leisure and its impact on contemporary life; issues affecting recreation in today's urbanized society.

### 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.

70. Recreation Leadership (3) I, II

Two lectures and three hours of laboratory.

Plan and conduct programs in social recreation, recreational dramatics, song leading, handicrafts and low-organized games. Principles of group leadership.

### 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.

# 84. Supervised Field Work (3) I, II, Cr/NC

Prerequisites: Credit or concurrent enrollment in Recreation 70 and 275 hours' experience in recreation leadership.

Observation and participation in community recreation leadership. Practical, volunteer experience in a variety of recreational settings. Minimum of one hour per week in class plus eight hours per week at an agency.

## 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

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.

### 148. Aquatic Administration (3)

Management of swimming pools, beaches, lakes and marinas; safety factors; legal requirements; health standards; facilities and programming.

149. Camp Administration (3)

Prerequisite: Recreation 80.

Operation of resident, day and travel camps. Staff management health and safety, finances, food services, maintenance, planning and publicity.

### 150. Recreation in Medical Settings (3) I, II

Recreation activities to meet the needs of handicapped confined to private, State, and Federal treatment centers. Designed for social welfare students, nurses, special education teachers, and medical recreators.

### 151. Recreation for Special Groups (3) I. II

Developing community recreation programs for special groups, such as aging, corrections, mentally ill, physically handicapped, mentally retarded and/or others. Field observations may be required.

### 165. Administrative Supervision of Recreation (3) I, II

Prerequisite: Recreation 60.

Planning, implementing, financing, staffing, supervising and evaluating organized systems of recreational services. Use of social and human resources.

166. Honors Course (1-3) I. II

Refer to Honors Program.

### 175. Management of Recreation Areas and Facilities (3) I, II

Prerequisite: Credit or concurrent registration in Recreation 165.

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.

### 184. Directed Leadership (3) I, II, S, Cr/NC

One lecture and eight hours of supervised activity.

Prerequisite: Recreation 84.

Supervised leadership experience in public and private recreation agencies. Maximum credit six units.

### 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.

198. Internship in Recreation Administration (6-12) I, II, S

Minimum of 20-40 laboratory hours per week.

Prerequisite: Fifteen units in recreation courses including Recreation 165.

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.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of special study adviser.

### **Graduate Courses**

204. Problems in Recreation (3) Alternate years

(Same course as Physical Education 204.)

A survey of current problems facing the recreation profession, a review of literature, discussion of trends and observation of school situations together with the analysis and evaluation of actual problems. Written reports are required.

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### 205. Park Management (3) Alternate years

Prerequisite: Recreation 165.

Fundamentals of general park maintenance. Principles of planning and development. Personnel and budget problems unique to park management. Coordination of activities with other public agencies.

260. Recreation Administration and Supervision (3) Alternate years

Prerequisites: Recreation 165 and 184.

Methods, techniques and evaluation systems used by chief administrators, department heads and supervisors in both public and private agencies.

261. Seminar in Specialized Facilities (3)

Prerequisite: Recreation 175.

Management methods in planning, developing and operating specialized recreation facilities such as golf courses, zoos and aquaria, botanical gardens and arboreta, beaches and marinas, centers for the handicapped, sports stadia, and others. May be repeated once in a different area of specialization.

# **Religious Studies** In the College of Arts and Letters

Faculty

Professors: Anderson, Friedman, Jordan (Chairman) Associate Professor: Khalil Assistant Professors: Ghazi, Swyhart Lecturer: Coughlin

Offered by the Department

Major in religious studies with the A.B. degree in liberal arts and sciences. Minor in religious studies.

# **Religious Studies Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major.

Preparation for the major. Religious Studies 20, 50; Philosophy 1, 2, (12 units.)

Major. A minimum of 24 upper division units in religious studies to include either Religious Studies 100A or 100B, at least six units from courses listed in Group I below, at least six units from Group II, at least three units from Group III, and at least three units from Group IV. Six of the 24 upper division units required for the major may be taken from among those courses other than religious studies courses which are included in Group III below.

Group I: Religious Studies 110, 111A-111B, 114, 115 and 116.

Group II: Religious Studies 121A-121B, 126A-126B. Group III: Religious Studies 130, 132, 135, 136, 150, 151, Philosophy 135, Sociology 138, Anthropology 153.

Group IV: Religious Studies 190, 191.

# **Religious Studies Minor**

The minor in religious studies consists of from 15 to 22 units to include at least three lower division units in religious studies, at least three units from Group I below, at least three units from Group II, and at least three units from Group III.

Group I: Religious Studies 110, 111A-111B, 114, 115, 116.

Group II: Religious Studies 121A-121B, 126A-126B.

Group III: Religious Studies 130, 132, 135, 136, 150, 151, Philosophy 135, Sociology 138, Anthropology 153. Group IV: Religious Studies 190, 191.

### Lower Division Courses

20. World Religions (3)

Major figures, attitudes and teachings of world religions.

50. Problems of Religion (3)

Problems in the study of religions, based on the study of scripture selected from Eastern and Western religions.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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

100A-100B. The Bible (3-3)

Prerequisite: Three units of religious studies.

The problems of composition and historical significance in the context of religious meanings. Semester I: The Pentateuch, the Prophets and the Writings. Semester II: The New Testament.

110, Greek and Latin Fathers (3)

Prerequisite: Six units of religious studies.

Readings in patristic thought from Ignatius of Antioch through Augustine.

### 111A-111B. The Western Christian Tradition (3-3)

Prerequisite: Religious Studies 110. Religious Studies 111A is prerequisite to 111B.

Readings in source materials illustrative of the doctrinal and institutional development of the Western Church, Semester I: The Medieval Church and early stages of the Reformation. Semester II: The Reformation and the Enlightenment.

114. The Eastern Orthodox Tradition (3)

Prerequisite: Religious Studies 110.

Major doctrines, practices and developments in the Eastern Church from after the Patristic period to the present.

### 115. Judaism (3)

Prerequisite: Three units of religious studies.

Major trends and teachings from the Talmudic period to the present.

### 116. Islam (3)

Prerequisite: Three units of religious studies.

Major doctrines, practices and developments from the time of Mohammed to the present.

# 121A-121B. Oriental Religions (3-3)

Prerequisite: Three units of religious studies.

Phenomenological studies in the major religious traditions of south and east Asia. Semester I: Religions of India-especially Hinduism and Buddhism. Semester II: Religions of the Far East.

126A-126B. Scriptures of India and China (3-3)

Prerequisite: Religious Studies 50, 121A, or 121B; or six units of philosophy.

The religious and philosophical modes of thought and ways of life of the Orient. Reading and analysis of primary texts in translation. Semester I: India and Southeast Asia. Semester II: China and Japan. (Formerly numbered and entitled Philosophy 150A-150B, Asian Thought.)

130. Theory and Practice of Worship (3) The symbolic structure of devotional performance.

131A-131B. Religion and Culture (3-3)

The relations between religion and aspects of major cultural traditions. Semester I: Primarily the plastic arts and music. Semester II: Primarily literature and drama.

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. (Formerly numbered Religious Studies 125.)

# 135. Religion and Science (3) I, II

Prerequisite: Religious Studies 20 or 50. A critical exploration of the relation of science to religious conceptions of human nature and destiny.

136. Religion and Relevance (3) I, II Prerequisite: Religious Studies 100A or 100B.

A critical exploration of the modern understanding of scriptural traditions in relation to individual and social ethical concerns.

140. The Oracular Tradition (3)

Prerequisites: Religious Studies 50; and 121A, 121B, 126A, 126B, 131A, or 131B. Oracular traditions of East and West, with special attention to the I Ching and the Tarot.

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.

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### 151. Beligion in America (3)

Prerequisite: Religious Studies 150.

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.

166. Honors Course (1-3) I. II

### Refer to Honors Program. 180. A Major Figure (3) I. II

Prerequisites: Religious Studies 20 or 50, 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.

### 181. A Metaphysical Doctrine (3) I, II

Prerequisites: Philosophy 2, Religious Studies 20 or 50, 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.

### 190. Advanced Studies in Religious Practices (3)

Prerequisite: Nine upper division units in religious studies including at least three units in Oriental traditions and three in Western traditions.

Research in the function and significance of ritual, prayer and meditation.

### 191. Advanced Studies in Religious Doctrines (3)

Prerequisite: Nine upper division units in religious studies including at least three units in Oriental traditions and three in Western traditions.

Research in the significance of selected teachings of the major religions.

### 192. Recent Christianity (3)

Prerequisite: Religious Studies 111B, Religious Studies 114 is recommended. Themes in the development of Christian institutions and doctrines in the 19th and 20th centuries.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Twelve upper division units in religious studies.

# **Russian**

In the College of Arts and Letters

### Faculty

Professors: Dukas, Kozlik (Chairman) Associate Professor: Fetzer

Offered by the Department of Germanic and Slavic Languages and Literatures Master of Arts degree in Russian.

Major in Russian with the A.B. degree in liberal arts and sciences.

Minor in Russian.

Teaching major in foreign languages in the area of Russian for the single subject teaching credential.

# **Russian Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Students majoring in Russian must complete a minor in another field to be approved by the departmental adviser in Russian.

Preparation for the major. Russian 1, 2, 3, 4, 10 and 11. (20 units.) Recommended: History 4A-4B.

Major. A minimum of 24 upper division units in Russian to include Russian 101A-101B. 102A-102B; and 12 units in period literature excluding Russian 144A-144B, or six units in period literature and six units in Russian linguistics.

## **Russian Minor**

The minor in Russian consists of a minimum of 15 units in Russian to include Russian 4 and six units of upper division courses.

# Russian

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the foreign languages major in the area of Russian for the single subject teaching credential are being revised. For further information consult the department. Proficiency Examination: Before taking a student teaching assignment in Russian, the

candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of Germanic and Slavic Languages and Literatures. The candidate must consult with the chairman of the Department of Germanic and Slavic Languages and Literatures concerning this examination

### **High School Equivalents**

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Russian may be counted as the equivalent of Russian 1: three years the equivalent of Russian 2; and four years the equivalent of Russian 3. 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.

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.

2. Elementary (4) I, II

Four lectures and one hour of laboratory.

Prerequisite: Russian 1.

Continuation of Russian 1. Not open to students who have completed four years of high school Russian.

3. Intermediate (4) I

Prerequisite: Russian 2 or three years of high school Russian.

A practical application of the fundamental principles of grammar. Reading in Russian of cultural material, short stories, novels or plays; oral practice.

4. Intermediate (4) II

Prerequisite: Russian 3. Continuation of Russian 3.

8. Scientific Reading (2)

Prerequisite: Russian 2 or three years of high school Russian. Intensive reading in scientific fields.

10. Conversation (2) I

Prerequisite: Russian 2 or three years of high school Russian.

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays.

11. Conversation (2) II

Prerequisite: Russian 10 or Russian 3, or four years of high school Russian. Continuation of Russian 10.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101A-101B. Advanced Grammar and Composition (3-3)

Prerequisites: Russian 4 and 11. Advanced grammar and stylistics; intensive writing practice; reports based on outside reading.

102A-102B. Survey of Russian Literature (3-3)

Russian literature from its beginnings, with emphasis on the nineteenth and twentieth centuries.

103. Old Russian Literature (3)

Masterpieces of Russian literature before 1700.

104 Russian Literature of the Eighteenth Century (3) Russian Classicism and Sentimentalism.

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.

110A-110B. The Russian Novel of the Nineteenth Century (3-3) Development of the Russian novel of the nineteenth century

111. Russian Literature of the Twentieth Century (3) Poetry, prose and drama of the twentieth century.

130. Bussian Syntax and Stylistics (3) Prerequisite: Russian 101A-101B. The structure of contemporary Russian.

131. Russian Phonology and Morphology (3) Prerequisite: Russian 4 and 11.

The sounds and forms of contemporary Russian.

144A-144B. Masterpieces of Russian Literature (3-3) I, II

Selected Russian literary work in English translation. Semester I: The classic Russian authors of the nineteenth century-Pushkin, Gogol, Dostoyevsky, Tolstoy and Chekhov. Semester II: Literature of the Modernist and Soviet periods.

166. Honors Course (1-3) I. II

Refer to Honors Program.

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.

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

### **Graduate** Courses

201. History of the Russian Language (3) Prerequisite: Twelve upper division units in Russian. The historical development of the Russian language.

202A-202B. Old Church Slavic (3-3) Prerequisite: Twelve upper division units in Russian. Structure of Old Church Slavic with readings and analysis of medieval Slavic texts.

203. Slavic Linguistics (3) Prerequisite: Twelve upper division units in Russian. Selected topics in historical and comparative Slavic linguistics.

204A-204B. The Soviet Novel and Short Story (3-3) Prerequisite: Twelve upper division units in Russian. Intensive study of major writers of Soviet prose fiction.

205. Russian Poetry from Pushkin to the Present (3) Prerequisite: Twelve upper division units in Russian. The major Russian poets of the nineteenth and twentieth centuries.

253. Nineteenth Century Russian Literature (3) Prerequisite: Twelve upper division units in Russian. Major developments in the literature of the time.

255. Seminar: A Major Author or Movement (3) Prerequisite: Russian 290.

A major author or movement. Maximum credit six units applicable on a master's degree.

### 290. Research and Criticism (3)

Prerequisite: Twelve upper division units in Russian.

Purposes and methods of research in Slavic linguistics and in the literatures; theories and practice of literary criticism.

298. Special Study (1-3) Cr/NC Individual study. Maximum credit six units. Prerequisites: Eighteen upper division units in Russian and consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3) Cr/NC

Preparation of a project or thesis for the master's degree.

# Social Welfare

# In the School of Social Work

### Faculty

Professors: Griffin, Kelley (Associate Dean), Pantoja, Pilcher, A., Pilcher, D., Tebor Associate Professors: Andresen, Guidry, Herman, Perry

Assistant Professors: Cohen, Fort, Watson

Lecturers: Brewer, Morgan, Olivier, Pepper

Offered by the School of Social Work

Major in social welfare with the A.B. degree in liberal arts and sciences. Major in social welfare with the A.B. degree in applied arts and sciences. Minor in social welfare.

# Social Welfare Major

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

All candidates for a degree in liberal arts and sciences or in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

A minor is not required with this major. The primary educational objective of this major is preparation for beginning social work practice. In addition, it serves broad educational purposes based on an understanding of contemporary social welfare programs and prepares for professional social work education at the graduate level. The major prepares for immediate employment in those social work positions which do not require professional social work education on a graduate level.

Preparation for the major. Anthropology 2; Economics 1A, 1B; Political Science 1 and 2; Sociology 1, 10, 60; and Psychology 1. (27 units.) Recommended: Biology 1 and 2.

Major. (Undergraduate): A minimum of 31 upper division units to include Social Welfare 100A-100B, 180A-180B, 182A-182B, 183A-183B, and 189A-189B; and Sociology 140 or Psychology 145.

Recommended: Social Welfare 187 (strongly recommended for those students planning to seek admission to the San Diego State University School of Social Work), Sociology 122, Psychology 106, Biology 159, and courses from anthropology, literature, history, philosophy, political science, economics, psychology and sociology. Students should consult with their adviser in social welfare for selection and arrangement of courses.

# Social Welfare Minor

The minor in social welfare consists of a minimum of 15 units in social welfare, nine units of which must be in upper division courses.

Lower Division Courses

# 30. Contemporary Courtship and Marriage (3) I, II

Developing understanding and ability to evaluate various concepts, attitudes and value systems as they relate to contemporary courtship, marital and family relationships. Assist students in coping with interpersonal relationships. Not open to students with credit in Family Studies and Consumer Sciences 35 or other lower division course in courtship and marriage or marriage and the family.

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.

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### 99. Experimental Topics (2-4) Cr/NC

Refer to the catalog statement on Experimental Topics on page 106. 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**

# 100A-100B. Man in Society (3-3) I, II

Prerequisites: Biology 1 and 2, Psychology 1, and Sociology 1. Social Welfare 100A is prerequisite to 100B.

Biological, psychological and social aspects of human growth and development from birth to death. Integration of concepts from various disciplines.

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

Refer to Honors Program.

May be repeated with new content. Maximum credit six units.

### 180A. Exploring Social Issues (3) I, II

Prerequisite: Sociology 10.

Study of the social forces and institutions as they relate to and determine social policy.

180B. Exploring Social Services (3) I, II Prerequisite: Social Welfare 180A.

Study of issues and dilemmas related to the delivery of social services.

181. Field Observation (1-2) I, II Cr/NC

Prerequisite: Social Welfare 80.

Field observation assignments in the social welfare area. Maximum credit four units. 182A-182B. Social Work Practice (3-3) I, II

Prerequisites: Social Welfare 100B and 180B. Concurrent registration in Social Welfare 183A and 189A for 182A; concurrent registration in Social Welfare 183B and 189B for 182B. The professional base, principles and interventive techniques of social work practice with individuals, families, groups and communities.

183A-183B. Integrating Proseminar (2-2) I, II Prerequisites: Social Welfare 100B and 180B. Concurrent registration in Social Welfare 182A and 189A for 183A; concurrent registration in Social Welfare 182B and 189B for 183B. The integration of social work theory, principles and practice techniques.

187. Methods of Social Welfare Research (3) I, II

Prerequisites: Sociology 60 and Social Welfare 189A.

Sources, nature and uses of social work theory and research. Application of the principles of scientific analysis to the study of social welfare institutions and the practice of social work. 189A-189B. Field Experience in Social Welfare (3-6, 3-6) I, II

Prerequisites: Social Welfare 100B and 180B. Concurrent registration in Social Welfare 182A and 183A for 189A; concurrent registration in Social Welfare 182B and 183B for 189B. Eight to sixteen hours per week of laboratory field assignments in selected social welfare activities.

197. Investigation and Report (3) I, II Prerequisite: Consent of instructor.

Analysis of special topics in social welfare.

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

Social Work

# In the School of Social Work

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

# Faculty

**Emeritus: Witte** 

Professors: Griffin, Haworth, G., Horowitz, Ishikawa, Kelley (Associate Dean), Kukkonen, Lee, Maxwell, Morgan, R.H., Ontell, Pilcher, A., Pilcher, D., Reichert (Dean), Stanford, Stumpf, Tebor

Associate Professors: Anderson, Baily, Clary, Guidry, Haworth, J., Herman, Kahn, Pantoja, Perry, Sardinas

Assistant Professors: Ajemian, Cohen, Fletcher, Fort, Gilliam, Raymer, Watson, Weissman Lecturers: Brewer, Hudson, Leroy, Morgan, R., Ngubo, Olivier, Pepper, Polowniak, Stanger, Treske

Appointments Under Grants from Outside Funds

Lecturers: Murphy, Schiffrin, Shenko

### Offered by the School of Social Work

Master of Social Work, a two-year degree.

Master of Science in Social Work, a one-year degree.

### **Graduate Courses**

Prerequisite for enrollment in all graduate courses: admission to the School of Social Work.

### 200. Social Welfare Policy and Services I (3)

Social welfare as a societal institution; philosophical, historical and comparative analysis of the welfare functions, issues and problems, with special focus on personal and social deprivation.

201. Social Welfare Policy and Services II (3)

Prerequisite: Social Work 200.

Conceptional analysis of social welfare programs related to income maintenance and other social service areas, including social insurance, child welfare and community development.

## 202. Social Welfare Policy and Services III (3)

Prerequisite: Social Work 201.

Problems and issues in emerging social welfare programs, including analysis of the structure of social services and of social work as a profession.

203. Social Welfare Policy and Services IV (3)

Prerequisite: Social Work 201.

Analysis of existing or projected social welfare programs or service.

205. Social Work Administration I (3)

Prerequisite: Social Work 201

Administration as an aspect of all social work practice. Nature of social work administration involving board and staff participation in determining goals and in planning programming and management operations to achieve goals. Administrative organization; interagency policy and control; management processes.

220. Human Behavior and Social Environment I (3)

Theoretical perspectives on man in the changing world. View based on biological, psychological, interpersonal and social structure assumptions over the life-cycle, for application to social work practice.

221. Human Behavior and Social Environment II (3)

Prerequisite: Social Work 220.

Examination of deviant behavior from relative frameworks of a medical model and a career process model. Selected social problem areas are used as illustrations.

222. Human Behavior and Social Environment III (3)

Prerequisite: Social Work 221.

Theories of natural and induced change in human behavior which have utility for social work practice.

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### 230. Social Work Practice I (3)

Prerequisite: Concurrent registration in Social Work 250.

Principles of social work practice with individuals, families, groups and communities. Attention is given to social work objectives, principles and skills.

### 231. Social Work Practice II (3)

Prerequisites: Social Work 230 and concurrent registration in Social Work 251. Principles of social work practice with individuals, families, groups and communities with emphasis on refinement of skills of social study and social problem analysis. Attention to interactional and small group processes in determination of goals and change.

### 232. Social Work Practice III (3)

Prerequisites: Social Work 231 and concurrent registration in Social Work 252.

Social work intervention with families and groups toward personal, social, organizational and institutional change and problem solving. Emphasis on social, ethnic and economic interaction contexts.

### 233. Social Work Practice IV (3)

Prerequisites: Social Work 231 and concurrent requirement in field work.

Designed to offer opportunity for integration and application of the student's knowledge of an array of approaches to practice. Specific content relevant to selected models of social problems experienced by individuals, families and groups in interaction with their social environment.

### 234. Social Work Practice V (3)

Prerequisites: Social Work 231 and concurrent requirement in field work.

Applications of major theories of social change to improve the social environment and ameliorate social problems of individuals, families and groups. Model problems in social welfare planning; mobilization of resources; analysis of issues and resistances; designing programs and structures and reassessments.

### 235. Social Work Practice VI (3)

Prerequisites: Social Work 231 and concurrent requirement in field work.

Exploration of collaborative social work roles with other professional roles in planned change. Differential applications of values, strategies and power in social welfare and host settings, by and on behalf of various population groupings.

### 236. Social Work Practice VII (4)

Prerequisite: Concurrent registration in Social Work 232 or 234.

Laboratory field instruction enabling the student to integrate social work theory, knowledge and concepts in developing interventive skills with individuals, families, groups, organizations and communities. Enrollment limited to students admitted to the M.S.S.W. program.

### 237. Social Work Practice VIII (4)

Prerequisites: Social Work 236 and concurrent registration in Social Work 233 or 235. Continuation of Social Work Practice VII with emphasis on refinements of skills in intervention with individuals, families, groups, organizations and communities.

### 238-S. Social Work Practice IX (6-8) S

Emphasis on the further development of skills with individuals, families, groups, organizations and communities. Enrollment limited to students admitted to M.S.S.W. program.

### 250. Field Instruction I (4)

Prerequisite: Concurrent registration in Social Work 230.

Field instruction in a public or voluntary social work setting. Experiences are drawn upon in relation to classroom learning to emphasize application of social work objectives, principles and skills to services to individuals, families, groups and communities.

### 251. Field Instruction II (4)

Prerequisites: Social Work 250 and concurrent registration in Social Work 231.

Continuation of field instruction initiated in Social Work 250. Opportunities are provided for the application of social study and social problem analysis to experience with interactional and small group processes.

### 252. Field Instruction III: Individuals, Families and Groups (4-5)

Prerequisites: Social Work 251 and concurrent registration in Social Work 232.

Field instruction in a social work setting providing a concentration on social work practice aimed at achieving change in or on behalf of individuals, families and groups. Practice under educational direction at an advanced level.

253. Field Instruction IV: Individuals, Families and Groups (4-5) Prerequisite: Social Work 252.

Continuation of Field Instruction III at an advanced level. Emphasis is placed on the use of diverse problem-solving strategies and resources in social work.

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## 255. Field Instruction V: Organizations and Communities (4-5)

Prerequisite: Social Work 251.

Field instruction in a social work setting providing a concentration on social work practice aimed at achieving changes in social policies, organizations and communities. Practice under educational direction at an advanced level.

256. Field Instruction VI: Organizations and Communities (4-5)

Prerequisite: Social Work 255.

Continuation of Field Instruction V at an advanced level. Emphasis is placed on the use of diverse social work strategies and resources in social planning or community development. 270. Seminar: Social Work Analysis (1-4)

Discussion of student experience in field instruction and its broader implications. Maximum credit four units applicable on a master's degree.

### 290A-290B. Social Work Research Methods and Analysis (2-2)

Definition and purpose of research in social work. Techniques and methods used in collecting, organizing and interpreting social welfare and related data; steps involved in planning a research project and selecting a research design.

### 291. Seminar (2-3)

Selected topics in social work and/or social welfare. Topics to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

297A-297B. Research (3-3) Cr/NC Prerequisite: Social Work 290A-290B.

Research in the field of social work and completion of a research project. Individual or group project.

### 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with Dean and instructor. Individual study. Maximum credit six units.

# Sociology

### In the College of Arts and Letters

### Faculty

Emeritus: Barnhart, Klapp

Professors: Chandrasekhar, Daniels, DeLora, J.R., El-Assal, Gillette (Chairman), Johnson, Kirby, Milne, Mouratides, Somerville, Sorensen, Wendling, Winslow

Associate Professors: Buck, Chandler, DeLora, J.S., Emerick, Kennedy, Scheck, Schulze, Werner

Assistant Professors: Cottrell, Halpern, Ima, Kirkpatrick, Kolodij, Preston, Stephenson Lecturers: Bloomberg, Hohm, Pierce

### Offered by the Department

Master of Arts degree in sociology.

Major in sociology with the A.B. degree in liberal arts and sciences. Minor in sociology.

# Sociology Major

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. Students majoring in sociology must complete a minor in another field.

Preparation for the major. Sociology 1, 10 and 60. (Nine units.)

Major. A minimum of 24 upper division units in sociology to include Sociology 101, 122 and 140.

# Sociology Minor

The minor in sociology consists of 15 to 22 units in sociology, nine units of which must be in upper division courses.

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### Lower Division Courses

1. Introductory Sociology (3) I, II

This course is prerequisite to all upper division courses in sociology Development and use of the concepts applied to sociological analysis; the effects of isolation and social contacts, interaction, processes, forces, controls, collective behavior and social progress. Not open to students with credit in Sociology 102.

### 10. Contemporary Social Problems (3) I, II

Prerequisite: Sociology 1.

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 110 or Mexican-American Studies 10.

60. Elementary Social Statistics (3) I, II Prerequisites: Sociology 1 and Mathematics 3.

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 for, or concurrent enrollment in, another course in statistics.

### 64. Sociological Analysis (3) I, II

Prerequisite: Sociology 1.

Development and use of fundamental procedures of sociological investigation.

### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

## 100. History of Social Thought (3) I, II

Prerequisite: Sociology 1. Development of social thought prior to the appearance of sociology as a distinct scientific discipline. Major emphasis on European contributions.

### 101. Classical Sociological Theory (3) I, II

Prerequisite: Sociology 1.

Theories of the major early European and American sociologists, including Marx, Weber, Durkheim, Pareto, Cooley, Mead and others.

## 103. Contemporary Sociology Theory (3) I, II

Prerequisite: Sociology 101.

Types and trends of contemporary sociological theory. Selected theoretical works.

### 104. Social Change (3) I. II

Prerequisite: Sociology 1. Social change at the interpersonal, institutional and societal levels in a comparative perspective. Detailed analysis of modernization.

# 110. Social Disorganization (3) I, II

## Prerequisite: Sociology 1

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.

### 111. Current Social Issues (3) I, II

Prerequisite: Sociology 1.

Selected controversial and currently relevant social issues. Maximum opportunity provided for student initiative in determining course content and procedures.

### 112. Sociology of Conflict (3) I, II

Prerequisite: Sociology 1.

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.

### 113. Criminology and Penology (3) I, II

Prerequisite: Sociology 1.

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.

### 114. Juvenile Delinquency (3) I, II

### Prerequisite: Sociology

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.

### 120. Industrial Sociology (3) I, II

Prerequisite: Sociology

Group relationships within economic organizations. Problems of leadership, morale and conflict. Some attention to the sociology of occupations and professions.

## 121. Sociology of Occupations and Professions (3) I, II

Prerequisite: Sociology 1. Division of labor, status ranking of occupations, authority structures, occupational and professional organization, occupational socialization, problems of identity and role conflict.

### 122. Social Organization (3) I, II

Prerequisite: Sociology 1.

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.

## 123. The Sociology of Mental Illness (3) I, II

Prerequisite: Sociology 1.

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.

## 124. Social Stratification (3) I, II

Prerequisite: Sociology 1.

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.

# 125. Minority Group Relations (3) I, II

Prerequisite: Sociology 1. 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.

# 126. Medical Sociology (3) I, II

Prerequisite: Sociology 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 176. (Formerly numbered Sociology 121.)

# 132. Formal Organization (3) I, II

# Prerequisite: Sociology 122.

The structure and dynamics of various types of complex formal organization. Their development, internal structure and processes, external relations and function in contemporary society.

# 135. Dynamics of Family Development (3) I, II

Analysis of the history of families; how they form, function and grow to maturity. Focus on the development and interaction of family members throughout all stages of family life cycle from marriage to dissolution. (Not open to students with credit in another upper division course in marriage and the family.)

# 136. Sociology of the Family (3) I, II

Prerequisite: Sociology 1. Recommended: Sociology 101 and 146. A comparative study of family systems in different societies. Changing role-structure and functions of the modern family; rural-urban, social class, racial and ethnic differences in family organization; marriage and family as a developing system of interpersonal relationships.

# 137. Political Sociology (3) I, II

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.

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## 138. Sociology of Religion (3) I, II

Prerequisite: Sociology 1. Recommended: Sociology 101 and 146.

The role of religion in society as cult and institution, including primitive religion, modern sects and churches, ritual, secularization and religious movements.

139. Sociology of Education (3) I. II

Prerequisite: Sociology 1

Social organization of education, teaching as a profession. Class, ethnic and other social factors affecting the educational process. Educational institutions and the community.

140. Social Psychology: Sociological Approaches (3) I, II

Prerequisites: Sociology 1 and Psychology 1.

The major problems and findings of social-psychological studies with reference to group behavior and group membership, the socialization of the individual, and processes of social interaction. Not open to students with credit in Psychology 145.

# 141. Advanced Social Psychology: Sociological Approaches (3) I, II

Prerequisite: Sociology 140 or Psychology 145. Recommended for majors only.

Sociological theories and approaches to the study of group behavior and membership, socialization of the individual, and processes of social interaction.

145. Sociology of Mass Communication (3) I, II Prerequisite: Sociology 1. Recommended: Sociology 140 and 146. 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.

# 146. Collective Behavior (3) I, II

Prerequisite: Sociology 140.

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.

# 147. Sociology of Social Movements (3) I, II

Prerequisite: Sociology 1. Recommended: Sociology 122 and 145. 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.

### 148. Small Groups (3) I. II

Prerequisite: Sociology 140.

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. 150. Population Problems (3) I. II

### Prerequisite: Sociology 1.

Problems of population relative to age, sex and racial distribution. Population practices and theories. Biological and geographical aspects of population problems. International population movements.

# 151. Research Methods in Demography (3) I, II

Prerequisites: Sociology 60 or Economics 2, and Sociology 150.

Standard procedures in the measurement of fertility, mortality, natural increase, migration, population growth and manpower, and working activities. Appraisal of source materials. Students to complete one project during term.

# 157. Urban Sociology (3) I, II

Prerequisite: Sociology 1.

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.

# 160. Quantitative Methods in Social Research (3) I

Prerequisite: Sociology 60.

The use of parametric and nonparametric techniques in the analysis of social research data; including analysis of variance; covariance; multiple and partial correlational techniques. 164. Methods of Social Research (3) I, II

# Prerequisite: Sociology 60.

Research methods and interpretation used in the study of communities, institutions and social conditions.

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

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.

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

### **Graduate Courses**

200. Seminar in Social Theory (3) Prerequisites: Sociology 101 and 164

Classics of sociology, American social theory, theory construction, application of theory to research, theoretical models, sociology of knowledge, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

### 205. Directed Readings in Social Theory (3)

Prerequisites: Sociology 101 and 164. Selected readings providing comprehensive coverage of the field of social theory.

210. Seminar in Social Disorganization (3)

Prerequisites: Sociology 110 and 164.

Theories of social disorganization, anomie and alienation, deviance, crime, delinquency, personal pathology, institutional malfunction, social conflict, disaster, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

## 215. Directed Readings in Social Disorganization (3)

Prerequisites: Sociology 110 and 164. Selected readings providing comprehensive coverage of the field of social disorganization.

# 220. Seminar in Social Organization (3)

Prerequisites: Sociology 122 and 164.

Social groups, formal organization, organizational change, authority and leadership, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

### 225. Directed Readings in Social Organization (3)

Prerequisites: Sociology 122 and 164.

Selected readings providing comprehensive coverage of the field of social organization.

### 230. Seminar in Social Institutions (3)

Prerequisites: Sociology 122 and 164.

The family and kinship, political organization, economic organization, religion, education, industry, occupations and professions, social stratification, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

## 235. Directed Readings in Social Institutions (3)

Prerequisites: Sociology 122 and 164. Selected readings providing comprehensive coverage of the field of social institutions.

240. Seminar in Social Psychology: Sociological Approaches (3)

# Prerequisites: Sociology 140 and 164.

Socialization, role theory, motivation, perception, self, social context of personality, attitude theory, interaction, language and symbolic process, social types, collective behavior, small groups, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

# 245. Directed Readings in Social Psychology: Sociological Approaches (3)

Prerequisites: Sociology 140 and 164. Selected readings providing comprehensive coverage of the field of social psychology.

# 250. Seminar in the Community (3)

Prerequisites: Sociology 157 and 164.

Ecological structure and process; community institutions and structure; community deterioration, planning and renewal; urbanization; suburbia; megalopolis; special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

# 255. Directed Readings in the Community (3)

Prerequisites: Sociology 157 and 164. Selected readings providing comprehensive coverage of the sociological study of human communities.

# 260. Seminar in Research Methods (3)

Prerequisites: Sociology 101 and 164.

Analysis of methods used in current sociological research, including evaluation of reported findings. Discussion of research designs appropriate to particular types of projects. Evaluation of research in progress by members of the seminar. May be repeated with new content. Maximum credit six units applicable on a master's degree.

# 265. Directed Readings in Research Methods (3)

Prerequisite: Sociology 164.

Selected readings providing comprehensive coverage of sociological research methods.
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#### 270. Seminar in Population and Demography (3)

Prerequisites: Sociology 150 and 164.

Demographic theories, fertility, mortality, migration, construction and application of demographic indices, demographic prediction, world population trends, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

#### 275. Directed Readings in Population and Demography (3) Prerequisites: Sociology 150 and 164.

Selected readings providing comprehensive coverage of the fields of population and demography.

297. Research (3) Cr/NC

Prerequisite: Sociology 164.

Independent investigation of special topics.

#### 298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

#### 299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

#### Spanish In the College of Arts and Letters

#### Faculty

Emeritus: Brown, Sender

Professors: Baker, Case, Head (Chairman), Lemus, Walsh Associate Professors: Barrera, Santaló, Segade, Talamantes, Weeter

Assistant Professors: Christensen, Jiménez-Vera, O'Brien, Windsor, 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 foreign languages in the area of Spanish for the single subject teaching credential.

Minor in Spanish.

#### **Spanish Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

Students majoring in Spanish must complete a minor in another field approved by the departmental adviser in Spanish.

Preparation for the major. Spanish 1, 2, 3, 4, 10, and 11. (20 units.)

Major. A minimum of 24 upper division units in Spanish to include Spanish 101A-101B, 102A-102B, and 12 units of upper division electives in Spanish, but not to exceed 3 units from Spanish 140, 141, and 142.

#### **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.

#### Spanish

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

The requirements for the foreign languages major in the area of Spanish for the single subject teaching credential are being revised. For further information consult the department.

#### **High School Equivalents**

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

The first two years of high school Spanish may be counted as the equivalent of Spanish 1; three years the equivalent of Spanish 2, and four years the equivalent of Spanish 3. 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 4; the department recommends, however, that they take Spanish 23.

#### Lower Division Courses

#### 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.

2. Elementary (4) I, II

#### Four lectures and one hour of laboratory

Prerequisite: Spanish 1 or two years of high school Spanish. Continuation of Spanish 1. Not open to students who have completed four years of high school Spanish.

#### 3. Intermediate (4) I. II

Prerequisite: Spanish 2 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.

#### 4. Intermediate (4) I. II

Prerequisite: Spanish 3 or four years of high school Spanish.

Continuation of Spanish 3. Special sections available for the Spanish speaking.

#### 10. Conversation (2) I, II

Prerequisite: Spanish 2 or three years of high school Spanish.

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays.

#### 11. Conversation (2) I, II

Prerequisite: Spanish 10 or Spanish 3, or four years of high school Spanish. Continuation of Spanish 10.

#### 23. Introduction to Literature (3)

Prerequisites: Spanish 4 and 11.

Selected readings from Peninsular and Latin American prose. Oral and written reports and class discussions. Course conducted in Spanish.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101A-101B. Advanced Oral and Written Composition (3-3)

Prerequisites: Spanish 4 and 11

Composition in Spanish, including idiom study and translation of literary passages. 102A-102B. Survey Course in Spanish Literature (3-3)

Prerequisite: Spanish 4. Important movements, authors and works in Spanish literature from the Middle Ages to the present.

### 104A-104B. Spanish-American Literature (3-3)

Prerequisites: Spanish 4 and 11.

Reading from representative Spanish-American authors during the colonial, revolutionary and modern periods. Lectures, class reading, collateral reading and reports.

### 105A-105B. Modern Spanish Drama (3-3)

Prerequisites: Spanish 4 and 11.

The development of the drama of Spain from the beginning of the nineteenth century to the present time.

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#### 106A-106B. Mexican Literature (3-3)

Prerequisites: Spanish 4 and 11.

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.

107. Caribbean Area Countries Literature (3)

Prerequisites: Spanish 4 and 11.

Literature of Caribbean Islands, Central America, Colombia and Venezuela, from colonial period to present. Special emphasis on contemporary era.

108. Andean Countries Literature (3)

Prerequisite: Spanish 4 and 11.

Literature of Ecuador, Peru, Bolivia and Chile from the period immediately preceding the Spanish conquest to today.

109. River Plate Literature (3)

Prerequisites: Spanish 4 and 11.

Literature of Argentina, Paraguay and Uruguay from colonial period to present. 110. Nineteenth Century Spanish Novel and Short Story (3)

Prerequisites: Spanish 4 and 11.

The development of the novel and short story in Spain in the nineteenth century. 111. Twentieth Century Spanish Novel and Short Story (3) Prerequisites: Spanish 4 and 11.

The development of the novel and short story in Spain in 1936, with emphasis on the novel of the generation of 1898.

112. Contemporary Spanish Novel (3) Prerequisites: Spanish 4 and 11.

The development of the novel and short story in Spain since 1936.

130. Poetry of the Spanish Golden Age (3) Prerequisites: Spanish 4 and 11. Major poets of the Siglo de Oro.

131. Prose of the Spanish Golden Age (3) Prerequisites: Spanish 4 and 11. Major prose writers of the Siglo de Oro.

132. Drama of the Spanish Golden Age (3) Prerequisites: Spanish 4 and 11.

The major dramatists of the Siglo de Oro.

140. Spanish Civilization (3)

Prerequisites: Spanish 4 and 11 (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 Humanities 140.

#### 141. Spanish-American Civilization (3)

Prerequisites: Spanish 4 and 11 (except at the Imperial Valley Campus).

Spanish-American cultures, with emphasis on literature, philosophy and the arts. Not open to students with credit in Humanities 141.

#### 142. Mexican Civilization (3)

Prerequisites: Spanish 4 and 11.

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 Humanities 146.

144. Masterpieces of Spanish Literature (3)

Reading selections from major Spanish authors. Taught in English. (Formerly numbered Comparative Literature 144.)

149. Spanish Linguistics (3) Prerequisites: Spanish 4 and 11.

Structural, historical and applied Spanish linguistics.

### 150. Phonetics and Phonemics (3) II

Prerequisites: Spanish 4 and 11 with a grade of C or better.

The sounds of Spanish and of the Spanish phonemic system, with special attention to the problems involved in the teaching of Spanish pronunciation to English-speaking students. 166. Honors Course (1-3) I, II

Refer to Honors Program

170. Spanish-American Poetry (3)

Prerequisites: Spanish 4 and 11.

Spanish-American poetry of the 19th and 20th centuries.

171. Spanish-American Short Story (3) Prerequisites: Spanish 4 and 11. Principal Spanish-American short story writers.

172. Spanish-American Theatre (3)

Prerequisites: Spanish 4 and 11. Principal Spanish-American dramatists and movements.

180. Modern Spanish Poetry (3) Prerequisites: Spanish 4 and 11.

Spanish poetry of the 19th and 20th centuries.

185. Selected Studies in Spanish (3)

Topics in Spanish or Spanish-American language, literature, culture and linguistics. Maximum credit six units.

#### 190. Advanced Grammar (3)

Prerequisites: Spanish 101A and 101B.

Significant systematic features of modern Spanish grammar with analysis of passages from literature. Recommended for credential applicants.

#### 199. Special Study (1-3) I, II

Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in Spanish available in any given semester.

Prerequisite: Consent of instructor.

#### **Graduate Courses**

All graduate courses in the Department of Spanish and Portuguese have a prerequisite of 12 upper division units in Spanish, or consent of instructor.

#### 201. History of the Spanish Language (3)

Prerequisite: Credit or concurrent enrollment in Spanish 149 or 150.

The development of the Spanish language in Spain and Spanish America, with particular attention to the phonology, morphology and syntax of medieval Spanish.

202. Cervantes (3)

The principal prose works of Cervantes: The Novelas ejemplares and Don Quixote.

203. Lope de Vega and Calderón (3) The works of Lope de Vega and Calderón.

204. The Spanish-American Novel (3) The Spanish-American novel to 1935.

205. The Gaucho Epic (3)

The Poesía gauchesca, with particular emphasis on Martín Fierro, Fausto, and Santos Vega. 206. Modernism (3)

The Modernista movement in Spanish America, with special attention to representative poets.

207. Medieval Spanish Literature (3)

Prerequisite: Spanish 201.

The literature of Spain from the earliest extant works to the Celestina.

208. The Modern Spanish Essay (3)

The thinkers, essayists and philosophers of Spain from the generation of 1898 to the present.

209. The Spanish-American Essay (3)

Principal Spanish-American essayists of the 19th and 20th centuries.

210. Contemporary Spanish-American Prose Fiction (3) The principal writers of prose fiction in Spanish America from the mid-thirties to today.

220. Seminar in Spanish Golden Age Literature (3) A representative author, a genre or movement of the Spanish Golden Age. Maximum credit six units applicable on a master's degree.

230. Seminar in the 19th Century Spanish Literature (3) A representative author, a genre or movement of the 19th century in Spain. Maximum credit six units applicable on a master's degree.

240. Seminar in 20th Century Spanish Literature (3)

A representative author, a genre or movement of the 20th century in Spain. Maximum credit six units applicable on a master's degree.

250. Seminar in Spanish-American Literature (3) A genre or movement of Spanish America. Maximum credit six units applicable on a master's degree.

#### Spanish / 363

#### 364 / Speech Communication

255. Seminar in Spanish-American Culture and Thought (3)

Works of representative authors of Spanish America. Maximum credit six units applicable on a master's degree.

270. Applied Spanish Linguistics for Teachers (3)

Prerequisite: Spanish 149 or 150.

The application of linguistic theory to the teaching of Spanish at the secondary and college levels.

290. Research and Criticism (3)

Purposes and methods of research in the fields of the language and literature, including bibliography, literary terms and textual criticism.

### 294. Comprehensive Reading and Survey Course (3)

Prerequisite: Consent of graduate adviser and department chairman.

A study of important movements, authors and works in Spanish Literature. Designed to supplement the reading done in previous courses, in preparation for the comprehensive examination in literature for candidates for the Master of Arts degree.

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

299. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

### **Speech Communication** In the College of Professional Studies

#### Faculty

**Emeritus:** Ackley

Professors: Adams, Benjamin (Chairman), Mills, Samovar Associate Professor: Sanders Assistant Professors: Hunsaker, King, Moore, 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. Single subject teaching credential in English in the area of speech communication. Minor in speech communication.

## **Speech Communication Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Speech Communication 4, 5, 11A, 35 and 60. (15 units.)

Major. A minimum of 27 upper division units to include Speech Communication 135, 150 and 192B. Twelve units selected from Speech Communication 100, 101, 108, 109, 140, 152, 154, 161, 162, 166, 180, 189, 198, 199; or twelve units selected from Speech Communication 100, 106, 109, 130, 137, 166, 175, 189, 191, 198, 199; or twelve units selected from Speech Communication 100, Communication 100, 108, 109, 130, 140, 161, 162, 175, 189, 192A. In addition, six units of electives from departmental offerings.

### **Speech Communication Minor**

The minor in speech communication consists of a minimum of 23 units in speech communication to include Speech Communication 3 or 4, 11A or 11B, 35, 60, and twelve units of upper division electives in speech communication.

#### Speech Communication / 365

### **Speech Communication**

#### For the Single Subject Teaching Credential in English

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education.

This major may be used by the students in Teacher Education as an undergraduate major for the A.B. degree.

The requirements for the single subject teaching credential in English which includes the area of speech communication are being revised. For further information consult the Speech Communication Department.

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.

#### Lower Division Courses

#### 3. Oral Communication (2-3) I, II

Training in fundamental processes of oral expression; method of obtaining and organizing material; outlining; principles of attention and delivery; practice in construction and delivery of various forms of speeches. Speech Communication 3 or 4 recommended in general education. Not open to students with credit for Mexican-American Studies 2A.

#### 4. Intermediate 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 3 or 4 recommended in general education. Not open to students with credit for Mexican-American Studies 2A.

#### 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.

#### 11A. Fundamentals of Interpretation (3) I, II

Literature and principles of its oral presentation by the interpreter.

#### 11B. Intermediate Interpretation (3)

Prerequisite: Speech Communication 11A. 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.

#### 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. (Formerly numbered and entitled Speech Communication 62, Interpersonal Communication.)

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.

#### 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 61 and 161.

### 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.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

## 100. Contemporary Forensics Problems (1-3) I, II

Prerequisite: Speech Communication 60. 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.

#### 366 / Speech Communication

### 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.

#### 106. Organizational Communication (3) I, II

Prerequisites: Six units selected from Speech Communication 3, 4, 135, or 70 and 191, The organization as a communication system; role of the organization in persuasive campaigns; communication strategies and problems within the organizational structure.

#### 108. Advanced Interpretation (3) I, II

Three lecture-demonstrations per week and 32 hours of laboratory per semester.

Prerequisite: Speech Communication 11A.

Analysis of techniques of literary composition as guides to oral interpretation. Achievements of the creative artists as they affect the interpretive artist.

#### 109. Workshop in Speech (1-3)

Study of some problems in speech communication. Maximum credit six units.

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.

#### 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.

137. Empirical Study in Speech Communication (3) I, II

Prerequisite: Six units of speech communication. Recommended: Speech Communication 35.

Philosophy of social science and application to current research in speech communication. Theories and constructs related to communication: analysis of current research literature.

#### 140. Freedom and Responsibilities of Speech (3) I, II

Prerequisite: Speech Communication 60.

In-depth study of the major legal, ethical and political issues concerning communication and free speech in a democratic society.

#### 150. Rhetorical Theory and Criticism to 400 A.D. (3) I, II

An analysis of rhetorical theory and criticism with special attention to Plato, Aristotle, Isocrates, Quintillian, and Cicero. The development of theory and systems of criticism culminating in the application of principles to public address.

#### 152. Rhetorical Theory and Criticism 400 A.D. to 1900 (3) I, II

Prerequisite: Speech Communication 150.

An analysis of rhetorical theory and criticism with special attention to Longinus, Vives, Ramus, Cox, Bacon, Campbell, Whately, Blair, and James. The development of theory and systems of criticism culminating in the application of principles to public discourse.

#### 154. Contemporary Rhetorical Theory and Criticism (3) I. II

Prerequisite: Speech Communication 150.

An analysis of rhetorical theory and criticism in the twentieth century with special attention to Arnold, Bitzer, Burke, Hochmuth, and Winans. A unified body of principles for rhetorical theory and criticism will be derived and applied to contemporary discourse.

### 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 61 and 161. 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.

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

Refer to Honors Program.

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.

180. American Public Address (3) I, II

Public discourse from the colonial period to the present.

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.

#### 191. Group Communication (3) I. II

Prerequisite: Speech Communication 70.

The theoretical processes of small group communication. Emphasis on the theory of group formation, interaction, procedures and leadership.

192A. Advanced Public Speaking (3) I

Prerequisite: Speech Communication 4.

The preparation and delivery of longer speeches. Study of classic models of public address. 192B. Persuasion (3) I. II

Prerequisite: Speech Communication 4.

Persuasion with emphasis on psychological principles. Research project on a significant problem. Oral performance required.

#### 194. History of Public Address (3) II

Prerequisite: Speech Communication 4.

Speakers and speaking from Ancient Greece to the present. Functions of public speaking in the growth and development of ideas, ideals and institutions.

198. Selected Topics in Speech Communication (1-3) 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.

#### 199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

#### **Graduate** Courses

#### 200. Research and Bibliography (3)

Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to speech communication. Recommended for first semester cf graduate work, and prerequisite to advancement to candidacy

#### 208. Seminar in Oral Interpretation (3)

Prerequisite: Speech Communication 108.

Aesthetic discipline applied to oral interpretation of various forms of literature. Analysis of thought and emotional content, and aesthetic form. Investigation of advanced problems of delivery. May be repeated with new content. Maximum credit six units.

#### 230. Seminar in the Analysis of Language (3)

Prerequisite: Speech Communication 130.

Special problems in language theory which may be integrated into the larger bodies of rhetorical and communication theory.

235. Seminar in Communication Theory (3)

Prerequisite: Speech Communication 135.

Theories of communication; communication models, codes, perception and effects.

#### 250. Seminar in Rhetorical Theory (3)

Leading figures in rhetorical theory from Plato to contemporary theorists. Special attention given to the application of theory to public address.

#### 251. Seminar in Rhetorical Criticism (3)

Major systems of speech criticism. Special attention to measuring the effectiveness of a given piece of discourse in terms of actuality and potentiality.

#### 262. Seminar in Argumentation (3)

Prerequisite: Speech Communication 162.

Significant topics in argumentation: the formulation of problems for argument; analysis; the brief with patterns of argument, traditional and recent; presumption; probability; laws of evidence; fallacies.

280. Seminar in Public Address, 1600-1850 (3)

Examination of the problems confronting American speakers and the solutions they offered. Special emphasis placed on the rhetorical means used to solve major crises in American history.

## 281. Seminar in American Public Address, 1850 to Present (3)

Examination of the problems confronting American speakers and the solutions they offered. Special emphasis placed on the rhetorical means used to solve major crises in American history

#### Speech Communication / 367

#### 368 / Speech Pathology and Audiology

282. Seminar: Contemporary American Public Address (3) Prerequisite: Speech Communication 192A or 192B.

290: Experimental Procedures in Speech Communication (3)

Prerequisites: Credit or concurrent registration in Speech Communication 192B and 200. Examination and evaluation of appropriate experimental procedures and traditional methods; special problems in research design.

291. Seminar in Group Discussion Theory (3)

Prerequisite: Speech Communication 191.

A study of descriptive and experimental literature on group discussion covering such topics as interaction, leadership, and means of evaluation.

292. Seminar in Persuasion (3) I. II

Prerequisite: Speech Communication 192B.

Contemporary theories and models of persuasion, methods of assessing persuasive effect, and analysis of research literature.

293. Seminar: Greek and Roman Public Address (3) Prerequisites: Speech Communication 150, and 192A or 192B.

294. Seminar: 18th Century British Public Address (3) Prerequisite: Speech Communication 192A or 192B.

298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units. Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

## Speech Pathology and Audiology

In the College of Professional Studies

The clinical services area is accredited by the American Speech and Hearing Association. Faculty

Emeritus: Earnest, Pfaff

Professors: Kopp (Chairman), Nichols, Riedman Associate Professors: Dimmick, Thile Assistant Professors: Allen, Sanchez, Wood Lecturers: Ellis, Reed, Shamasko

Offered by the Department

Master of Arts degree in speech pathology and audiology. Major in speech pathology and audiology with the A.B. degree in applied arts and sciences. Minor in speech pathology and audiology.

Restricted Credential, Speech and Hearing Specialist (Plan II).

### Speech Pathology and Audiology Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with the major.

Preparation for the major. Mathematics 3 (or qualification on the mathematics placement examination); Physics 5; Psychology 1, 50, and 70; Speech Communication 3 or 4; Speech Pathology and Audiology 4, 5, and 6. (26-27 units.)

Major. A minimum of 24 upper division units in speech pathology and audiology selected with the approval of the adviser. Those with an emphasis in the area of deaf education must include Education 167, 172, and 179 to complete their major.

### Speech Pathology and Audiology Minor

The minor in speech pathology and audiology consists of a minimum of 18 units in speech pathology and audiology, ten units of which must be in upper division courses. The following are required: Speech Pathology and Audiology 4, 5, 6, 121, 140, 142; and three units selected from 120, 122, 124, or 151.

#### Speech Pathology and Audiology / 369

### **Restricted Credential: Speech and Hearing Specialist**

This is a five-year program leading to a credential which authorizes service in all grades in the area specified. It requires the same lower division courses as are required in the preparation for the major in speech pathology and audiology, a bachelor's degree, and completion of the following courses: Education 101 (or 202) and 167; Psychology 106; Speech Pathology and Audiology 120, 121, 122, 123, 124, 126, 127, 128, 129, 140, 145, 151; and 15 units, chosen with approval of the adviser, from Speech Pathology and Audiology 130, 131, 132, 141, 142, 143, 145, 146, 147, 150, 152, 153, 190, 198, 201, 202, 203, 204, 205, 206, 226, 228, and 254. Two courses may be selected from 156, 157, 240, 244, 245, 246, 249, 256, 257.

#### Lower Division Courses

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.

#### 5. Survey of Audiology (2) I

Audiology in diagnosis and rehabilitation of hearing impairment, medical practice, hearing conservation and research. Fifteen hours of observation required.

#### 6. Language, Speech and Hearing Disorders (3) I. II

Normal growth and development and its relationship to language, speech and hearing development and disorders, covering all areas of exceptionality. Fifteen hours of observation or project required.

7. Management of Clinical Activities (1) I, II

Assisting in the operations of the speech and hearing clinic. Maximum credit two units. (Formerly numbered Speech Pathology and Audiology 101.)

8. Oral Communication Laboratory (1) I, II

#### Two hours of laboratory.

Individual laboratory training on specific speech problems. Student chosen through testing by Department of Speech Pathology and Audiology. (Formerly numbered Speech Pathology and Audiology 3.)

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

105. Language and Speech Development and Disorders (3) I, II

Normal development of speech and language; prevention and remediation of communication disorders commonly found in the classroom. Five hours of observation required per semester. For students not majoring in speech pathology and audiology.

Auditory and kinesthetic analysis of the sounds of the English language. Problems of foreign and bilingual dialect.

## 121. Anatomy, Physiology and Pathology of Speech (3) I, II Prerequisites: Speech Pathology and Audiology 6 and 123.

Anatomy, physiology and pathology of speech. Survey of aphasia, cerebral palsy, cleft palate, voice disorders, including study of multiply handicapped child. Twenty hours of observation required.

### 122. Functional Communication Disorders (3) I

Prerequisite: Speech Pathology and Audiology 121.

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.

123. Mechanics of Speech Production (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Psychology 50 or Zoology 8. Anatomy and physiology of the head, neck and thorax related to speech. Laboratory experiences. Demonstrations using charts, models, histological materials and cadavers.

### 124. Methods of Speech Therapy (3) I

Prerequisite: Speech Pathology and Audiology 121. 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.

#### 370 / Speech Pathology and Audiology

#### 126. Clinical Practice in Speech Pathology (1-3) I, II, S

Two hours for each unit of credit. Prerequisites: Speech Pathology and Audiology 120, 124, and three upper division units in speech pathology and audiology.

Supervised practice with representative speech problems. Maximum combined credit, eight units for Speech Pathology and Audiology 126, 145, 146 and 226. One unit represents 26 hours of direct clinical practice.

#### 127. Diagnostic Methods in Speech Pathology (3) I, II

Prerequisites: Speech Pathology and Audiology 120, 121, and 140, and credit or concurrent registration in Speech Pathology and Audiology 126. 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.

#### 128. Diagnostic Practicum in Speech Pathology (3)

Prerequisite: Speech Pathology and Audiology 127.

Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment. Practicum minimum of six hours.

#### 129. Speech Therapy in the Public Schools (3) I

Prerequisites: Speech Pathology and Audiology 124 and 127. Minimum of 50 hours of supervised clinical practicum.

Goals, materials and procedures for organizing and administering speech, language and hearing programs in the schools. Fifteen hours of observation and 15 hours of screening required. Should be taken the semester before Speech Pathology and Audiology 133.

130-S. Family Communication Dynamics (3) S

Prerequisites: Speech Pathology and Audiology 122 and 126.

The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.

#### 131. Language Structure (3)

Prerequisite: Speech Pathology and Audiology 6.

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.

132. Assessment of Language Disorders (3) I, II

Prerequisite: Speech Pathology and Audiology 131. Identification of semantic and structural features of language.

#### 133. Clinical Practice in Public Schools (4) I, II Cr/NC

Prerequisites: Speech Pathology and Audiology 129 and four units of practica. Clinical practice in elementary or secondary schools or community colleges in speech pathology. Applies only toward Restricted Credential, Speech and Hearing specialist.

#### 140. Audiometry: Principles (3) I, S

Prerequisite: Psychology 50, Speech Pathology and Audiology 5. Anatomy and physiology of the human ear, theories of hearing, physics of sound, medical aspects, pathology and surgery of the ear, survey of current audiometric techniques.

141. Audiometry: Application (3) II Two lectures and two hours of laboratory

Prerequisite: Speech Pathology and Audiology 140.

Tuning fork assessment, speech testing, masking, tests for nonorganic and for sensorineural hearing loss, industrial audiometry and hearing aid evaluation.

#### 142. Techniques of Audiometry (1-3) I, II

Three hours of laboratory per unit.

Prerequisite: Credit or concurrent registration in Speech Pathology and Audiology 140. Provides the laboratory experience necessary for the California School Audiometrist Certificate when taken concurrently with 140. Duplicates classic auditory experiments when taken in conjunction with 143 or 244. Maximum credit three units.

#### 143. Hearing Amplification (1-3) II

Prerequisites: Speech Pathology and Audiology 141.

Specific application of amplification for rehabilitation of the impaired hearing mechanism; devices, methods for their evaluation, historical perspective and practical considerations.

145. Clinical Practice in Audiologic Assessment (1-3) I, II, S

Prerequisite: Speech Pathology and Audiology 141

Supervised procedures with pure tone, speech, and special audiologic testing. Maximum combined credit eight units for 126, 145, and 146. One unit represents 26 hours of direct clinical practice.

#### Speech Pathology and Audiology / 371

146. Clinical Practice with Hard of Hearing (1-3) I, II, S

Prerequisite: Speech Pathology and Audiology 151.

Supervised practice with hard of hearing clients at San Diego State University, Maximum credit eight units for 126, 145, and 146. One unit represents 26 hours of direct clinical practice. 147. Hearing Conservation (3) I

Prerequisite: Speech Pathology and Audiology 141.

Noise measurement, analysis and reduction and its effects on hearing and communication. Damage risk criteria and methods of hearing protection.

#### 150. Education of Deaf Children (3) I

Educational programs, services and resources for hearing impaired; historical background, philosophy, sociological and psychological problems.

#### 151. Speech Reading and Auditory Training (3) I, II

Prerequisites: Speech Pathology and Audiology 120 and 140.

Theory and methods of speech reading; auditory training techniques including survey of amplification systems. Twenty-six hours observation in programs for deaf, severely hard of hearing.

#### 152. Speech for the Hearing Impaired (3) II

Prerequisites: Speech Pathology and Audiology 123, 131, and 151.

Theory and practice of speech habilitation of hearing impaired. Includes evaluation of current research and application in developing cognitive and motor processing.

153. Language for the Hearing Impaired (3) I

Prerequisites: Speech Pathology and Audiology 131 and 151.

Significant theories and research in language development as applied to hearing impaired individuals.

#### 156. Field Work with the Deaf (1-3) I, II

Two hours for each unit of credit.

Prerequisites: Speech Pathology and Audiology 152 and 153. Supervised experience in auditory training, lipreading, speech therapy and language building, with individual cases. Maximum credit six units.

#### 157. Clinical Practice with the Deaf (1-2) I, II

Prerequisites: Speech Pathology and Audiology 152 and 153.

Supervised therapy with representative deaf problems in the San Diego State University Speech and Hearing Clinic. Maximum combined credit six units for 156 and 157.

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.

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

Refer to Honors Program.

190. Workshop in Speech Pathology and Audiology (1-3) I, II

Study of some problem in speech pathology or audiology. Maximum credit six units. 198. Selected Topics in Speech Pathology and Audiology (1-3) 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.

199. Special Study (1-3) I, II Individual study. Maximum credit six units.

Prerequisite: Consent of instructor.

#### **Graduate Courses**

200. Research and Bibliography (3)

Bibliographic techniques in methods and exposition of research in the fields of speech pathology and audiology. Recommended for the first semester of graduate work, and prerequisite to advancement to candidacy.

201. Vocal Science (3)

Prerequisite: Speech Pathology and Audiology 120. Relationship of basic principles of sound to the speech mechanism. Analysis of speech sound production. Application of mechanical electronic equipment to speech.

202. Problems of Aphasia (3)

Prerequisite: Speech Pathology and Audiology 121.

Evaluation of aphasia, familiarity with diagnostic tools, theories of aphasia, and therapy for persons with disorders of symbolization (adult and congenital aphasia). It is recommended the student take one unit of Speech Pathology and Audiology 226 concurrently with this course.

#### 372 / Speech Pathology and Audiology

#### 203. Problems of Cerebral Palsy (3)

Prerequisities: Speech Pathology and Audiology 123 and 124.

Evaluation, theories of treatment and therapy for persons with speech disorders in cerebral palsy. It is recommended the student take one unit of Speech Pathology and Audiology 226 concurrently with this course.

#### 204. Problems in Cleft Palate and Orofacial Anomalies (3)

Prerequisites: Speech Pathology and Audiology 123, 124, and 140. Minimum of 75 hours of supervised clinical practicum.

Etiological considerations, evaluation and remediation of individuals with orofacial anomalies and cleft palate. Concurrent registration in Speech Pathology and Audiology 226 is recommended.

#### 205. Problems of Stuttering (3)

Prerequisite: Speech Pathology and Audiology 122.

Differential diagnosis of stuttering, individual and group therapy for children and adults with dysfluency problems. It is recommended the student take one unit of Speech Pathology and Audiology 226 concurrently with this course.

#### 206. Problems of Voice Pathology (3)

Prerequisites: Speech Pathology and Audiology 123 and 124.

Structural medical and functional voice problems. Differential diagnosis of vocal anomalies, theories and therapy for vocal problems. It is recommended the student take one unit of Speech Pathology and Audiology 226 concurrently with this course.

226. Advanced Clinical Practice in Speech Pathology (1-2)

Two hours for each unit of credit.

Prerequisite: Speech Pathology and Audiology 124.

Supervised work with representative advanced speech cases such as stuttering, aphasia, laryngectomies, etc. Maximum credit four units. Maximum credit four units of 226, 245, and/or 246 applicable on a master's degree.

228. Advanced Diagnostic Methods in Speech Therapy (3)

Prerequisite: Speech Pathology and Audiology 128.

Diagnosis of individuals with complicated speech problems as brain injury, congenital aphasia, adult aphasia, cerebral palsy, hearing loss, laryngectomy, mental retardation, stuttering and voice problems.

240. Medical Audiology (3) Prerequisites: Speech Pathology and Audiology 145 and 244. Problems of diagnosis, referral and report writing. Testing in a medical setting and medically significant hearing pathologies.

#### 244. Audiology (3)

Prerequisite: Speech Pathology and Audiology 141.

Psychophysical concepts underlying clinical audiology. Relationship of audiologic test results to the conditions under which they were obtained.

#### 245. Advanced Clinical Practice in Audiologic Assessment (1-2)

Two hours for each unit of credit.

Prerequisite: Speech Pathology and Audiology 244.

Advanced casework in hearing evaluation. Maximum credit four units. Maximum credit four units of Speech Pathology and Audiology 226 and 245 applicable on a master's degree.

246. Advanced Clinical Practice with Hard of Hearing (1-2)

Two hours for each unit of credit.

Prerequisite: Speech Pathology and Audiology 151. Supervised practice with problem hearing cases. Maximum credit four units of Speech Pathology and Audiology 226, 245, and 246 applicable on a master's degree.

249. Seminar in Audiology (3) Prerequisite: Speech Pathology and Audiology 244. Major research in clinical audiology. Audiologic techniques used in differential diagnosis. Maximum credit six units applicable on a master's degree. (Formerly numbered Speech Pathology and Audiology 250.)

#### 254. Physiological Phonetics (3)

Prerequisite: Speech Pathology and Audiology 152.

Physiology underlying the production of continuous speech, including transitional movements, based on a syllabic concept. (Formerly numbered Speech Pathology and Audiology 154.)

### 256. Advanced Field Work with the Deaf (1-3)

Two hours for each unit of credit.

Prerequisites: Speech Pathology and Audiology 152 and 153.

Supervised clinic practicum at an advanced level with representative deaf cases. Maximum credit six units of Speech Pathology and Audiology 256 and 257 applicable on a master's degree.

257. Differential Diagnosis of the Hearing Impaired (3) Prerequisite: Speech Pathology and Audiology 6, 127, 150, or 151.

Diagnosis of multiply-handicapped, hearing-impaired children, including clinical teaching; assessment methods; materials and equipment; prognosis; current philosophies and trends. Maximum credit six units of Speech Pathology and Audiology 256 and 257 applicable on a master's degree. Twenty-six hours of observation are included.

#### 258. Seminar in Deaf Education (3) II

Prerequisites: Speech Pathology and Audiology 150, 156; Education 179.

Problems of deafness, evaluation of research, interdisciplinary approach to habilitation. 297. Research (2) Cr/NC

Prerequisite: Advancement to candidacy and consent of the graduate adviser.

Research in speech pathology, deaf education or audiology. Maximum credit two units applicable on a master's degree.

298. Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

## **Study Skills**

#### Administered by the Dean of Student Affairs

Faculty

Assistant Professor: Crafts (Acting Chairman), Denman Lecturers: Dirks, Hallahan, McFall, Smith

Offered by the Study Skills Center

Courses in Study Skills.

Major or minor work in Study Skills is not offered.

#### Lower Division Courses

R. Reading Laboratory (0) I, II Cr/NC

A semitutorial service for students wishing to improve reading ability or secure individual help with study problems. Open to students at any level of college work.

S. Spelling (0) I, II Cr/NC

A semitutorial service for students wishing to improve their spelling through an intensive review of principles and practice. Open to students at any level of college work.

#### W. Writing Laboratory (0) I, II Cr/NC

A semitutorial service for students wishing assistance in composition, either remedial or advanced. Open to students at any level of college work.

#### 99. Experimental Topics (0-4)

Refer to the catalog statement on Experimental Topics on page 106. 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.



## Telecommunications and Film / 375

## **Telecommunications and Film**

In the College of Professional Studies

#### Faculty

Professors: Jones, Lee, Madsen

Associate Professors: Anderson, Heighton, Jameson (Chairman), Johnson, Martin, Wylie Assistant Professors: Meador, Misiorowski

#### 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 on page 60 of this catalog.

The A.B. degree is designed for students interested in developing a more liberal education as they develop competency in, and understanding of, radio, television and film. The A.B. degree permits flexible programs utilizing courses in and out of the department which will prepare students in such broad areas as design for television and film, media communications theory, broadcast advertising, instructional radio and television, and the like.

A minor is required with this major.

Preparation for the major. Telecommunications and Film 1, 2A-2B, 10, 30, 67 and 83. (23 units.)

Major. A minimum of 24 upper division units in telecommunications and film to include Telecommunications and Film 101 or 105, 162, and 18 units of electives selected with the approval of the department. No more than 48 units in telecommunications and film may be counted toward the 124 units required for graduation.

## **Radio-Television Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog.

The B.S. degree is designed to prepare students for professions in radio, television and film or for occupations where extensive knowledge of these media is required. A minor is not required with this major.

Preparation for the major. Telecommunications and Film 1, 2A-2B, 10, 30, 67 and 83. (23 units.)

Major. A minimum of 36 upper division units to include Telecommunications and Film 162, a core professional sequence, and a minimum of six units in an allied professional sequence; five to nine units of electives as required.

### Core Professional Sequences.

TV Production: Telecommunications and Film 101 or 105, 110, 156, 180, 183, 184. (21 units.) Management: Telecommunications and Film 101, 103, 105, 112, 130, and Psychology 122. (18 units.)

Film: Telecommunications and Film 110, 150, 156, 160 or 164, 168A-168B, 180. (22 units.)

Allied Professional Sequences. (Courses taken in Core Professional Sequences cannot be counted toward the Allied Professional Sequence.) Advertising: Telecommunications and Film 103, 104, Business Administration 150, 153,

Journalism 153, 156, 180, and Psychology 120. Art: Art 107, 114A, 114B, 190, and Industrial Arts 115.

Communication: Speech Communication 135, Journalism 117, 121 and 162.

Criticism: Humanities 138, Music 151, Philosophy 142, Comparative Literature 152, and Speech Communication 154.

Education: Telecommunications and Film 170, Education 101, 111, 112, 140, 141 and 144. Industrial Arts: Industrial Arts 161, 162, 163. Information Systems: Business Administration 184, 185, 186 and 188.

International Media: Telecommunications and Film 108, 163, and Journalism 118. Law and Government: Telecommunications and Film 105, Journalism 102, Political Science 116, 130, 138, 139A-139B.

Management: Telecommunications and Film 101, Business Administration 132, 140, 143 and 145.

Mass Communication: Speech Communication 135, Sociology 145, 146, Journalism 121, 162, and Psychology 122. News: Telecommunications and Film 105, 112, and Journalism 102, 124 and 125.

Performance: Telecommunications and Film 140, 181, Drama 131, 132, and Speech Communication 108.

Playwriting: Telecommunications and Film 110, Drama 120, 122, English 136 and 171. Research Methods: Psychology 105, 120, 122, Journalism 177, Sociology 160 and 164.

Scene Design: Telecommunications and Film 150, 156, Drama 140A and 148.

## **Radio-Television Minor**

The minor in radio-television consists of a minimum of 15 units in telecommunications and film to include Telecommunications and Film 1, and at least six units in upper division

Lower Division Courses

### 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.

2A-2B. Telecommunications Production (4-4) I, II

Two lectures and six hours of activity.

Prerequisite: Limited to Telecommunications and Film majors.

Technical practices and aesthetic considerations of visual and sound productions. Control room, studio and auxiliary equipment.

10. Broadcast Writing (3) I, II

Two lectures and more than three hours scheduled activities.

Theory and practice in writing materials for oral presentation. Problems of timing and pacing, conversational expression and word color.

#### 30. Radio Production (3) I, II

Two lectures and more than three hours of activity.

Prerequisite: Telecommunications and Film 2A-2B.

Theory of radio production augmented by practice in program planning and production for KPBS-FM.

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.

83. Television Production and Directing (3) I, II

Two lectures and more than three hours of activity.

Prerequisites: Telecommunications and Film 2A-2B and 10, 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.

#### 99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

101. Broadcast Management (3) I, II

Prerequisites: Telecommunications and Film 1, 30 and 83.

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.

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.

#### 104. Broadcast Commercial Practices (3) II

Prerequisites: Telecommunications and Film 30, 83, 103 and permission of instructor. Planning and execution of broadcast advertising and promotion campaigns; creative strategy and production techniques; use of research; campaign evaluation.

### 105. Regulation of Broadcasting (3) I, II

Prerequisite: Telecommunications and Film 1. Responsibilities of broadcasters as prescribed by law, governmental policies and regulations, and significant court decisions.

#### 108. International Broadcasting (3) II

Prerequisite: Telecommunications and Film 101 or 105.

Comparative study of broadcasting in various world areas; economic, social and political determinants of broadcasting patterns.

### 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.

#### 110. Script Writing for Broadcasting and Film (3) I, II

Prerequisite: Telecommunications and Film 83.

Development of a single program and series ideas. Scripting of dramatic original and adaptation forms, and the documentary.

112. Radio and Television News Writing and Editing (3) I, II (Same course as Journalism 104.)

Gathering, writing and editing news in special forms required by radio and television.

#### 130. Radio Programming (3) II

Two lectures and more than three hours of scheduled activity.

Prerequisites: Telecommunications and Film 1 and 30.

Formats, policies, production practices and research in modern programming. Student work is broadcast on KPBS-FM.

#### 140. Broadcast and Film Performance (3) I

Two lectures and more than three hours of activity.

Prerequisites: Drama 10 or Speech Communication 11A, and Drama 30.

Preparation and delivery of materials before the microphone and camera. Practical experience in University-sponsored productions. (Formerly numbered Telecommunications and Film 90.)

### 150. Lighting for Television and Film (3) I, II

Two lectures and three hours of laboratory.

Theory and application of such aspects as color, temperature, light sources and film emulsions, filters and design of values and colors, and factors of electronic transmission. Practical experience in University-sponsored productions.

### 156. Advanced Lighting and Staging for Television and Film (4) I, II

One lecture and more than nine hours of activity. Prerequisite: Telecommunications and Film 2A-2B.

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.

160. Film Classics (3) I, II Two lectures and three hours of activity.

Prerequisite: Upper division standing.

Viewing and analysis of those American and foreign theatrical films, particularly of the sound era, which represent milestones in the development of the cinema. May be repeated with new content. Maximum credit six units.

### 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.

162. Film Techniques (3) I, II Two lectures and three hours of activity Prerequisite: Telecommunications and Film 2A-2B. 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. 163. International Cinema (3) I Prerequisite: Telecommunications and Film 67. Foreign feature films as expressions of national attitudes. 164. Documentary and Propaganda Film (3) I Two lectures and three hours of activity. Prerequisite: Telecommunications and Film 67. Viewing and analysis of the major conceptual forms and cinematic techniques of these genres from 1922 to the present. 165. Animated Film Techniques (3) I. II Two lectures and three hours of activity. Screening of representative examples and production of a filmograph or animated motion picture. Practical experience in University-sponsored productions. 166. Honors Course (1-3) I. II Refer to Honors Program. 168A-168B. Film Production (3-3) I. II One lecture and six hours of activity. Prerequisite: Telecommunications and Film 162. Telecommunications and Film 168A is prerequisite to 168B. Advanced practicum in film production. Studio and location work in the preparation of filmed materials, and complete nontheatrical films. 170. Educational Telecommunications (3) I Prerequisite: Telecommunications and Film 1. The role of instructional and public broadcasting in the United States; utilization of telecommunications in the classroom and industrial training programs. 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.

#### 172-S. Workshop in Educational Television (6) S

(Same course as Education 143-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.

#### 180. Directing Television and Film Drama (3) I, II

Two lectures and three hours of activity.

Planned for prospective directors of plays for television and film. The student will become acquainted with principles, procedures and methods. Practical experience in University-sponsored productions.

#### 181. Acting for TV and Film (3) I, II

Two lectures and three hours of activity.

Prerequisite: Drama 30.

productions.

Interrelationship between acting and the various media-radio, television, film. Experience in film and television productions. Practical experience in University-sponsored productions.

183. Advanced Programing and Development for Television (4) I, II

One lecture and more than nine hours of activity.

Prerequisites: Telecommunications and Film 110, 162, 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

#### 184. Advanced Television Directing (4) I, II

One lecture and more than nine hours of activity

Prerequisites: Telecommunications and Film 1, 83, 162, 180 and consent of instructor. Presentational techniques and individual projects in the direction and production of television programs. Practical experience in University-sponsored productions.

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#### 195. Workshop in Broadcasting (1-3) I, II

Study of some problem in radio, television or film. Maximum credit six units.

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.

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

#### **Graduate Courses**

#### 200. Research and Bibliography (3)

Basic reference works, scholarly and critical journals; bibliographical techniques; exercises and problems in methods and exposition of research as it relates to the various areas of telecommunications and film. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.

#### 201. Seminar in Broadcast Management (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film. The legal and regulatory milieu of broadcasting from the perspective of station management.

#### 202. Seminar in Broadcast Advertising Problems (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film. Analysis of the social, economic and cultural context of advertising in commercial broadcasting; criticism and evaluation of the function of the advertiser; survey of broadcast advertising theory and research.

#### 203. Seminar in History of Broadcasting (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film. The development of broadcasting in its social, legislative and economic settings, with emphasis on broadcasting in the U.S.

#### 205. Mass Communications Research (3)

Prerequisite: Telecommunications and Film 200.

Design and execution of a media research project; audience and message analysis; experimental design and survey research methodology.

#### 207. Seminar in Broadcast Law and Regulations (3) I

Prerequisite: Telecommunications and Film 105.

Analysis of legal concepts and issues as applied to commercial and noncommercial broadcasting; relationship of local, state and federal government to broadcast media.

#### 210. Seminar in Writing for Broadcast and Film (3)

Prerequisites: Telecommunications and Film 110, 162 and 163.

Dramatic structures as they apply to broadcasting and cinema. Writing a full-length script or scenario.

#### 212. Criticism of Broadcasting and Cinema (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film. Standards for objective appraisal of the ethical and artistic aspects of radio, television and film programs.

#### 268. Directing the Dramatic Film (3)

Prerequisites: Telecommunications and Film 168B, 180 and consent of instructor.

Analysis of techniques and stylistic contributions of major directors as seen in their films. Production of a short dramatic film embodying concepts so learned.

#### 270. Seminar in Educational Telecommunications (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film or educational technology.

Educational uses of electronic media. Use of telecommunications in classrooms and school systems. Relationship of noncommercial radio and television (public broadcasting) to commercial broadcast media and education.

#### 272. Seminar in Mass Communication Theory (3)

Prerequisite: Speech Communication 135.

Analysis of theoretical models of mass communication. Application of operational models for the diffusion of information, and the adoption of innovation, to problems in the mass media.

#### 273. Mass Communications Message Design (3)

Prerequisite: Speech Communication 135.

Selection and organization of message design elements in the mass communications media. Analysis of different effects of various types of mass communications formats, presentations, and systems on individuals and groups.

275. Teaching Broadcasting and Film (3) Broadcast and film curriculum development. Methods of teaching both theory and laboratory courses in broadcasting and film. Analysis of organizations for administering broadcast and film curricula in colleges and universities with public TV stations and/or on-campus instructional TV systems.

### 284. Seminar in Programing and Production (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film. Theory and analysis of programing and production of broadcasting.

298. Special Study (1-3) Cr/NC Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

### Women's Studies

Administered by the Dean of the College of Arts and Letters

#### Offered by Women's Studies

Courses in Women's Studies.

Major or minor work is not offered.

#### Lower Division Courses

#### 10. Introduction to Women's Studies (3)

Effects of formal and informal social, economic and political institutions on women from infancy to old age.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

100. Women in Comparative Cultures (3) I, II

Women's life styles (value systems, self-image, and world view) from least to most differentiated societies. Impact of women's autonomy and influence on different family models, kinship systems and economic patterns. Women's roles and behavior in cooperative versus individualistic societies.

#### 120. Self-actualization of Women (3) I, II

Self-actualization psychology, emphasizing individual uniqueness and the maximization of human potential; theories of human behavior as they are applied to women; development of women's self-concept in American society.

#### 125. Psychological Aspects of Women (3) I, II

Prerequisite: Women's Studies 120.

Prevalent theories of the psychological aspects of women in light of recent developments in the theory of sexuality, readings from Women's Liberation and experiences as women. Development of new methods of research and therapy which will aid women.

#### 130A-130B. Contemporary Issues in the Liberation of Women (3-3) I, II

Prerequisite: One course in women's studies.

The movement to win greater political, social and economic equality for women. Semester I: The development and continuing of the Women's Movement evolution. Semester II: Racism and sexism-relationship to the Women's Movement.

#### 140. Women in History (3) I, II

A survey of the social, cultural, economic and intellectual history of women; origins of women's roles.

#### 141A-141B. Women in American History (3-3)

A survey of the social, cultural, economic, political and intellectual history of women in America. Semester I: To 1920. Semester II: Since 1920.

#### 150A-150B. Women in Literature (3-3) I, II

Semester I: Images, roles and identities of women found in literature, their sociological and political implications. Semester II: Famous female writers; the treatment of women as literary artists.

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#### 151. Women in the Arts (3) I

Images of women in the arts. Discussion on how these images reinforce ideas such as male dominance, the nuclear family, monogamy, and female stereotypes.

160. Human Sexuality (3) I, II

Biological criteria in sex role determination; the relationship of sexual mores and customs to a person's self-concept of sexuality; the relevance of current scientific investigations of the psychophysiology of human sexual response.

170. Women and the Law (3) I. II

Prerequisite: One course in women's studies.

The legal status of women in employment, education, health and welfare, property ownership, criminal justice, abortion, rape and prostitution.

180. Status of Women Under Various Economic and Political Systems (3) I, II

Historical and contemporary institutional factors influencing the social and political status of women under various economic systems; economic implications of alternatives to expected patterns of women's behavior and institutional arrangements.

190. Women and Education (3) I, II The educational process and female role socialization; research into personnel policies and curriculum. New learning methods and environments, e.g., women's studies programs, child care centers, and "free" schools.

198. Field Experience (3) I, II

Prerequisite: One course in women's studies.

Exploration and analysis of sex discrimination in public and private agencies in the San Diego area as they relate to women through supervised experience and observation; understanding principles and utilizing skills in organizing and effecting change. Maximum credit six units.

#### Zoology In the College of Sciences

#### Faculty

Emeritus: Crouch, Harwood, Kaston

Professors: Atkins, Bohnsack, Carpenter (Chairman), Cohn, Dexter, Estes, Etheridge, Huffman, Hunsaker, McLean, Monroe, Norland, Olson, Wilson Associate Professors: Catlett, Chen, Collier, Cooper, Lillegraven, Plymale

Assistant Professor: Krekorian Lecturer: Avila

#### Offered by the Department

Master of Arts degree in biology with an emphasis in zoology. Master of Science degree in biology with an emphasis in zoology. Major in zoology with the A.B. degree in liberal arts and sciences. Major in zoology with the B.S. degree in applied arts and sciences. Single subject teaching credential in life sciences in the area of zoology. Minor in zoology.

#### **Zoology Major**

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 60 of this catalog. To satisfy the requirement in foreign languages, it is strongly recommended that students select French, German or Russian. A minor is not required with this major.

Preparation for the major. Biology 1, 2 and 15; Zoology 50, and 60 or 106; Chemistry 1A-1B, and 11 or 12; Physics 1A-1B or 2A-2B; Mathematics 21 or 40. (38-42 units.) Recommended: Mathematics 22 or 50, and Physics 3A-3B if 2A-2B is taken.

Major. A minimum of 24 upper division units to include Biology 101 or Zoology 140; Biology 110 and 155; Botany 100 or 101 or 102 or 103; plus at least two upper division zoology courses with a laboratory.

### **Zoology Major**

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 60 of this catalog. A minor is not required with this major.

Preparation for the major. Biology 1, 2 and 15; Zoology 50, and 60 or 106; Chemistry 1A-1B, and 11 or 12; Physics 1A-1B or 2A-2B; Mathematics 21 or 40. (38-42 units.) Recommended: Mathematics 22 or 50, and Physics 3A-3B if 2A-2B is taken.

Major. A minimum of 36 upper division units, 28 of which must be in biology, botany, microbiology and zoology, to include the following: Biology 101 or Zoology 140; Biology 110 and 155; Botany 100 or 101 or 102 or 103, plus at least two upper division zoology courses with a laboratory. Units to complete the major must be selected with the approval of the adviser; up to eight upper division units can be in chemistry, geology, mathematics, physics or other area relevant to the student's interests and approved by an adviser.

#### Zoology Minor

The minor in zoology consists of a minimum of 15 units in biological sciences, six units of which must be in upper division courses. Approval of zoology adviser is required.

#### Zoology

#### For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of this catalog on the School of Education. The requirements for the single subject teaching credential in life sciences in the area of

zoology are being revised. For further information consult the adviser for biological sciences teaching programs.

Lower Division Courses 8. Human Anatomy (4) I, II Two lectures and six hours of laboratory.

Prerequisite: An introductory course in high school or college biology or zoology. Systems of the human body and their interrelationships.

50. Invertebrate Zoology (4) I, II

- Two lectures and six hours of laboratory.
- Prerequisites: Biology 1 and 2.

Structure, function, relationships and significance of invertebrate animals as shown through a study of selected invertebrate types.

60. Vertebrate Zoology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2.

An introductory course in the biology of the vertebrates with emphasis on the vertebrate organism as a whole: anatomy, physiology, development and evolution.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 106. 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**

102. Invertebrate Embryology (3)

Two lectures and three hours of laboratory.

Prerequisite: Zoology 50. Description and experimental analysis of the development of invertebrates.

103. Embryology (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Zoology 50 and 60, or 106.

Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

106. Comparative Anatomy of the Vertebrates (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2. Dissection, study and comparison of organ systems of typical vertebrates.

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108. Histology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2. Recommended: Zoology 8 or 60 or Microbiology 101. The microscopic structures and differentiation of tissues and organs of the vertebrates, especially mammals.

112. Marine Invertebrate Zoology (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Zoology 50 and Biology 110. Application for collecting permit must be made at least six weeks before class begins at Bureau of Marine Sciences (AS-111).

Ecology, morphology, behavior and physiology of marine invertebrates. Frequent field trips to local marine environments.

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.

115. Ichthyology (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Zoology 60 or 106.

Identification, systematics, evolution, structure, physiology, behavior and ecology of fishes.

116. Herpetology (4) I Two lectures and six hours of laboratory.

Prerequisites: Consent of instructor.

The origin, evolution, distribution and systematics of amphibians and reptiles of the world.

#### 117. Ornithology (4) II

Two lectures, six hours of laboratory or field excursions, and a field project.

Prerequisites: Biology 1 and 2 and consent of instructor. The study and identification of birds, especially those of the Pacific Coast and the San

#### Diego region.

118. Mammalogy (4) I Two lectures and six hours of laboratory.

Prerequisite: Zoology 60 or 106.

The evolution, systematics, distribution and ecology of mammals of the world.

119-S. Field Zoology (4) S

Two lectures and six hours of laboratory.

Prerequisite: A course in college biological science.

Observational methods; collecting techniques; identification, ecology and behavior of southern California animals. Primarily for students not majoring in the biological sciences.

#### 120. Insects and Human Welfare (3-4) II

Prerequisites: Biology 1 and 2.

The role of insects in global ecosystems with emphasis on medical and economic aspects, adaptation of insects for these roles, and analysis of current problems and tactics in pest management. Four all-day field trips will be taken by students wishing the fourth unit of credit. Not open to zoology majors.

121. General Entomology (4) I, II Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2.

Structure, physiology, natural history and classification of insects.

122. Special Topics in Entomology (3)

Two lectures and three hours of laboratory.

Prerequisite: Zoology 121.

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.

#### 123. Immature Insects (3) II

Two lectures and three hours of laboratory.

Prerequisite: Zoology 121.

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.

#### 124. Insect Ecology (4) II

Two lectures and six hours of laboratory.

Prerequisites: Biology 110, and Botany 100 or 103. Recommended: Zoology 50 or 121. Ecological principles as applied to insects, including consideration of crop ecosystems in relation to insect and mite outbreaks.

### 125. Economic Entomology (4) II

Two lectures and six hours of laboratory.

Prerequisites: Zoology 50 or 121 (preferred), and Botany 103. Recommended: This course be followed by Zoology 127.

Course designed for students of agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Quarantine measures are also studied.

### 126. Medical Entomology (3) I

Two lectures and three hours of laboratory.

Prerequisite: Zoology 50, 60 or 121 (preferred), or Microbiology 101.

The role of insects and other arthropods in transmission and causation of human diseases. 127. Insect Control (2) I

Prerequisites: Zoology 121, Botany 100 or 103. Recommended: Zoology 125 or 126.

A review of methods of reducing insect populations, including chemical, cultural, biological and legislative control.

#### 128. Parasitology (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Zoology 50 or Microbiology 101.

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. 129. Principles of Pest Management (3) I

Two lectures and three hours of laboratory.

Prerequisites: Botany 100 or 103 or 162; Zoology 121 and 124. Recommended: Zoology 125. Systematic analysis and synthesis of all suitable techniques known to reduce and maintain pest populations at levels below economically important injury in forestry and agriculture. based on firm ecological principles. (Formerly numbered Zoology 127.)

#### 130. Advanced Invertebrate Zoology (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Zoology 50.

Selected topics in advanced invertebrate zoology. May be repeated with new content, Maximum credit six units.

131. Insect Physiology (4) I

Two lectures and six hours of laboratory.

Prerequisites: Zoology 121 and Chemistry 11 or 12.

Description, theory and experimental analysis of all major physiological processes in insects.

#### 135. Scientific Illustration (3)

Two lectures and three hours of laboratory; field trips.

Preparation of illustrative materials, inked drawings, charts, lettering, models, still and movie photography, and photomicrography.

#### 140. Physiological Zoology (4) I, II

Three lectures and three hours of laboratory.

Prerequisites: Zoology 60 or 106, and Chemistry 12.

A comparative and evolutionary study of the functions of organ systems and their environmental significance.

#### 145A-145B. Experimental Animal Surgery (2-2) I, II

One lecture and three hours of laboratory.

Prerequisites: A course in vertebrate anatomy, a course in animal physiology and consent of instructor. Zoology 145A is prerequisite to 145B.

Fundamental principles of animal care, disease prevention and aseptic surgery.

150. Marine Biology (3) I, II Two lectures and three hours of laboratory.

Prerequisite: Biology 1.

An introduction to marine organisms and their environment. Not open to students with credit for Zoology 50 or Biology 110.

#### 155. Principles of Taxonomy, Systematics and Phylogeny (4) II

Two lectures and six hours of laboratory.

Prerequisite: Any one of the following: Zoology 50, 60, 106, Botany 101, 102, 103.

Basis for the classification of organisms. Modern concepts and their application in zoology. Specific problems in laboratory and field.

#### 160. Lower Vertebrate Paleontology (4) II

Two lectures and six hours of laboratory.

Prerequisite: Zoology 106.

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.

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161. Mammalian Paleontology (4) II

Two lectures and six hours of laboratory. Prerequisite: Zoology 106.

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 161 need not follow in sequence with Zoology 160.

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

Refer to Honors Program.

170. Animal Behavior (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Zoology 50 and 60 or Psychology 40, 50 and consent of instructor. Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of behavior.

190. Senior Investigation and Report in Invertebrate Zoology (2) Prerequisite: Consent of instructor.

Investigation and reports on the current literature of invertebrate zoology.

191. Senior Investigation and Report in Vertebrate Zoology (2) Prerequisite: Consent of instructor.

Investigation and reports on the current literature of vertebrate zoology.

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 198 or a combination of this course with Biology or Microbiology 198.

199. Special Study (1-3) I, II

Individual study. Maximum credit six units.

Prerequisites: Fifteen units in biological sciences with a grade of A or B and consent of instructor.

#### **Graduate Courses**

200. Seminar (2 or 3)

An intensive study in advanced zoology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

201. Seminar in Marine Zoology (2)

Prerequisite: Biology 110.

Recent developments in marine zoology. Maximum credit four units applicable on a master's degree.

206. Seminar in Vertebrate Morphology (2)

Prerequisite: Biology 106. Current problems in the descriptive, functional and evolutionary anatomy of vertebrates. Maximum credit four units applicable on a master's degree.

#### 209. Seminar in the Biology of Cold-blooded Vertebrates (2)

Prerequisite: Zoology 60 or 106.

Biology of ectothermic animals. Maximum credit four units applicable on a master's degree.

210. Seminar in the Biology of Warm-blooded Vertebrates (2) Prerequisite: Zoology 60 or 106.

Biology of endothermic animals. Maximum credit four units applicable on a master's degree.

#### 211. Animal Energetics (3)

Three lectures.

Prerequisite: An upper division course in physiology. Recommended: A course in calculus and one in biochemistry.

Energy transformation in animals to include the physiology of starvation, animal energetic efficiency, nutrition, and temperature regulation.

212. Advanced Marine Invertebrate Zoology (3)

One lecture and six hours of laboratory.

Prerequisite: Zoology 112.

Selected topics in advanced marine invertebrate zoology. Maximum credit six units applicable on a master's degree.

### 215. Advanced Vertebrate Zoology (2)

Prerequisites: Consent of the instructor and one of the following: Zoology 115, 116, 117, 118, depending on the specific topic announced in the class schedule. Advanced treatment of ichthyology, herpetology, ornithology or mammalogy. May be repeated with new content. Maximum credit six units applicable on a master's degree.

### 222. Advanced Entomology (3)

Two lectures and three hours of laboratory. Prerequisite: Zoology 121, Biology 110, Botany 100 or 103.

Advanced treatment of some phase of entomology such as physiology, morphology, toxicology or systematics. Topic to be announced in the class schedule. May be repeated with new content. Maximum credit six units applicable on a master's degree.

### 290. Bibliography (1)

The use of basic reference books, journals, pertinent bibliographies preparatory to the writing of a master's thesis.

291. Research Techniques (3)

Prerequisite: Consent of graduate adviser.

Analysis of research techniques in zoology.

297. Research (1-3) Cr/NC

Research in one of the fields of zoology.

Maximum credit six units applicable on a master's degree.

298. Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

#### 299. Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

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# Addenda

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# Faculty and Officers of Administration 1973-1974

GOLDING, BRAGE (1972), President, Professor of Chemistry and Engineering B.S., Ch.E., Ph.D., Purdue University.

ABBOTT, MITCHEL T. (1964), Professor of Chemistry B.Sc., Ph.D., University of California, Los Angeles.

- ABBOTT, PATRICK L. (1973), Assistant Professor of Geology B.S., San Diego State University; M.A., Ph.D., University of Texas.
- ACKERLY, ROBERT S., JR. (1963), Assistant to the Vice President for Academic Affairs B.A., College of Wooster; A.M., Colgate University; Ed.D., Indiana University.
- ADAMS, EILEEN (Mrs. H. L.) (1949), Senior Assistant Librarian A.B., Williamette University; B.S.L.S., University of Denver.
- ADAMS, ELSIE B. (Mrs. G. R.) (1971), Assistant Professor of English B.S., M.A., Ph.D., University of Oklahoma.
- ADAMS, WILLIAM J. (1955), Professor of Speech Communication B.S., McMurry College; M.A., Northwestern University; Ph.D., Stanford University.
- AJEMIAN, JAMES A. (1970), Assistant Professor of Social Work B.A., Harvard College; M.S., Columbia University; Ph.D., University of Michigan.
- AKERS, FRED C. (1966), Associate Professor of Marketing B.S., University of Missouri; M.B.A. (Marketing), Northwestern University; M.B.A. (Economics), Ph.D., University of Chicago.
- ALEXANDER, JAMES B. (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), Assistant Professor of Speech, Pathology and Audiology B.A., Seattle Pacific College; M.A., Ph.D., Louisiana State University.
- ALMOND, FRANK W. (1968), Associate 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.
- AMBLE, KJELL (1962), Professor of Drama B.A., 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 B.A., Washington Missionary College; M.A., Trinity College; Ph.D., Columbia University.
- ANDERSON, ARTHUR J. O. (1961), Professor of Anthropology A.B., San Diego State University, M.A., Claremont Colleges, Ph.D., University of Southern California.
- ANDERSON, DWIGHT G. (1969), Assistant Professor of Political Science B.A., University of Montana; M.A., Ph.D., University of California, Berkeley.
- ANDERSON, ERNEST F. (1971) (Under contract 1969-70), Associate Professor of Social Work B.A., California State University, Los Angeles; M.S.W., San Diego State University.
- ANDERSON, EVANS L. (1954), Professor of Elementary Education B.A., 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), Associate Professor of Telecommunications and Film B.A., Oregon State University; M.A., Ph.D., Michigan State University.
- ANDERSON, NANCY (1972), Psychometrist A.B., M.S., San Diego State University.
- ANDERSON, PAUL S. (1955), Professor of Elementary Education A.B., Colorado State College; M.S., Ph.D., University of Wisconsin.
- 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
- ANDERSON, ZOE E. (1965), Associate Professor of Family Studies and Consumer Sciences B.S., Illinois Institute of Technology; M.S., Ph.D., University of Illinois.
- ANDRAIN, CHARLES F. (1964), Professor of Political Science B.A., Whittier College; M.A., Ph.D., University of California.
- ANDRUS, RUTH (1962), Professor of Physical Education B.S., Utah State University; M.S., University of Oregon; Ph.D., State University of Iowa.
- 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 B.A., M.A., Ph.D., University of California, Los Angeles
- ANNAS, ALICIA M. (1970), Assistant Professor of Drama A.B., University of Detroit; M.F.A., University of Texas.
- ANTHONY, SALLY M. (Mrs.) (1965), Professor of Secondary Education A.B., University of California, Los Angeles; Ed.M., Ed.D., Rutgers University.

APPLEBY, ANDREW B. (1973), Assistant Professor of History B.A., Ph.D., University of California, Los Angeles. APPLEBY, JOYCE O. (1967), Professor of History B.A., 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, TOMÁS A. (1973), Dean, School of Education; Professor of Educational Administration B.S., New Mexico State University; M.A., Ph.D., University of New Mexico. ATCHISON, THOMAS J. (1965), Professor of Management A.B., Stanford University; M.B.A., University of California, Los Angeles; Ph.D., University of Washington. ATHERTON, LAWRENCE L. (1973), Assistant Professor of Educational Technology and Librarianship B.S., M.Ed., Ohio University; Ph.D., Michigan State University. ATKINS, MICHAEL D. (1970), Professor of Zoology B.A., M.Sc., University of British Columbia; Ph.D., Oregon State University. AUSTIN, JOAN F. (1970), Assistant Professor of Art B.A., California State University, Long Beach; M.F.A., Cranbrook Academy of Art. AVILA, VERNON L. (1973), Lecturer in Zoology B.S., University of New Mexico; M.A., North Arizona University; Ph.D., University of Colorado. AWBREY, FRANK T. (1964), Associate Professor of Biology B.A., University of California, Riverside; M.A., Ph.D., University of Texas. AYALA, REYNALDO (1969), Associate Professor of Geography, Imperial Valley B.A., University of Minnesota; M.A., Ph.D., Southern Illinois University. AYANIAN, ROBERT L. (1972), Lecturer in Economics B.S., Clarkson College; M.S., University of Wisconsin. BAASE, SARA (Mrs.) (1972), Assistant Professor of Mathematics B.A., 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. BAER, ADELA S. (1962), Professor of Biology B.S., University of Illinois; Ph.D., University of California. BAILEY, ALLAN R. (1968), Associate Professor of Accounting B.S., San Diego State University; M.B.A., Ph.D., University of California, Los Angeles. BAILEY, GERALD D. (1964), Professor of Industrial Studies B.A., M.A., Central Washington State College; Ed.D., University of Missouri. BAILY, KAMILLA U. (Mrs.) (1966), Associate Professor of Social Work B.A., M.S.W., University of Denver; additional graduate work, University of Southern California and Bryn Mawr College BAKER, CLIFFORD H. (1937), Professor of Spanish A.B., San Diego State University; M.A., University of California; Ph.D., University of Southern California. BAKER, DOUGLAS L. (1954), 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 B.A., 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), M.D., Health Services B.S., University of Detroit; M.D., Detroit University BAKHRU, KESHOOLAL (1972), Assistant Professor of Electrical Engineering B.Sc., M.Sc., Benayas Hindu University, India; M.S.E.E., Columbia University; Ph.D., Polytechnic Institute of Brooklyn. BALDWIN, ELMER D. (1963), Associate Dean; Professor of Education, Imperial Valley B.A., College of the Pacific; M.A., University of Connecticut; Ed.D., Washington State University. BALLANTINE, FRANCIS A. (1949), Professor of Education A.B., Michigan State Normal College; A.M., Ph.D., University of Michigan. BARBER, WILLIAM F. (1959), 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.A., 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. BARNES, ALFRED C., JR. (1968), Associate Professor of Health Science and Safety B.A., M.A., Arizona State University; H.S.D., Indiana University. BARNETT, CAROL A. (1971), Assistant Professor of Biology B.A., 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), Associate Professor of Spanish Doctor en Leyes, University of Cartagena, Colombia; A.M., Ph.D., University of Southern California. BARRY, JOHN J. (1969), Assistant Professor of English B.A., College of William and Mary; M.B.A., Harvard University; Ph.D. candidate, University of Colorado. BARTHOLOMEW, FRANCIS M., JR. (1967), Assistant Professor of History B.A., University of California; M.A., Ph.D., Princeton University. BARTON, MARCIE A. (Miss) (1973), Assistant Professor of Nursing B.S., M.S., University of California, San Francisco.

BAUER, EDWARD G. (1956), Professor of Mechanical Engineering B.S., U.S. Naval Academy; M.S. and additional graduate study, University of California.

BAXTER, ROBERT L. (1962), Professor of Art B.S., M.S., M.F.A., University of Wisconsin BAXTER, WILLIAM L. (1963), Professor of Microbiology A.B., Ph.D., University of California, Los Angeles. BEASLEY, JOHN M. (1972), Assistant Professor of Health Science and Safety B.S., M.A., San Diego State University; Ph.D. candidate, United States International University. BEATTY, JAMES (1973), Assistant Professor of Management B.A., Franklin College; M.S., Indiana State University; Ph.D., University of North Colorado. BECKER, GEORGE J. (1969), Associate Professor of Elementary Education B.A., St. Peter's College; M.A., Fordham University; Ph.D., New School for Social Research. BECKER, GERALD A. (1958), Professor of Mathematics B.A., M.S., Ph.D., State University of Iowa. BECKLUND, LESTER A. (1967), Associate 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), Associate Professor of Secondary Education B.A., M.A., Western Michigan University; Ph.D., Michigan State University BELASCO, JAMES A. (1971), Professor of Management B.S., Cornell University; M.B.A., Hofstra University; Ph.D., Cornell 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 B.A., University of Nebraska; M.A., Humboldt State University; Ph.D., Florida State University. BENDER, STEPHEN J. (1970), Associate 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), Associate Professor of Elementary Education B.S., M.A., Ph.D., University of Minnesota. BERC, 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), Assistant Professor of Geology B.A., 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 B.A., M.A., University of Wisconsin; Ph.D., University of California, Los Angeles. BIGCS, MILLARD R. (1958), Associate Dean, Professional Studies; Professor of Music B.M., Youngstown University; M.F.A., Ohio University; Ph.D., University of Iowa. BIHL, DONALD E. (1973), Lecturer in Physics B.S., M.S., San Diego State University. BILTERMAN, HENRY L. (1956), Assistant Professor of Mechanical Engineering B.S.E.E., University of Iowa; M.A., San Diego State University. BIRCH, AILEEN J. (Mrs. C. E.) (1949), Assistant Professor of Elementary Education A.B., M.A., San Diego State University. BIRD, ANNE M. (1972), Assistant Professor of Physical Education B.S., State University of New York; M.A., University of Maryland; Ph.D., University of Colorado. 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. BLACKMUN, RUPERT B. (1970), Assistant Professor of Industrial Studies B.A., M.A., San Jose State University. BLANC, SAM S. (1966), Assistant Dean, School of Education; Professor of Elementary Education A.B., Colorado State College; M.A., Ed.D., University of Denver. BLANCHARD, JEANNE G. (1973), Lecturer in Nursing B.S., San Francisco State University; M.S., University of California Medical Center, San Francisco. 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), Lecturer in Sociology B.A., 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.

Faculty / 391 BOE, ALFRED F. (1968), Assistant Professor of English B.A., M.A., Ph.D., University of Arizona. BOGGS, WILMA T. (Mrs. A. H.) (1971), Assistant Professor of Family Studies and Consumer Sciences B.S., Kansas State University; M.S., San Diego State University. BOHNSACK, KURT K. (1956), Professor of Zoology B.S., Ohio University; M.S., Ph.D., University of Michigan. BONEY, ELAINE E. (1963), Associate Professor of German A.B., University of Kansas; M.A., University of Wisconsin; Ph.D., University of Texas. BOOSTROM, RONALD L. (1971), Assistant Professor of Public Administration and Urban Studies B.A., California State University, Long Beach; Master of Criminology, University of California, Berkeley. BORKAT, ROBERTA F. (Mrs. F.) (1969), Assistant Professor of English B.A., Cornell University; Ph.D., University of California, San Diego. BOSCHKEN, HERMAN LUTHER (1973), Assistant Professor of Management B.S., M.B.A., University of California, Berkeley; Ph.D., University of Washington. 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), Assistant 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. BRADFORD, MARY (1969), M.D., Health Services A.B., Barnard College, Columbia University; M.D., Temple University. BRANAN, ALVORD G. (1969), Assistant Professor of French B.A., University of Florida; M.A., Middlebury College; Ph.D., Tulane University. BRANDT, CHARLES L. (1957), Professor of Biology B.A., Ph.D., Stanford University BRANSTETTER, R. DEANE (1955), Professor of Mathematics B.S., B.A., Northeast Missouri State Teachers College; M.S., University of Iowa; Ph.D., Iowa State College. BRASHERS, HOWARD C. (1968), Associate Professor of English B.A., 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 BREEDEN, SHIRLEY O. (Mrs. J. S.) (1971), Assistant Professor of Family Studies and Consumer Sciences A.B., M.S., San Diego State University. BREWER, JACK L. (1972), Lecturer in Social Work A.B., M.S.W., San Diego State University. BRIDENSTINE, DON C. (1956), Professor of Economics B.S., University of Oregon; A.M., Ph.D., University of Southern California. BRIGCS, 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. 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. BROOKS, DOUGLAS G. (1971), Assistant Professor of Marketing B.S., M.S., Stanford University; Ph.D., University of Washington. BROWN, HAROLD K. (1971), Director of Information Systems A.B., San Diego State University; M.B.A., Fordham University. BROWN, RUTH M. C. (Mrs. C.) (1971), Assistant Professor of English B.A., Montana State University; M.A., Texas Western College; Ph.D., Arizona State University. BROWN, WILLIAM L. (1962), Assistant Professor of Electrical Engineering B.S.E.E., Professional Degree in Electrical Engineering, Mississippi State University. BROWNLEE, WILLIE C. (1972), Lecturer in Art B.A., M.F.A., University of California, Los Angeles. 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), Associate Professor of Music B.S., University of Minnesota; M.M., University of Nebraska; D.M.A., University of Arizona. BRYANT, STEVEN J. (1964), Associate Professor of Mathematics B.A., University of Chicago; M.A., University of North Carolina; Ph.D., University of Missouri. BRYDEGAARD, MARGUERITE A., (Mrs. H.) (1936), Professor of Elementary Education A.B., San Diego State University; M.A., Ph.D., Claremont Graduate School. BRYSON, JEFF B. (1970), Associate Professor of Psychology B.A., University of Texas; M.S., Ph.D., Purdue University. BRYSON, REBECCA (1972), Test Officer B.A., Queens College; M.S., Ph.D., Purdue University. BUCHANAN, JAMES P. (1973), Lecturer in Psychology B.A., John Hopkins University; M.A., University of California, Los Angeles. BUCK, ROBERT E. (1969), Associate Professor of Sociology B.S., M.S., Trinity University; Ph.D., University of Texas. BUCKALEW, JAMES K. (1967), Associate Professor of Journalism A.B., M.A., Indiana State College; Ph.D., University of Iowa.

BUMPUS, JERRY D. (1971), Assistant Professor of English B.A., 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. BURIAN, ROBERT J. (1968), Associate Professor of Counselor Education B.A., M.A., University of Arizona; Ed.D., Arizona State University. BURNETT, LOWELL J. (1972), Assistant Professor of Physics B.S., Portland State University; M.S., Ph.D., University of Wyoming. BURNSIDE, HOUSTON M. (1968), Associate Professor of Elementary Education B.S., Kent State University; M.A., Ph.D., Claremont Graduate School. BURTON, CHARLES R. (1959), Professor of Mathematics B.A., M.A., University of Kansas; M.A., Ph.D., University of California. BUTLER, CERALD J. (1968), Assistant Professor of English A.B., University of California; M.A., Ph.D., University of Washington. BUTLER, RAY R. (1967), Professor of Recreation Administration B.A., M.Ed., University of Minnesota. CANNON, NONA H. (Mrs. R. C.) (1959) Professor of Family Studies and Consumer Sciences B.S., Harding College; M.S., University of California; Ed.D., Teachers College, Columbia University. CAPP, MARTIN P. (1953), Dean, School of Engineering; Professor of Civil Engineering B.S., M.S., University of Colorado. Registered Professional Engineer and Land Surveyor. CARELLA, MICHAEL J. (1967), Associate Professor of Philosophy B.A., St. Patrick's College, California; M.A., St. Louis University; Ph.L., Ph.D., University of Louvain, Belgium. CARMICHAEL, NANCY M. (1968), Assistant Professor of Botany B.A., Barnard College, Columbia University; M.A., Ph.D., Columbia University. CARNEVALE, JAMES P. (1967), Associate Professor of Counselor Education B.A., University of California, Los Angeles; M.A., San Diego State University; Ph.D., University of Southern California. CARPENTER, ROGER E. (1963), Professor of Zoology B.A., University of Arizona; Ph.D., University of California, Los Angeles. CARPENTER, THOMAS P. (1973), Assistant Professor of Mathematics B.S., Stanford University; M.A.T., San Diego State University; Ph.D., University of Wisconsin. CARTER, J. E. LINDSAY (1962), Professor of Physical Education Diploma in Physical Education, University of Otago, New Zealand; Teaching Certificate, Auckland Teachers College, New Zealand; M.A., Ph.D., University of Iowa. CASE, THOMAS E. (1961), Professor of Spanish B.A., St. Thomas College; M.A., Ph.D., University of Iowa. CATLETT, ROBERT H. (1964), Associate Professor of Zoology A.B., M.A., Colorado College; Ph.D., University of California, Davis. CAVE, MARY F. (1946), Associate Professor of Physical Education B.S., University of North Dakota; M.A., San Diego State University. CHAMBERS, NORMAN E. (1972), Professor of Afro-American Studies B.A., Lincoln University; M.A., San Diego State University; Ph.D., United States International University. CHAMLEY, JOHN D. (1969), Associate Professor of Counselor Education B.A., Pacific Lutheran University; M.A., Ed.D., Arizona State University. CHAN, LILLIAN L. (Mrs. S. Y.) (1969), Senior Assistant Librarian B.S., M.A.L.S., University of Michigan. CHAN, SHU-YUN (1965), Professor of Electrical Engineering B.S., Susquehanna University; B.S.E.E., Columbia University; M.S.E.E., Ph.D., University of Michigan. CHANDLER, SHELLY E. (Mrs. D.) (1966), Associate Professor of Sociology B.A., M.A., Ph.D., University of California, Los Angeles. CHANDRASEKHAR, SRIPATI (1973), Distinguished Visiting Professor of Sociology B.A. (Hons.), M.A., M.Litt., Madras; Ph.D., New York U.; D.Litt., Kurukshetra (hc); D.Sc., U. of the Pacific (hc); M.D., Budapest (hc); F.S.S., London; L.L.D., Redlands U. CHANG, HOWARD H. (1967), Professor of Civil Engineering B.S., Cheng Kung University, China; M.S., Ph.D., Colorado State University. CHARLES, CAROL. M. (1961), Professor of Elementary Education B.A., M.A., Eastern New Mexico University; Ph.D., University of New Mexico. CHASE, LAURA L. (1973), Lecturer in Psychology B.A., Wellesley College. CHATER, ELIZABETH E. (Mrs. M.) (1964), Associate Professor of English B.A., University of British Columbia; M.A., San Diego State University. CHEEK, WILLIAM F. (1968), Associate Professor of History B.A., Hampden-Sydney College; M.A., University of Richmond; Ph.D., University of Virginia. CHEN, LO-CHAI (1969), Associate Professor of Zoology B.S., National Taiwan University; M.S., University of Alaska; Ph.D., University of California, San Diego. CHILDRESS, WILLIAM A. (1968), Assistant Professor of Art A.B., Florida State University; M.F.A., University of California, Los Angeles. CHOU, FANG-HUI (1969), Associate Professor of Civil Engineering B.S., National Taiwan University; M.S., University of Minnesota; Ph.D. Northwestern University. CHRISTENSEN, CLAY B. (Ben) (1968), Assistant Professor of Spanish B.A., M.A., Brigham Young University; Ph.D., University of Washington. CHRYSLER, EARL (1970), Assistant Professor of Information Systems B.S., M.S., San Diego State University.

Faculty / 393 CHU, PAOCHIN (1967), Associate Professor of History B.A., National Taiwan University; M.A., Ph.D., University of Pennsylvania. CLAPP, JAMES A. (1968), Associate Professor of Public Administration and Urban Studies B.S., LeMoyne College; M.R.P., Ph.D., Syracuse University. CLARK, MARGARET A. (1966), Associate Professor of Elementary Education B.A., Whittier College; M.A., Ed.D., Teachers College, Columbia University. CLARK, MARY E. (1969), Professor of Biology A.B., M.A., Ph.D., University of California. CLARY, VIRGINIA L. (1970) (Under contract 1967-70), Associate Professor of Social Work B.A., Municipal University of Omaha; M.S.W., University of Chicago. CLEMENT, NORRIS C. (1968), Associate Professor of Economics B.A., Ph.D., University of Colorado. CLERKIN, MARGARET T. (1973), Lecturer in Nursing B.S., San Diego State University; M.N., University of California, Los Angeles. CLEVELAND, JOHN L. (1972), Associate Professor of Elementary Education B.A., California State University, Los Angeles; M.A., San Francisco State University; Ph.D., Wayne State University. CLINGER, LAWRENCE A. (1969), Assistant Coordinator of Extension B.S., San Diego State University. COBBLE, JAMES W. (1973), Dean of Graduate Division and Research; Professor of Chemistry B.A., Northern Arizona University; M.S., University of Southern California; Ph.D., University of Tennessee and Oak Ridge Institute of Nuclear Studies. COCHRAN, ALICE J. (Mrs. H.) (1965), Assistant Professor of Counselor Education B.A., Ball State Teachers College; M.A., State College of Iowa; additional graduate study, University of Minnesota COFFEY, DEWITT, JR. (1968), Associate Professor of Chemistry B.S., Abilene Christian College; B.S., Ph.D., University of Texas.
 COHEN, LESTER M. (1970) (Under contract 1969-70), Assistant Professor of Social Work B.S., University of Wisconsin; M.S.W., University of Pennsylvania. COHN, THEODORE J. (1964), Professor of Zoology B.S., Cornell University; M.S., Ph.D., University of Michigan. COLBOURN, TREVOR (1973), Vice President for Academic Affairs; Professor of History B.A., University College, Exeter; M.A., College of William and Mary; A.M., Ph.D., Johns Hopkins University COLEMAN, KATHLEEN L. (Mrs. P. L.) (1973), Assistant Librarian B.A., Stanford University; M.A., M.S.L.S., University of Wisconsin. COLLIER, BOYD D. (1966), Professor of Biology B.A., University of California; M.S.T., Ph.D., Cornell University. COLLIER, GERALD (1961), Associate Professor of Zoology B.A., M.A., Ph.D., University of California, Los Angeles COLM, C. LELAND (1938), M.D., Health Services M.D.C.M., McGill University. COLOMBO, ALBERT A. (1967), Assistant Professor of Geography B.S., California State University, Long Beach; M.A., San Diego State University. CONLY, JOHN F. (1962), Professor of Aerospace Engineering B.S.M.E., M.S.M.E., University of Pennsylvania; Ph.D., Columbia University. CONNER, LELAND W.C., Captain, USAF (1972), Assistant Professor of Aerospace Studies B.S., Air Force Academy, M.A., San Diego State University. CONNIFF, JAMES J. (1968), Associate Professor of Political Science B.A., M.A., Rutgers University; Ph.D., Columbia University. COOPER, CHARLES F. (1971), Professor of Biology B.S., University of Minnesota; M.S., University of Arizona; Ph.D., Duke University. COOPER, GWEN O. (Mrs.), (1966), Counselor B.S., University of Miami; M.A., Ed.D., Colorado State College. COOPER, ROBERT L. (1971), Assistant Professor of English B.A., Harvard University; M.A., Teachers College, Columbia University; M.B.A., University of Pennsylvania; Ph.D., Columbia University. COOPER, ROBERT W. (1973), Associate Professor of Zoology B.S., D.V.M., University of California, Davis. COOX, ALVIN D. (1964), Professor of History B.A., New York University; M.A., Ph.D., Harvard University. CORSO, ANTHONY W. (1973), Lecturer in Public Administration and Urban Studies B.S., Marquette University; M.A., University of Wisconsin. COTTRELL, ANN B. (Mrs. D.) (1967), Assistant Professor of Sociology B.A., Miami University, Ohio; M.A., Ph.D., Michigan State University. COTTRELL, DON M. (1967), Associate Professor of Physics B.S., Ph.D., University of Washington. COVENY, CECELIA T. (1957), Professor of Nursing B.S., University of Minnesota; M.P.H., University of North Carolina. COVER, CLARENCE B. (1959), Building Coordinator B.S., M.A., Ohio State University. COVINGTON, DON P. (1965), Associate Professor of Art B.A., Southern Methodist University; M.A., University of California, Los Angeles. COWAN, ERROL (1971), Assistant Professor of Finance B.SC., San Jose State University; M.B.A., Ph.D., University of California, Berkeley. COX, GEORGE W. (1962), Professor of Biology B.A., Ohio Wesleyan University; M.S., Ph.D., University of Illinois.

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DICKEN, CHARLES F. (1962), Professor of Psychology B.A., M.A., Ph.D., University of Minnesota. DICKERSON, MARY E. (1967), Assistant Professor of Family Studies and Consumer Sciences B.S., M.S., Kansas State University. DICKINSON, FIDELIA R. (Mrs.) (1966), Associate Director of Library Services B.A., M.A., Immaculate Heart College; M.L.S., Ph.D., University of California, Los Angeles. DICKINSON, JOHN W. (1962), Professor of English A.B., University of California, Santa Barbara; A.M., Ph.D., University of California, Los Angeles. DICKINSON, PAULINE E. (Mrs. J. S.) (1968), Assistant Librarian B.A., M.L.S., University of Washington. DIEHL, WILLIAM P. (1968), Associate Professor of Biology B.S., University of Arizona; Ph.D., University of California, Los Angeles. DIETZ, JAMES C. (1972), Coach, Baseball B.S., Southern Oregon College; M.S., Ph.D. candidate, University of Oregon. DIMMICK, KENNETH D. (1970), Associate Professor of Speech Pathology and Audiology B.A., Northwestern State College; Ph.D., Stanford University. DINTRONE, CHARLES V. (1972), Senior Assistant Librarian B.A., M.A., University of California, Los Angeles; M.L.S., University of California, Berkeley. DIRKS, JOHN H. (1947), Professor of Art A.B., San Diego State University; M.F.A., Claremont Graduate School. DIRKSEN, DENNIS A. (1969), Associate Professor of Industrial Studies B.A., McPherson College; M.S., Kansas State Teachers College; Ed.D., Utah State University. DODDS, LOWELL J. (1957), Professor of Accounting A.B., University of Redlands; M.B.A., University of Denver. Certified Public Accountant. DODSON, BLANCHE E. (1973), Lecturer in Nursing B.S., Bethany Nazarene College; B.S.N., South Dakota; M.P.H., University of Michigan. DONAHUE, THOMAS S. (1968), Associate Professor of English B.A., Denison University; M.A., Miami University, Ohio; Ph.D., Ohio State University. DOORLAG, DONALD H. (1970), Associate Professor of Special Education B.S., Central Michigan University; M.A., Ph.D., Michigan State University. DORRIS, HELEN L. (1952), Professor of Family Studies and Consumer Sciences B.S., Southern Illinois University; M.S. and additional graduate study, University of Illinois. DOWLER, MICHAEL J. (1971), Assistant Professor of Physical Science B.A., Ph.D., University of California, Santa Barbara. DOWNEN, ROBERT E. (1965), Admissions Officer B.S. United States Naval Academy; M.S., San Diego State University. DRAKE, GLENDON F. (1966), Assistant Professor of English A.B., Miami University, Ohio; M.A., Oklahoma State University; Ph.D., University of Michigan. DRAKE, KENNETH W. (1973), Assistant Professor of Electrical Engineering B.S., Michigan State University; M.S., University of New Mexico; Ph.D., State University of New York. DROBNIES, SAUL I. (1963), Professor of Mathematics B.S., M.A., Ph.D., University of Texas; Post-Doctoral Fellow, Rice University. DUBBS, PATRICK J. (1971), Assistant Professor of Anthropology B.A., University of Notre Dame. DUCKWORTH, JOSEPH B. (1968), Associate Professor of Secondary Education B.A., Oglethorpe College; M.A.T., Oberlin College; Ed.D., Wayne State University. DuFAULT, DAVID V. (1962), Associate Professor of History B.A., M.A., Occidental College; Ph.D., University of Oregon. DUKAS, VYTAS (1959), Professor of Russian A.B., M.A. (Russian), M.A. (German), Ph.D., University of Michigan. DUKEPOO, FRANK C. (1973), Lecturer in Native American Studies B.S., M.S., Ph.D., Arizona State University. DUNCAN, MARY R. (Mrs.) (1973), Assistant Professor of Recreation B.A., San Diego State University; M.S., San Francisco State University; Ph.D. Candidate. DUNKLE, HARVEY I. (1963), Associate Professor of German A.B., New York University; M.A., Ph.D., University of California. DUNN, ROSS E. (1968), Associate Professor of History B.A., State University of New York at Albany; M.A., Ph.D., University of Wisconsin. EAGLE, JOHN E. (1946), Professor of Mathematics B.S., Montana State College; M.A., Ed.D., Stanford University. EBERT, THOMAS A. (1969), Associate Professor of Biology B.S., University of Wisconsin; M.S., Ph.D., University of Oregon. ECKBERG, CARL F. (1969), Assistant Professor of Mathematics B.A., Cornell University; M.S., Ph.D., Purdue University. EGGLESTON, DAVID M. (1970), Associate Professor of Aerospace Engineering B.S., M.S., Ph.D., University of California. EIDEMILLER, DONALD I. (1956), Professor of Geography A.B., San Diego State University; M.A., University of California; Ph.D., Indiana University. EISEN, MARVIN B. (1973), Lecturer in Psychology B.A., University of California, Berkeley; M.A., University of California, Los Angeles; Ph.D., Ohio State University. EISNER, ROBERT E. (1970), Assistant Professor of Classics B.A., St. Peter's College, M.A., Ph.D., Stanford University. EL-ASSAL, MOHAMED M. E. (1967), Professor of Sociology M.S., M.A., Ph.D., Indiana University.

ELGIN, PATRICIA A. (Mrs. C. N.) (1972), Lecturer in English B.A., California State University, Chico; M.A., Ph.D., University of California, San Diego. ELLIS, LEONARD (1973), Lecturer in Speech Pathology and Audiology B.A., McGill University; M.A., University of Iowa; Ph.D., University of Illinois. ELLIOTT, ROSALIE C. (1968), Associate Professor of Elementary Education B.A., Mount Holyoke College; M.A., Bryn Mawr College; Ph.D., Claremont Graduate School. ELWIN, JOHN D. (1969), Assistant Professor of Mathematics B.S., University of Washington; Ph.D., Oregon State University. EMERICK, ROBERT E. (1968), Associate Professor of Sociology B.A., University of California, Santa Barbara; Ph.D., Northwestern University. ERICKSON, PAUL (1963), Professor of Secondary Education B.A., Arizona State University; M.A., Stanford University; Ed.D., University of Southern California. ESTES, RICHARD D. (1973), Professor of Zoology B.A., M.A., Ph.D., University of California, Berkeley. ESTES, RUSSELL G. (1963), Professor of Music B.M.E., M.M.E., Millikin University, Illinois; Ed.D., Colorado State College. ETHERIDGE, RICHARD E. (1961), Professor of Zoology B.S., Tulane University; M.S., Ph.D., University of Michigan. EZELL, PAUL H. (1956), Professor of Anthropology B.A., M.A., Ph.D., University of Arizona. FAIRLIE, LYNDELLE D. (1973), Assistant Professor of Political Science B.A., Drew University; M.A., Johns Hopkins School of Advanced International Studies; Ph.D., Indiana University. FARBER, GERALD H. (1968), Assistant Professor of English B.A., University of California, Los Angeles; M.A., California State University, Los Angeles; Ph.D., Occidental College. FARRIS, DAVID A. (1960), Professor of Biology A.B., Indiana University; Ph.D., Stanford University. FEARN, LEIF (1967), Associate Professor of Special Education B.S., Shippensburg State College, Pa; M.A., Ed.D., Arizona State University. FEENBERG, ANDREW L. (1969), Assistant Professor of Philosophy B.A., Johns Hopkins University; M.A., Ph.D., University of California, San Diego. FEHER, ELSA (Mrs. G.) (1971), Associate Professor of Physical Science B.A., University of Buenos Aires; M.S., Ph.D., Columbia University. FEIERABEND, IVO K. (1959), Professor of Political Science B.A., M.A., University of California; Ph.D., Yale University. FEIERABEND, ROSALIND A. (Mrs. I.) (1964), Professor of Psychology B.A., Swarthmore College; M.A., University of California; Ph.D., Yale University FELLERS, STANFORD (1966), Associate Professor of Health Science and Safety A.B., Adams State College; M.A., Colorado State College; Ed.D., Boston University FERREE, RICHARD J. (1969), Assistant Professor of Industrial Studies A.B., M.A., San Diego State University. FERREL, DALE B. (1957), Professor of Accounting B.S., M.B.A., University of Denver. Certified Public Accountant. FETZER, LELAND A. (1966), Associate Professor of Russian B.S., University of Utah; M.L.S., M.A., Ph.D., University of California. FILNER, ROBERT E. (1970), Assistant Professor of History B.A., Cornell University; M.A., University of Delaware; Ph.D., Cornell University. FINCH, WILLIAM A., JR. (1961), Professor of Geography B.A., East Carolina College; M.A., University of Oklahoma; Ph.D., University of Illinois. FIROVED, JAMES (1970), M.D., Health Services B.S., Monmouth College; M.D., Northwestern University. FISCH, ARLINE M. (1961), Professor of Art B.S., Skidmore College; M.A., University of Illinois. FISHBURN, CLARENCE E. (1955), Professor of Secondary Education A.B., Arizona State University; M.A., Northern Arizona University; Ed.D., Stanford University. FISHER, ALAN M. (1973), Lecturer in Political Science B.A., M.A., Brooklyn College; Doctoral candidate, University of California, Berkeley. FISHER, HORACE H. (1955), Associate Professor of Finance A.B., University of Utah; M.A., Ph.D., University of Southern California. FISHER, J. SHERRICK (1953), Professor of Elementary Education B.S., Bethany College, M.A., Teachers College, Columbia University; Ph.D., University of Pittsburgh. FISHER, ROBERT T. (1966), Assistant Professor of Finance B.S., M.Ed., Wayne State University; Ed.D., Michigan State University; J.D., Wayne State University. FITZ, RICHARD A. (1959), Professor of Mechanical Engineering B.S., Baldwin-Wallace College; M.S. (Ch.E.), Ph.D., Ohio State University FLAGG, DENIS A. (1955), Professor of Economics B.A., Harvard College; Ph.D., University of California. FLAGG, JOAN M. (Mrs. J. E.) (1969), Assistant Professor of Nursing B.S.N., University of Iowa; M.S., University of California, San Francisco. FLANIGAN, FRANCIS JAMES (1973), Assistant Professor of Mathematics B.S., St. Peter's College; Ph.D., University of California, Berkeley. FLEMION, JESSIE L. STODDART (Mrs. P. F.) (1966), Associate Professor of History B.A., Carroll College; M.A., University of Nebraska; Ph.D., University of California FLEMION, PHILIP F. (1968), Assistant Professor of History B.A., B.S., M.A., Ohio State University; Ph.D., University of Florida.

FLETCHER, WILLIAM, III (1970), Assistant Professor of Social Work B.A., Brown University; M.A., Tulane University. FLITTNER, GLENN A. (1970), Professor of Biology A.B., M.A., University of California; Ph.D., University of Michigan. FLYE, RICHARD C. (1950), Assistant Professor of Music B.A., University of Virginia; M.A. and Professional Diploma, Columbia University. FORBING, SHIRLEY E. (Mrs.) (1969), Associate Professor of Special Education A.B., M.S., San Diego State University; Ed.D., University of Southern California. FORD, DAVID H. (1967), Associate Professor of Elementary Education B.A., M.Ed., University of Arizona; D.Ed., University of Oregon. FORD, GLADYS I. (Mrs.) (1973), Lecturer in Nursing B.S.N., University of Pittsburgh; M.S.N., Case Western Reserve University. FORD, LAWRENCE R. (1970), Assistant Professor of Geography B.Sc., M.A., Ohio State University; Ph.D., University of Oregon. FORD, RICHARD F. (1964), Professor of Biology B.A., Pomona College; M.A., Stanford University; Ph.D., University of California, San Diego. FORMAN, ROBERT B. (1963), Professor of Music B.M.E., University of Kansas; M.A., Teachers College, Columbia University; Ed.D., Florida State University. FORREY, ROBERT J. (1968), Assistant Professor of English B.A., M.A., Wesleyan University; Ph.D., Yale University. FORT, MARTHA (Mrs.) (1968), Assistant Professor of Social Work A.B., Oberlin College; M.S.W., University of Pittsburgh. FOSTER, DOUGLAS R. (1973), Lecturer in Industrial Studies A.B., M.A., San Diego State University. FOSTER, FRANCES S. (Mrs.) (1972), Assistant Professor of Afro-American Studies B.S., Miami University; M.A., University of Southern California. FOUNTAIN, LEONARD D. (1960), Professor of Mathematics A.B., S.M., University of Chicago; Ph.D., University of Nebraska. FOX, KATHLEEN (1962), Professor of Physical Education B.S., Kansas State Teachers College; M.A., State University of Iowa; Ph.D., University of Southern California FRANKLIN, ROBERT J. (1967), Associate Professor of History; Imperial Valley B.A., Greenville College; M.A., University of Michigan; Ph.D., University of Southern California FRANZ, EDWARD P. (1965), Associate Professor of Physical Education B.S., M.A., Washington University. FRANZINI, LOUIS R. (1969), Associate Professor of Psychology B.S., University of Pittsburgh; M.A., University of Toledo, Ph.D., University of Pittsburgh. FREDERIKSEN, NORMAN O. (1969), Associate Professor of Ceology B.A., Hamilton College; M.S., Pennsylvania State University; Ph.D., University of Wisconsin FREDRICH, BARBARA E. (1972), Assistant Professor of Geography B.A., University of Wisconsin; M.A., University of California, Los Angeles. FREY, LEONARD H. (1956), Professor of English A.B., Dartmouth College; M.A., Ph.D., University of Oregon. FRICK, FAY A. (Mrs.) (1970), Assistant Professor of Art B.A., University of Chicago; M.A., University of Wisconsin; Ph.D., University of Michigan. FRIEDMAN, ABRAHAM M. (1963), Associate Professor of Physical Education B.S., Springfield College, Massachusetts; graduate study, Columbia University, School of Social Work; M.A., San Diego State University; Ph.D., United States International University. FRIEDMAN, MAURICE STANLEY (1973), Professor of Religious Studies S.B., Harvard University; M.A., Ohio State University; Ph.D., University of Chicago; LL.D., University of Vermont. FRIEDRICH, KURT (1949), Professor of Secondary Education A.B., Columbia College; M.A., Columbia University; Ed.D., Teachers College, Columbia University. FULCOMER, DAVID M. (1973), Professor of Family Studies and Consumer Sciences B.A., Macalester College; M.A., University of Minnesota; Ph.D., Northwestern University. FULKERSON, E. GLEN (1954), Director of Audiovisual Services; Professor of Education B.E., Southern Illinois University; M.A., Ed.D., University of California, Los Angeles. FUNSTON, RICHARD Y. (1970), Associate Professor of Political Science A.B., M.A., Ph.D., University of California, Los Angeles. FUTCH, DAVID C. (1967), Associate Professor of Biology B.A., University of North Carolina; M.A., Ph.D., University of Texas. GALBRAITH, OLIVER, III (1955), Professor of Management B.S., M.B.A., Northwestern University; Ph.D., University of California, Los Angeles. GALLO, PHILIP, S., JR. (1963), Professor of Psychology B.A., M.A., University of California, Santa Barbara; Ph.D., University of California, Los Angeles. CALLUP, AVERY H. (1952), Professor of Botany A.B., San Diego State University; M.A., Claremont Graduate School; Ph.D., University of Michigan GANGE, SAMUEL J. (1969), Counselor B.A., Pacific Lutheran University; M.A., Ed.D., University of Wyoming GANNON, MARY PATRICIA (Sister) (1972), Career Counselor B.A., Saint John's University; M.A., Catholic University of America; M.A., Manhattanville College; M.S., San Diego State University. GANUS, WILLIAM J. (1972), Assistant Professor of Geology B.S., University of Texas, Austin; M.S., Ph.D., University of Arizona. GARRISON, BETTY B. (1962), Professor of Mathematics B.S., B.A., Bowling Green State University; M.A., Ohio State University; Ph.D., Oregon State University.

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GARRISON, JOHN D. (1956), Professor of Physics B.A., M.A., University of California, Los Angeles; Ph.D., University of California. GASKE, PAUL C. (1973), Lecturer in Speech Communication A.B., M.A., San Diego State University. GAST, DAVID K. (1963), Professor of Elementary Education B.A., Occidental College; M.A., Northern Arizona University; Ed.D., Arizona State University. GASTIL, R. GORDON (1959), Professor of Geology A.B., Ph.D., University of California. GATES, CERALD F. (1955), Professor of Elementary Education B.F.A., Syracuse University; M.F.A., University of Colorado; M.A., Ed.D., University of Denver. GAZELL, JAMES A. (1968), Associate Professor of Public Administration and Urban Studies B.A., M.A., Roosevelt University; Ph.D., Southern Illinois University. GEFTER, IRVING (1970), Assistant Professor of Hebrew B.A., University of Toronto; M.A., Michigan State University; additional graduate study, Brandeis University. GECA, PETER C. (1955), Professor of Elementary Education A.B., M.S., Ed.D., University of Southern California. GELLENS, JAY H. (1961), Professor of English B.A., Kenyon College; M.A., Ph.D., Yale University GENERALES, MINOS D. (1949), Professor of Political Science Degree in Law and Political Science, University of Athens; additional graduate study at the University of Paris Law School and Institute of International Studies, Paris and Geneva. GENOVESE, E. NICHOLAS (1970), Associate Professor of Classics A.B., Xavier University; Ph.D., Ohio State University. GENZLINGER, CLEVE K. (1957), Professor of Music B.M., M.M., University of Nebraska; additional graduate study, Teachers College, Columbia University. GERVAIS, RONALD J. (1969), Assistant Professor of English B.A., M.A., Michigan State University; Ph.D., University of Oregon. GHAZI, ABID U. (1973), Assistant Professor of Religious Studies B.A., M.A.T.B.T.H., Aligarh Muslim University; M.Sc., London School of Economics. CHILBERT, JEANNE S. (Mrs. H.) (1965), Assistant Professor of French B.A., B.Ed., University of Puget Sound; M.A., and Doctoral Candidate, University of Washington. GHORPADE, JAISINGH V. (1965), Professor of Management B.A., University of Poona, India; M.B.A., Ph.D., University of California, Los Angeles. GIFFORD, ADAM (1954), Professor of Economics B.A., Portland University; M.A., Stanford University; Ph.D., University of Washington. GILBERT, CLAUDE L. (1967), Head Coach, Football; Assistant Professor of Athletics B.A., M.A., San Jose State University. GILBERT, MARGARET L. (Mrs. A. V.) (1958), Coordinator of Classroom and Facilities Assignment A.B., M.P.A., San Diego State University. GILBREATH, STUART H. (1968), Professor of Public Administration and Urban Studies B.A., Pacific Lutheran College; B.D., Pacific Lutheran Theological Seminary; Ph.D., Michigan State University. GILLETTE, THOMAS L. (1961), Professor of Sociology A.B., University of Missouri; M.A., University of Kansas City; Ph.D., University of North Carolina. GILLIAM, WINONA H. (Mrs. C. T.) (1970), Assistant Professor of Social Work A.B., Virginia Union University; M.S.W., Howard University. GINDLER, HERBERT A. (1960), Professor of Mathematics B.B.A., University of Minnesota; Ph.D., University of California, Los Angeles. GITCHOFF, G. THOMAS (1969), Associate Professor of Public Administration and Urban Studies B.A., Central Methodist College; M.Crim., D.Crim., University of California. GJERDE, CLAYTON M. (1948), Dean of Continuing Education; Professor of Education A.B., Augsburg College; M.A., Ph.D., University of Minnesota. GLADFELTER, WILLIAM B. (1973), Lecturer in Zoology B.A., Cornell University; Ph.D., Stanford University. GLASGOW, JANIS M. (1962), Associate Professor of French B.A., Western Reserve University; M.A., University of Wisconsin; Ph.D., University of California, Los Angeles. GOLDKIND, VICTOR (1961), Professor of Anthropology B.S., George Washington University; M.A., Ph.D., Michigan State University. GOODSON, ROGER A. (1968), Professor of Elementary Education B.S., University of Virginia; M.A., Ed.D., Teachers College, Columbia University. GOODWIN, JOANN P. (Mrs. J.) (1968), Senior Assistant Librarian B.A., Earlham College; M.L.S., University of Rhode Island. GOVERNALI, PAUL (1956), Professor of Physical Education B.A., Columbia College; M.A., Ed.D., Teachers College, Columbia University. GOYNE, CAROL L. (1969), Senior Assistant Librarian A.B., San Diego State University; M.S.L.S., University of Southern California. GRABARITS, FRANK (1972), M.D., Health Services B.S., Manhattan College; Ph.D., M.D., University of Chicago. GRAF, RICHARD G. (1968), Associate Professor of Psychology B.A., Fairleigh Dickinson University; M.A., Connecticut College; Ph.D., University of Massachusetts. GRAHAM, JACK A. (1967), Counselor B.A., Central Washington State College; M.A., Washington State University; Ed.D., Arizona State University. GRAHAM, WILLIAM K. (1973), Associate Professor of Psychology B.A., Willamette University; M.A., University of Illinois; Ph.D., Wayne State University

GRANRUD, CAROLYN A. (1960), Senior Assistant Librarian B.A., St. Olaf College; B.S.L.S., University of Minnesota.

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GRAWUNDER, RALPH M. (1955), Professor of Health Science and Safety B.S., The Rice Institute; M.A., Ed.D., Teachers College, Columbia University GRAY, ROBERT T. (1956), Professor of Secondary Education A.B., M.Ed., Ed.D., University of Kansas. GREENE, JOANNE H. (1967), Senior Assistant Librarian B.A., Cornell University; M.S.L.S., University of Southern California. GREENFELD, PHILIP J. (1969), Assistant Professor of Anthropology B.A., Pasadena College; M.A., Ph.D., University of Arizona. GREENWOOD, NED H. (1964), Professor of Geography B.S., M.S., Brigham Young University; Ph.D., Ohio State University. GRIFFIN, ERNST C. (1972), Assistant Professor of Geography B.A., San Diego State University; M.A., University of Denver; Ph.D., Michigan State University GRIFFIN, RONALD W. (1967), Professor of Social Work B.A., Texas Technological College; B.D., Golden Gate Baptist Seminary; M.S.S.W., University of Texas; Ph.D., Florida State University. GRIPP, RICHARD C. (1958), Professor of Political Science A.B., Whittier College; A.M., Ph.D., University of Southern California. GROFF, PATRICK J. (1955), Professor of Elementary Education B.S., M.S., University of Oregon; Ed.D., University of California GRONBORG, ERIK (1973), Lecturer in Art B.A., M.A., University of California, Berkeley. GROOVER, DARRYL G. (1966), Associate Professor of Art B.F.A., M.A., Kent State University; M.F.A., University of Arizona. GROSS, GEORGE C. (1961), Dean of Academic Administration; Professor of English A.B., M.A., San Diego State University; Ph.D., University of Southern California GROSSBERG, JOHN M. (1962), Professor of Psychology A.B., Brooklyn College; M.A., Ph.D., Indiana University. GRUBBS, EDWARD J. (1961), Professor of Chemistry A.B., Occidental College; Ph.D., Massachusetts Institute of Technology. GUENTZLER, WILLIAM D. (1968), Assistant Professor of Industrial Studies B.S., M.A., Kent State University; Ph.D., Ohio State University. GUIDRY, ROSALIND (Mrs. F. X.) (1970), Associate Professor of Social Work B.A., M.A., California Western University; Ph.D., United States International University. GUMBINER, JUDITH G. (1967), Coordinator of Career Planning and Placement A.B., San Diego State University. GUNNING, BARBARA E. (1969), Associate Professor of Family Studies and Consumer Sciences B.A., San Francisco College for Women; Ph.D., University of California. GUTOWSKI, JULIUS P., JR. (1967), Assistant Professor of Physical Education A.B., San Diego State University. GWINUP, THOMAS R. (1968), Senior Assistant Librarian B.A., M.A., University of Denver; M.A., Indiana University. HAAS, ROBERT W. (1967), Professor of Marketing B.B.A., St. Bonaventure University; M.S., D.B.A., Arizona State University. HABERSTROH, JACK (1969), Associate Professor of Journalism B.A., Loyola University; M.S., University of California, Los Angeles; Ph.D., University of Iowa. HAGER, RICHARD A. (1970), Associate Professor of Mathematics B.Phys., Ph.D., University of Minnesota. HAINES, RICHARD B. (1969), Scholarship Adviser B.A., California State University, Fullerton; M.S., San Diego State University HALE, E. ALAN (1957), Professor of Marketing B.A., Gustavus Adolphus College; M.A., Ph.D., University of Illinois. HALFAKER, PHILIP (1962), Professor of Secondary Education B.S., M.A., Ball State Teachers College; Ed.D., Indiana University HALLAHAN, MARGARET E. (1973), Lecturer in Study Skills A.B., M.A., San Diego State University. HALPERN, MARILYN A. (Mrs. F. R.) (1972), Assistant Professor of Sociology B.A., San Diego State University; Ph.D. candidate, University of California, San Diego. HAMBLETON, JOHN W. (1969), Associate Professor of Economics B.A., Boston College; M.A., Ph.D., University of Wisconsin. HAMBLETON, KAYE E. (Mrs. J. W.) (1969), Assistant Professor of Family Studies and Consumer Sciences B.S., North Dakota State University; M.S., University of Wisconsin. HAMILTON, RICHARD A. (1969), Associate Professor of Public Administration and Urban Studies B.S., University of Pennsylvania; M.B.A., University of Missouri; Ph.D., University of Southern California. HAMMER, GERALD K. (1963), Professor of Industrial Studies B.S., M.S., Bradley University; Ed.D., University of California, Los Angeles. HAMPTON, DAVID R. (1964), Professor of Management A.B., University of Michigan; M.B.A., University of Southern California; Ph.D., Columbia University. HANCHETT, ELIZABETH R. (Mrs. W. F.) (1969), Associate Professor of French B.A., Reed College; M.A., Wellesley College; doctorat d'Universite de Paris. HANCHETT, WILLIAM F., (1956), Professor of History A.B., Southern Methodist University; M.A., Ph.D., University of California. HANSON, ROBERT F. (1962), Professor of Recreation B.A., M.A., Washington State University; Rec.D., Indiana University. HARARI, HERBERT (1966), Professor of Psychology B.A., M.S., Ph.D., University of Miami

HARDER, DONALD F. (1960), Dean of Counseling and Testing B.S., M.S., Ed.D., University of Kansas. HARDESTY, JOHN J. (1968), Associate Professor of Economics A.B., Stanford University; A.M., University of Chicago; Ph.D., University of California, San Diego. HARKANYI, KATALIN (Mrs. T.) (1969), Senior Assistant Librarian B.A., Wayne State University; M.L.S., Western Michigan University HARMON, JAMES E. (1964), Associate Professor of Political Science, Imperial Valley A.B., M.S., San Diego State University; Ph.D., United States International University. HARNED, W. WALLACE (1962), Professor of Accounting A.B., Asbury College; M.B.A., University of Kentucky; Ph.D., University of California, Los Angeles. HARPER, LEROY A. (1959), Professor of Health Science and Safety B.S., M.S., Emporia State Teachers College; Ed.D., Teachers College, Columbia University. HARRINGTON, AWONA W. (1949), Associate Librarian A.B. and additional graduate study at San Diego State University; M.S.L.S., University of Southern California. HARRINGTON, NEIL J. (1948), Professor of Chemistry B.S., Monmouth College; M.A., San Diego State University; Ed.D., Colorado State College of Education. HARRIS, FREDERICK J. (1968), Assistant Professor of Electrical Engineering B.E.E., Polytechnic Institute of Brooklyn; M.S.E.E., San Diego State University. HARRIS, VINCENT C. (1950), Professor of Mathematics B.A., M.A., Ph.D., Northwestern University. HARRISON, GERALDINE M. (Mrs. R.) (1969), Senior Assistant Librarian A.B., Immaculata College, Pa.; M.S.L.S., Drexel Institute of Technology HARRISON, PATRICK J. (1970), Associate Professor of Educational Technology and Librarianship B.S., M.S., Stout State University; Ph.D., Michigan State University. HARRISON, ROBERT C. (1953), Professor of Psychology B.S., M.S., Ph.D., University of Washington. HARVEY, A. R. (1949), Professor of Mathematics B.S., Bates College; A.M., Ph.D., Harvard University. HARVEY, MICHAEL L. (1969), Associate Professor of Drama B.S., Harvey Mudd College; M.A., University of California, Los Angeles; Ph.D., University of Minnesota. HASSALL, DOROTHY M. (1971), Assistant Professor of Nursing B.S., Hunter College of the University of the City of New York, M.Ed., Teachers College, Columbia University. HAWLEY, PECGY J. (Mrs. P. F.) (1968), Professor of Counselor Education B.A., California State University, Los Angeles; M.A., University of Redlands; Ph.D., Claremont Graduate School. HAWORTH, GLENN O. (1966), Professor of Social Work A.B., San Diego State University; M.S.W., D.S.W., University of California HAWORTH, JOANNE (Mrs. G. O.) (1970), Associate Professor of Social Work B.S., University of Illinois; M.S.W., additional graduate study, University of California. HAYES, CHARLOTTE E. (1972), Activities Adviser B.A., Texas Technological University; M.S., East Texas State University HAYS, ROBERT L. (1972), Assistant Professor of Biology B.S., San Diego State University; Ph.D., Stanford University. HAZEN, WILLIAM E. (1962), Professor of Biology B.S., St. Lawrence University; M.S., Ph.D., University of Michigan. HEAD, GERALD L. (1964), Professor of Spanish B.A., Ph.D., University of California, Los Angeles. HEG, E. BIDDLE (1969), Financial Aid Counselor B.A., Swarthmore College; graduate study, University of Pennsylvania. HEIGES, HARVEY E. (1968), Associate Professor of Geography B.A., Principia College; M.S., Pennsylvania State University; Ph.D., University of Washington. HEICHTON, ELIZABETH J. (1966), Associate Professor of Telecommunications and Film B.A., University of Washington; M.S., Syracuse University. HEIVLY, MICHAEL L. (1973), Lecturer in Art B.A., Lycoming College; M.F.A., University of Colorado, Boulder. HELLBERG, LARS H. (1956), Professor of Chemistry B.S., Northwestern University; Ph.D., University of California, Los Angeles. HEMMINGSEN, BARBARA B. (1973), Lecturer in Microbiology B.A., M.A., University of California, Berkeley; Ph.D., University of California, San Diego. HENIC, SUZANNE (1968), Professor of English B.A., M.A., Ph.D., New York University. HERMAN, ELSIE (Mrs. E.) (1969), Associate Professor of Social Work A.B., M.A., University of Chicago. HERNDON, MARY A. (1973), Assistant Professor of Mathematics B.S., M.Ed., Clemson University; Ph.D., Texas A. & M. University HERRMANN, SANDRA (1972), Recreation Coordinator B.S., University of California, Los Angeles. HESSE, RICK (1973), Assistant Professor of Management B.S., M.S., D.Sc., Washington University. HEYMAN, NEIL M. (1969), Assistant Professor of History B.A., Yale University; M.A., Ph.D., Stanford University. HIGCINS, WINFRED H. (Mrs. J.) (1964), Professor of Art B.S., Massachusetts College of Art; M.A. (History), Boston College Graduate School; M.A., (Art History), Boston University; Ph.D., University of California, Los Angeles. HILL, HOWARD (1967), Assistant Professor of Music B.A., University of Washington, graduate study, Juilliard School of Music; M.A., Teachers College, Columbia University.

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(1961), Associate Professor of English B.A., Denison University; M.A., doctoral candidate, Harvard University. HINTZMAN, WILLIAM R. (1969), Assistant Professor of Mathematics B.A., University of Wisconsin, Milwaukee; M.A., University of Michigan; Ph.D., University of Wisconsin. HIPPAKA, WILLIAM H. (1957), Professor of Finance B.S.C., Jur.D., University of Iowa. HO, HUNG-TA (1966), Professor of Mathematics B.Sc., Ordnance Engineering College, China; Sc.M., Virginia Polytechnic Institute; Ph.D., Brown University HOBBS, JOHN A. (1964), Associate Professor of Political Science A.B., M.A., University of Illinois; Ph.D., Princeton University. HOCTOR, MICHAEL B. (1973), Director of Housing B.A., M.A., Washington State University. HODGE, STANLEY B. (1968), Associate Professor of Art B.A., M.A., University of California, Los Angeles. HOGG, MERLE E. (1962), Professor of Music B.S.Ed., B.S.Mus., Kansas State Teachers College; M.A., M.F.A., Ph.D., University of Iowa. HOHM, CHARLES F. (1973), Lecturer in Sociology B.A., M.A., Ph.D., University of Southern California HOIDAL, ODDVAR K. (1967), Associate Professor of History A.B., San Diego State University; Ph.D., University of Southern California. HOLLYFIELD, CYNTHIA A. (1968), Assistant Professor of Physical Education B.S., Southwest Texas State College; M.A., Ball State University. HOLMAN, DOROTHY RIGGS (1966), Associate Professor of Secondary Education B.S., M.S., North Texas State University; Ed.D., University of Kansas. HOLMES, CALVIN V. (1956), Professor of Mathematics B.A., M.A., University of Mississippi; M.S., University of Illinois; Ph.D., University of Kansas. HOLOWACH, FRANK S. (1960), Professor of Journalism B.S., Edinboro State Teachers College, Pennsylvania; M.A., University of Iowa. HOLT, HOWARD B. (1961), Professor of Educational Administration B.S., Ed.M., Oregon State College; D.Ed., University of Oregon. HOOVER, GRACE V. (1956), Associate Librarian A.B., University of Nebraska; B.S.L.S., University of Denver. HOPKINS, JACK R. (1961), Professor of Art B.A., California College of Arts and Crafts; M.F.A., Claremont Graduate School. HORNBECK, FREDERICK W. (1968), Associate Professor of Psychology B.A., M.S., Yale University; Ph.D., University of California, Los Angeles. HOROWITZ, CIDEON (1968), Professor of Social Work, Director of Social Services Research Center A.B., M.A., New York University; M.S.W., Columbia University; Ph.D., University of Chicago. HOSTETLER, DAVID K. (1966), Counselor B.S., University of Tampa; M.Ed., Ed.D., University of Virginia. HOWARD, EDCAR J. (1966), Associate Professor of Mathematics B.S., M.S., San Diego State University; Ph.D., New Mexico State University HOWARD, GORDON S. (1968), Associate Professor of Drama B.S., M.S., University of Oregon; Ph.D., University of Minnesota. HOWARD, ROY J. (1963), Professor of Philosophy B.A., Lic. Phil., Woodstock College, Maryland; Ph.D., Louvain University, Belgium. HOWELL, MAXWELL L. (1972), Dean, College of Professional Studies; Professor of Physical Education B.A., M.A., Ed.D., University of California, Berkeley; Ph.D., University of Stellenbosch. HUFFMAN, EDWARD W. (1955), Professor of Zoology B.S., M.S., University of Illinois; Ph.D., Ohio State University. HULS, HARRY E. (1961), Professor of Elementary Education B.S., St. Cloud State Teachers College; M.A., Ph.D., University of Minnesota. HUNCATE, ROBERT P. (1961, except 1965-69), Dean, School of Business Administration; Professor of Finance B.A., University of Washington; Ph.D., University of California, Los Angeles. HUNRICHS, WILLIAM A. (1957), Professor of Psychology B.A., M.A., Ph.D., Stanford University. HUNSAKER, DAVID M. (1971), Assistant Professor of Speech Communication B.A., University of California, Santa Barbara; M.A., Bradley University; J.D., Columbia University School of Law. HUNSAKER, DON, II (1960), Professor of Zoology B.A., M.S., Texas Technological College; Ph.D., University of Texas. HUNTER, LAWRENCE B. (1963), Associate Professor of Art A.B., San Diego State University; M.A., University of California, Los Angeles. HURD, LYMAN C., III (1958), Professor of Music A.B., M.M., Syracuse University.

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HURLBURT, STUART H. (1970), Associate Professor of Biology B.A., Amherst College; Ph.D., Cornell University. HURLEY, ANN C. (1973), Lecturer in Biology A.B., Stanford University; Ph.D., University of California, San Diego. HUSSAIN, NIHAD A. L. (1969), Associate Professor of Mechanical Engineering B.Sc.M.E., Baghdad University, Iraq; M.Sc.M.E., Purdue University; Ph.D., University of Notre Dame. HUTCHINS, ROBERT C. (1968), Associate Professor of Finance B.S., M.S., Adv. M.Ed., Florida State University; M.B.A., D.B.A., University of Southern California. HUTCHINSON, GEORGE (1973), Assistant Professor of Recreation B.S., M.S., California State College. IMA, KENJI (1972), Assistant Professor of Sociology A.B., Whitman College; M.S., University of Oregon, Ph.D., Northwestern University. INGHAM, MURIEL B. (1967), Professor of English B.A., Willamette University; M.A., Ph.D., University of California, Riverside. INGMANSON, DALE E. (1968), Associate Professor of Physical Science B.S., Rollins College; M.Ed., Rutgers University; Ed.D., University of Florida. INSKEEP, JAMES E., JR. (1960), Professor of Elementary Education B.S., U.S. Naval Academy; M.A., San Diego State University; Ph.D., University of Minnesota. IRGANG, FRANK J. (1956), Professor of Industrial Studies B.S., Central Michigan College; M.A., Ph.D., University of Michigan. IRONHILL, STEPHEN J. (1970), Activities Adviser A.B., M.S., San Diego State University. IRWIN, MICHAEL A. (1964), Test Officer A.B., M.A., M.S., San Diego State University ISENSEE, ROBERT W. (1948), Professor of Chemistry A.B., Reed College; M.A., Ph.D., Oregon State University. ISHIKAWA, WESLEY H. (1969), Professor of Social Work B.S., Willamette University; M.S.W., University of Denver; D.S.W., University of Southern California. JACKSON, MAXINE S. (Mrs.) (1972), Assistant Professor of Physical Science B.S., South Carolina State College; M.A.T., Michigan State University; Ph.D., University of Iowa. JACOBSON, EDWARD A. (1968), Assistant Professor of Psychology B.S., Brooklyn College; Ph.D., Indiana University. JADON, SAMIRA YOUSEF (1973), Lecturer in Arabic B.S., M.A., Northeast Montana State College; Ph.D., University of California, Los Angeles. JAMESON, K. CHARLES (1965), Associate Professor of Telecommunications and Film B.A., M.A., University of Michigan; Ph.D., University of Southern California. JANSSEN, HENRY L. (1953), Professor of Political Science B.A., M.A., University of Oklahoma; Ph.D., University of California. JENCKS, CLINTON E. (1964), Professor of Economics B.A., University of Colorado; M.A., Ph.D., University of California. JENSEN, REILLY C. (1958), Professor of Chemistry B.S., M.S., University of Nevada; Ph.D., University of Washington. JIMÉNEZ-VERA, ARTURO (1970), Assistant Professor of Spanish A.B., San Diego State University; M.A., Arizona State University; Ph.D., University of Arizona. JOHNS, DAVID H. (1965), Professor of Political Science A.B., Dartmouth College; M.A., Ph.D., University of Chicago. JOHNS, CERALD E. (1967), Senior Assistant Librarian B.A., University of California, Santa Barbara; M.S.L.S., University of California, Los Angeles. JOHNSON, ALBERT W. (1964), Dean, College of Sciences; Professor of Biology B.S., Colorado Agricultural and Mechanical College; M.S., Ph.D., University of Colorado. JOHNSON, C. DALE (1963), Professor of Sociology B.A., M.A., Ph.D., University of Minnesota JOHNSON, EULALIA G. (1962), Professor of Nursing B.S., Mount St. Mary's College; M.S., University of Colorado. JOHNSON, JOSEPH S. (1967), Associate Professor of Telecommunications and Film B.A., University of Utah; Ph.D., Michigan State University. JOHNSON, KENNETH D. (1972), Assistant Professor of Botany B.A., Ph.D., University of California, Santa Barbara. JOHNSON, PHILIP E. (1958), Professor of Civil Engineering B.S.C.E., University of Idaho; M.S.C.E., University of California. Registered Civil Engineer. JOHNSON, RANDALL C. (1973), Lecturer in Zoology A.B., University of California, Los Angeles, M.A., Ph.D., University of California, San Francisco. JOHNSON, WARREN A. (1969), Associate Professor of Geography B.S., University of California; M.S., Ph.D., University of Michigan. JOKELA, ALICE C. (Mrs. A. W.) (1969), Lecturer in Microbiology B.S., National Taiwan University, Taiwan; M.S., Massachusetts Institute of Technology; Ph.D., University of California, San Diego. JONASSON, J. FRANKLIN (1968), Financial Aid Counselor B.S., Ed.M., Oregon State University. JONES, KENNETH K., JR. (1948), Professor of Telecommunications and Film B.S., Northwestern University; M.A., Stanford University. JONES, RICHARD (1973), Lecturer in Counselor Education B.A., College of William and Mary; M.A., Virginia Commonwealth University; Ph.D., University of California, Los Angeles. JONES, WALTER D. (1962), Professor of Chemistry B.S., University of Washington; Ph.D., Oregon State College.

JORDAN, G. RAY, JR. (1966), Professor of Religious Studies A.B., Duke University; M.A., Ph.D., University of Southern California. JOY, NED V. (1953), Associate Vice President for Academic Affairs; Professor of Political Science A.B., Ph.D., University of California. JULIAN, JAMES L. (1951), Professor of Journalism B.S., B.A., University of Houston; M.A., University of Texas; Ph.D., University of Iowa. KAATZ, JAMES M. (1967), Associate Professor of Elementary Education B.A., Andrews University; M.A., California State University, Long Beach; Ed.D., University of Southern California. KAHN, MARION J. (Mrs.) (1967), Associate Professor of Social Work B.A., Queens College; M.S., University of Wisconsin. KAHNG, TAE JIN (1962), Professor of Political Science B.A., Kent State University; M.A., Ph.D., Columbia University. KANASEKI, HISAO (1973), Lecturer in English B.A., Doshisha University. KAPLAN, OSCAR J. (1946), Professor of Psychology B.A., M.A., University of California, Los Angeles; Ph.D., University of California. KAREN, ROBERT L. (1964), Professor of Psychology B.A., M.A., University of California, Los Angeles; Ph.D., Arizona State University. KARNATH, DAVID L. (1968), Assistant Professor of English B.A., University of Notre Dame; M.A., Stanford University; Ph.D., University of Minnesota. KARR, O. KENNETH, JR. (1969), Director of Athletics; Professor of Athletics. B.S., Illinois State University; M.S., Ph.D., University of Illinois. KARTMAN, ARTHUR E. (1968), Associate Professor of Economics A.B., MacMurray College; M.A., Ph.D., University of Washington. KASCH, FREDERICK W. (1948), Professor of Physical Education B.S., M.S., University of Illinois; Ed.D., New York University. KASS, NORMAN (1961), Professor of Psychology B.A., M.A., Ph.D., Western Reserve University. KEEN, ELMER A. (1967), Professor of Geography B.A., M.A., Peabody College; Ph.D., University of Washington. KEHLER, DOROTHEA F. (Mrs. H. F.) (1970), Assistant Professor of English B.A., City College of New York; M.A., Ph.D., Ohio University. KEHLER, HAROLD F. (1968), Associate Professor of English B.S., Albright College; M.A., Ph.D., Ohio University. KEISER, KENNETH R. (1968), Assistant Professor of Political Science A.B., Brown University; Ph.D., University of North Carolina. KELLER, KARL (1966), Professor of English B.A., M.A., University of Utah; Ph.D., University of Minnesota. KELLEY, JOSEPH B. (1970) (Under contract 1968-69), Professor of Social Work B.S., Lehigh University; M.S.W., Catholic University of America; D.S.W., Columbia University. KELLY, BEATRICE L. (1967), Professor of Microbiology A.B., University of California; M.A., University of California, Los Angeles; Ph.D., University of Southern California. KELLY, JAMES F. (1970), Career Counselor B.A., B.S., M.P.A., San Diego State University KENDALL, W. LLOYD (1961), Professor of Elementary Education B.S., Wayne State University; M.A., Miami University, Ohio; Ed.D., University of Maryland. KENNEDY, WILL C. (1967), Associate Professor of Sociology B.A., M.A., Ph.D., University of California, Los Angeles. KENNEY, LOUIS A. (1961), Director of Library Services A.B., Nebraska State Teachers College; B.S. in L.S., M.S. in L.S., University of Illinois; graduate study, University of Zurich; Ph.D., University of Maryland. KERN, JOHN P. (1968), Associate Professor of Geology A.B., Ph.D., University of California, Los Angeles. KESSLER, LOIS P. (Mrs. A.) (1969), Assistant Professor of Health Science and Safety R.N., Hospital of the Good Samaritan, Los Angeles; B.S., University of Rochester; M.A., San Diego State University. KHALIFA, M. OSAMA L. (1972), Assistant Professor of Civil Engineering B.Sc., University of Cairo; M.Sc., University of Maryland; Ph.D., University of Illinois. KHALIL, ISSA J. (1969), Associate Professor of Religious Studies B.A., Eastern Mennonite College; M.A., Ph.D., University of Chicago. KHAZANIE, RAMAKANT G. (1969), Associate Professor of Mathematics B.Sc., M.Sc., Bombay University; Ph.D., Purdue University. KIEWIET DE JONGE, ENGBERT J. C. (1963), Professor of Geography B.A., M.A., Ph.D., Clark University. KIMBALL, WILFORD W. (1973), Lecturer in Art B.A., Southern Utah State College; M.F.A., University of Arizona. KING, BONNIE B. (Mrs. I. C.) (1970), Assistant Professor of English, Imperial Valley B.A., University of Chicago; M.A., University of Pittsburgh; additional graduate study, University of Kansas. KING, RALPH M. (1972), M.D., Health Services A.B., Pomona College; M.D., Stanford University. KING, STEPHEN W. (1971), Assistant Professor of Speech Communication B.A., M.A., University of Washington; Ph.D., University of Southern California, Los Angeles. KINNON, WILLIAM D. (1956), Professor of Psychology B.S., Boston University; M.Ed., Trinity University; M.A., Ph.D., University of Denver. KIRBY, BERNARD C. (1954), Professor of Sociology A.B., Denison University; M.A., Ph.D., University of Washington.

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KIRKPATRICK, R. GEORGE (1972), Assistant Professor of Sociology B.A., M.A., Ph.D., University of Texas, Austin. KITCHEN, JAMES D. (1957), Professor of Public Administration and Urban Studies B.A., M.A., Ph.D., University of California, Los Angeles. KITT, KARROL A. (1973), Lecturer in Family Studies and Consumer Sciences. B.S., M.S., University of Nebraska. KLANN, CORINNE F. (1962), Assistant Professor of Elementary Education B.A., Western Washington College; M.A., Teachers College, Columbia University. KOCHANSKI, ADRIAN J. (1969), Dean of Academic Planning; Professor of Public Administration A.B., M.A., (Classics), M.A. (Theology), St. Louis University; Ph.D., University of Chicago. KOFLER, OTTO F. (1973), Coach, Football B.A., Washington State University. KOHLER, RICHARD C. (1969), Associate Professor of English B.A., Colorado State University; M.A., Ph.D., University of California, Los Angeles. KOLODIJ, BOHDAN (1972), Assistant Professor of Sociology B.S., Clemson University; M.A., Bowling Green State University; Ph.D. candidate, University of Oregon. KOPP, HARRIET B. (Mrs.) (1970), Professor of Speech Pathology and Audiology B.A., M.A., Brooklyn College; Ph.D., Columbia University. KOPP, ROBERT P. (1966), Associate Professor of Mathematics B.S., University of Chicago; M.S., University of Illinois; Ph.D., University of Michigan. KOPPELMAN, WALTER H. (1965, except 1967-68), Associate Professor of Philosophy B.S., City College of New York; J.D., New York University; Ph.D., Columbia University. KOPPMAN, JERRY W. (1963), Professor of Psychology B.S., University of Kentucky; A.M., Ph.D., University of Illinois. KOREVAAR, PIA R. (Mrs. J.) (1971), Assistant Professor of Mathematics Ph.D., Federal Institute of Technology, Zurich, Switzerland. KOZLIK, LUDEK A. (1965), Professor of Russian B.A., M.A., Ph.D., University of Texas. KREKORIAN, CHARLES O. (1970), Assistant Professor of Zoology A.B., M.A., California State University, Los Angeles; Ph.D., University of Toronto KRISANS, SKAIDRITE (Mrs.) (1969), Associate Professor of Biology B.S., Eastern Michigan University; M.S., Ph.D., University of Michigan. KRISHNAMOORTHY, GOVINDARAJALU (1968), Associate Professor of Civil Engineering B.E., College of Engineering, India; M.S.C.E., Ph.D., Illinois Institute of Technology. KRUMMENACHER, DANIEL (1968), Professor of Geology M.S. (Chemistry), M.S. (Geology), Ph.D., University of Geneva. KUKKONEN, RUTH M. (1973), Professor of Social Work B.A., Wayne State University; M.S.W., University of Michigan. KUMMEROW, JOCHEN (1973), Professor of Botany Diploma, University of Mainz; Dr., rer., nat., University of Tuebingen. KWALLEK, NANCY B. (Mrs. V. F.) (1969), Assistant Professor of Family Studies and Consumer Sciences B.S., Kent State University; M.S., Oregon State University. LAIHO, ETHEL E. (1964), Associate Professor of Nursing Diploma, Mount Zion Hospital School of Nursing, San Francisco; A.B., San Francisco State University; M.S., University of Oregon. LAMB, ALMA S. (Mrs. C. F.) (1962), Assistant Librarian B.S., University of Alabama. LAMBERT, ARTHUR A. (1960), Professor of Music B.S., M.A., M.F.A., Ph.D., University of Iowa. LAMKE, GENE G. (1973), Assistant Professor of Physical Education A.B., San Diego State University. LA MONICA, GRACE (Mrs. J.) (1966), Assistant Professor of Nursing R.N., St. Francis School of Nursing; B.S., University of Connecticut; B.S., University of California; M.S. (Public Health Nursing) University of California, Los Angeles. LANDIS, JEAN (1968), Assistant Professor of Physical Education A.B., San Diego State University; M.S., Wellesley College; additional graduate study, University of Delaware. LANDIS, VINCENT J. (1954), Professor of Chemistry B.S., Washington State College; Ph.D., University of Minnesota. LANGENBACH, ROBERT G. (1959), Professor of Information Systems B.A., M.A., Montana State University; Ed.D., University of California, Los Angeles. LA PRAY, MARGARET H. (1959), Professor of Elementary Education B.S., M.A., University of Minnesota; Ph.D., Cornell University. LATTA, WILLIAM S. (1971), Counselor B.A., M.A., Ph.D., University of Cincinnati. LAUER, ROSEMARY Z. (1969), Associate Professor of Philosophy B.A., University of Dayton; M.A., Ph.D., St. Louis University LAWS, M. ELIZABETH (Mrs.) (1965), Assistant Professor of Nursing B.S., M.S., University of California, Los Angeles. LAWSON, RICHARD H. (1957), Professor of German B.A., M.A., University of Oregon; Ph.D., University of California, Los Angeles. LEACH, LARRY L. (1968), Associate Professor of Anthropology B.A., M.A., Ph.D., University of Colorado. LEARNED, VINCENT R. (1968) Professor of Electrical Engineering B.S., University of California; Ph.D., Stanford University.

#### Faculty / 405

LEASURE, J. WILLIAM (1962), Professor of Economics B.A., University of New Mexico; M.A., Ph.D., Princeton University. LeBARRON, EVANCELINE O. (Mrs. H. E.) (1946, except 1948-49), Professor of Information Systems B.A., B.S., University of Iowa; B.A., Sioux Falls College; additional graduate study at Claremont Colleges, Universities of Southern California, Minnesota and Hawaii. LE BERRE, JOSEPH (1973), Lecturer in French/Italian Licence es lettres, Diplome d'etudes, C.A.P.E.S., Doctorat candidate, La Sorbonne. LECKART, BRUCE T. (1968), Professor of Psychology B.A., M.A., Ph.D., Michigan State University. LEE, CORDON F. (1958), Public Affairs Director A.B., Drew University; M.S., Columbia University. LEE, LAWRENCE K. (1973), Lecturer in Public Administration and Urban Studies B.A., Washington State University; M.P.A., Ph.D., University of Washington. LEE, ROBERT E. (1956), Professor of Telecommunications and Film B.A., M.A., University of Nebraska. LEE, WILLIAM F. (1965), Professor of Social Work B.A., San Francisco State University; M.S.W., D.S.W., University of California LEERHOFF, RUTH E. (1964), Associate Librarian B.A., Iowa State Teachers College; M.A., University of Denver LEMUS, GEORGE (1960), Professor of Spanish Study at the Universidad Nacional Autonoma de Mexico; B.A., M.A., Ph.D., University of Texas. LEONARD, NANCY (1970), Career Counselor B.A., San Diego State University. LESLEY, FRANK D. (1970), Associate Professor of Mathematics B.S., Stanford University; M.A., Ph.D., University of California, San Diego. LESLIE, NORMAN C. (1969), Assistant Professor of Nursing R.N., Rockland State Hospital; B.S., California State University, Long Beach; M.N., University of California, Los Angeles. LESSLEY, MERRILL J. (1970), Assistant Professor of Drama B.F.A., University of Utah; M.A., University of Minnesota; Ph.D., University of Utah. LEUKEL, FRANCIS P. (1956), Professor of Psychology B.S., University of Florida; M.S., Northwestern University; Ph.D., University of Washington. LEVINE, JOSEPH R. (1965), Professor of Psychology B.A., Brooklyn College; M.A., Ph.D., Michigan State University LEWIN, HARLAN J. (1967), Associate Professor of Political Science A.B., Harvard College; M.A., Ph.D., University of California. LEWIS, WILLIAM LEROY (1973), Visiting Lecturer in Business Administration A.B., Oklahoma City University; M.A., University of Michigan; Litt.D., Midwestern University. LIENERT, CHARLES (1954), Professor of Educational Administration B.E., Southern Illinois University; M.S., University of Illinois; Ed.D., Colorado State College of Education LIGHTNER, KEVIN M. (1968), Associate Professor of Accounting B.S., San Jose State University; M.B.A., Ph.D., University of California, Los Angeles. LILLEGRAVEN, JASON A. (1969), Associate Professor of Zoology B.A., California State University, Long Beach; M.S., South Dakota School of Mines and Technology; Ph.D., University of Kansas. LILLEY, KATHLEEN (1972), M.D., Health Services A.B., San Diego State University; M.D., Creighton University. LILLY, ROGER A. (1968), Associate Professor of Physics B.S., M.A., University of Southern California; Ph.D., University of Hawaii. LIN, MAO-SHIU (1966), Professor of Electrical Engineering B.S.E., National Taiwan University, Taiwan; M.S.E., Ph.D., University of Michigan. LINDER, WILLIAM (1973), Career Counselor B.A., University of California, Davis; M.S., San Diego State University. LINDGREN, DONALD A. (1965), Professor of Marketing B.B.A., M.B.A., Ph.D., University of Wisconsin. LINGREN, PAUL A. (1957), Professor of Art B.A., University of California, Santa Barbara; M.A., University of California, Los Angeles. LINTON, MARIGOLD L. (1964), Professor of Psychology B.A., University of California, Riverside; M.A., University of Iowa; Ph.D., University of California, Los Angeles. LIPPOLD, LOIS K. (1968), Associate Professor of Anthropology B.S., M.S., Ph.D., University of Wisconsin. LITROWNIK, ALAN J. (1971), Assistant Professor of Psychology B.A., University of California, Los Angeles, M.A., Ph.D., University of Illinois. LOCKMAN, EVELYN (1948), Professor of Physical Education B.A., Vanderbilt University; M.A., George Peabody College; graduate study at New York University and University of Wisconsin; additional special study in dance. LODGE, CHESTER R. (1954), Professor of Electrical Engineering B.S.E.E., M.S., Ph.D., University of Iowa. LOGAN, JACK D. (1969), Assistant Professor of Music B.M., M.M., Southern Methodist University; Ph.D. candidate, University of California, San Diego. LONGENECKER, MARTHA W. (Mrs. J. I.) (1955), Professor of Art B.A., University of California, Los Angeles; M.F.A., Claremont Graduate School. LOOMIS, DAVID M. (1961), Assistant Professor of Music B.M., Westminster Choir College; M.M. and additional graduate study, Indiana University. LOPEZ, GENOVEVO C. (1961), Associate Professor of Mathematics B.A., Ph.D., University of California, Los Angeles.

LOVEMAN, BRIAN E. (1973), Assistant Professor of Political Science A.B., University of California, Berkeley; M.A., Ph.D., Indiana University. LuPONE, ORLANDO J. (1964), Professor of Elementary Education B.S., New York University; M.S., Teachers College, Columbia University; Ph.D., St. John's University, New York. LYBARGER, ALVIN E. (1970), Assistant Professor of Industrial Studies B.A., Kearney State Teachers College; M.A., Colorado State College; Ed.D., Utah State University LYNN, ELIZABETH (1963), Associate Professor of Psychology B.A., Linfield College, Oregon; M.S., Ph.D., University of Oregon MACKY, DAVID W. (1969), Associate Professor of Mathematics B.Sc., Allegheny College; M.Sc., Ph.D., Michigan State University. MADHAVAN, MURUGAPPA C. (1968), Associate Professor of Economics B.A., M.A., Annamalai University, India; M.Sc., Ph.D., University of Wisconsin. MADISON, KENNETH C. (1973), Coach, Football B.S., San Diego State University. MADSEN, ROY P. (1966), Professor of Telecommunications and Film B.F.A., University of Illinois; M.A., Ph.D., University of Southern California. MAHONEY, PATRICK (1970), Assistant Professor of Information Systems B.A., B.S.E.E., Rice University; M.B.A., University of California MALCOLM, DAVID D. (1953), Professor of Counselor Education A.B., Harvard College; Ed.M., Boston University; Ph.D., Northwestern University. MALIK, JIM G. (1957), Professor of Chemistry A.B., Wabash College; Ph.D., Michigan State University. MALLEY, MICHAEL M. (1970), Associate Professor of Chemistry B.S., Stanford University; Ph.D., University of California, San Diego. MALMSHEIMER, LONNA M. (1973), Assistant Professor of English B.A., M.A., Pennsylvania State University; Ph.D., University of Minnesota. MANESE, WILFREDO R. (1971), Assistant Professor of Psychology B.A., Ateneo de Manila University; M.S., San Diego State University; Ph.D., University of Houston. MANJOS, THELMA D. (Mrs. P.) (1969), Assistant Professor of Counselor Education B.A., University of California, Los Angeles; M.A., San Francisco State University Ph.D., New York University. MANN, RICHARD L. (1968), Associate Professor of Electrical Engineering B.S.E.E., Ohio University; M.S.E.E., University of New Mexico. Registered Professional Electrical Engineer. MANSFIELD, GEORGE A., JR. (1968), Associate Professor of Mechanical Engineering B.M.E., University of Detroit; M.S.M.E., San Diego State University. Registered Mechanical Engineer. MARCO, COREY (1967), M.D., Health Services B.A., M.D., University of California, Los Angeles. MARCUS, BERNARD (1966), Associate Professor of Mathematics B.S., M.S., Ph.D., University of Arizona. MARINO, LEONARD R. (1973), Assistant Professor of Electrical Engineering B.S., Carnegie Mellon University; M.S., Ph.D., Case Western Reserve University. MARINI, FRANK (1973), Dean, College of Arts and Letters; Professor of Public Administration and Urban Studies B.A., M.A., Arizona State University; Ph.D., University of California, Berkeley. MARKOWITZ, HERBERT A. (1973), M.D., Health Services B.A., M.D., Ohio State University. MAROSZ, WANDA A. (Mrs. H.) (1967), Assistant Professor of Mathematics B.S., University of Chicago; M.A., University of Southern California. MARRIOTT, LOIS I. (Mrs. F. D.) (1966), Associate Librarian B.A., University of Iowa; M.A.L.S., University of Wisconsin. MARSHAK, CELIA L. (1973), Lecturer in Biology A.B., Hunter College; A.M., Ph.D., Columbia University. MARSTERS, HAROLD L. (1962), Associate Professor of Industrial Studies B.A., M.A., California State University, Chico; additional graduate studies, University of California, Los Angeles. MARTIN, DONALD R. (1969), Associate Professor of Telecommunications and Film B.A., Otterbein College; M.S., Syracuse University; Ph.D., Ohio State University. MARTIN, KATHLEEN J. (Mrs. V. A.) (1970), Assistant Professor of Family Studies and Consumer Sciences B.A., Iowa State Teachers College; M.S., Arizona State University. MARTIN, KENNETH R. (1972), Associate Professor of Native American Studies B.A., Brandeis University; M.A., Montana State University. MARTIN, MARY F. (1958), Assistant Professor of Family Studies and Consumer Sciences B.S., University of Idaho; M.S., Oregon State College. MARTINEZ, JULIO A. (1973), Assistant Librarian B.A., Southern Illinois University; M.A.L.S., University of Michigan; M.A., University of Minnesota; Ph.D., Candidate, University of California, Riverside. MATHEWSON, JAMES H. (1964), Professor of Chemistry A.B., Harvard College; M.A., Ph.D., Johns Hopkins University. MATSON, OLLIE G. (1973), Coach, Football B.S., University of San Francisco. MAZON, M. REYES (1973), Associate Professor of Elementary Education B.S., Arizona State University; M.A., New Mexico University; Ph.D., University of Texas. MAX, STEFAN L. (1964), Professor of French B.A., Sir George Williams University, Canada; M.A., McGill University, Montreal; Ph.D., University of California, Los Angeles. MAXWELL, JEAN M. (1963), Professor of Social Work B.A., University of Minnesota; M.S.S., Western Reserve University.

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MERRILL, JOHN E. (1946), Professor of History A.B., Stanford University; A.M., Harvard University; Ph.D., Stanford University.

MERZBACHER, CLAUDE FELL (1947), Professor of Physical Science B.S., University of Pennsylvania; M.A., Claremont Graduate School; Ed.D., University of California, Los Angeles. Certificat d'Etudes Francaises. Licensed Professional Chemical Engineer. MESSIER, LEONARD N. (1946), Professor of French A.B., San Diego State University; M.A., Ph.D., University of California. Officier de l'Ordre des Palmes Academiques. METCALF, EUGENE W. (1973), Lecturer in English B.A., De Pauw University; Ph.D., University of California, Irvine. METZGER, ROBERT P. (1968), Associate Professor of Physical Science B.S., University of California, Los Angeles, M.S., San Diego State University; Ph.D., San Diego State University and University of California, San Diego. METZNER, BARBARA S. (1972), Activities Adviser A.B., M.S., Indiana University. MIEDZINSKI, CHARLES (1972), Lecturer in Art B.A., M.A., University of California, Los Angeles. MILES, ELIJAH W. (1966), Professor of Political Science A.B., Prairie View Agricultural and Mechanical College, Texas; A.M., Ph.D., Indiana University MILLER, ALLAN W. (1963), Associate Professor of Art B.A., M.A. and additional graduate study, University of California, Los Angeles MILLER, F. EVANS (1971), Assistant Librarian B.A., Stanford University; M.L.S., University of California, Los Angeles; M.A., San Diego State University. MILLER, LOUISE (1973), Lecturer in Elementary Education B.S., Southern Oregon College; M.A., Arizona State University. MILLER, PHILIP C. (1965), Professor of Biology B.A., Oberlin College; M.S., Iowa State University; Ph.D., University of Colorado. MILLER, RALPH L. (1963), Professor of Counselor Education B.A., Houghton College, New York; M.Div., Th.M., Princeton Theological Seminary; Ph.D., Michigan State University. MILLS, JACK (1957), Professor of Speech Communication A.B., M.A., University of Florida; Ph.D., University of Illinois. MILNE, DAVID S. (1946), Professor of Sociology A.B., University of California, Los Angeles; M.A., University of Southern California; Ph.D., University of Chicago. MILNE, THAIR S. (Mrs. D. S.) (1968), Assistant Professor of Family Studies and Consumer Sciences A.B., University of California, Los Angeles; M.A., San Diego State University. MISIOROWSKI, ROBERT A. (1973), Assistant Professor of Telecommunications and Film A.B., Knox College; M.F.A., University of California, Los Angeles. MITCHELL, ARTHUR J. (1963), Professor of Special Education A.B., Nebraska State Teachers College; M.A., University of Denver; Ed.D., Colorado State College. MITCHELL, DANLEE G. (1964), Assistant Professor of Music B.S., M.S., University of Illinois. MITTON, DARYL G. (1966), Professor of Management B.C.E., M.B.A., Ph.D., University of Minnesota. MOANEY, ERIC R. (1968), Assistant Professor of Art B.F.A., Rhode Island School of Design; M.F.A., Syracuse University. MOE, JEAN T. (1966), Assistant Professor of Music B.A., University of Santa Barbara; M.A., San Diego State University. MOFFETT, MYRNA J. (Mrs. F. L.) (1968), Assistant Professor of Nursing R.N., Los Angeles County General Hospital; B.S., M.S., University of California, Los Angeles. MOLLENAUER, SANDRA O. (Mrs.) (1970), Assistant Professor of Psychology B.A., Chatham College; Ph.D., State University of New York at Buffalo. MONTEVERDE, JOHN P. (1954), Professor of English B.A., M.A., Ph.D., University of California, Los Angeles. MOOERS, JACK D. (1968), Associate Professor of Elementary Education A.B., San Jose State University; M.A., San Diego State University; Ed.D., University of California, Los Angeles MOON, ROBERT C. (1973), Lecturer in Industrial Studies B.A., Western Washington State. MOORE, HAROLD B. (1960), Professor of Microbiology A.B., San Diego State University; M.A., Ph.D., University of California, Los Angeles. MOORE, MARY J. (1972), Assistant Professor of Anthropology B.A., Agnes Scott College; B.S., University of Tennessee; Ph.D., University of Wisconsin MOORE, MEREDITH A. (1972), Assistant Professor of Speech Communication B.S., M.A., Kansas State University; Ph.D., Purdue University. MOORE, PATRICIA J. (1964), Senior Assistant Librarian B.A., M.A.L.S., Immaculate Heart College. MOORE, ROBERT J., JR. (1968), Associate Professor of Physical Education B.S., M.S., Ph.D., University of Oregon. MONROE, RONALD E. (1973), Professor of Zoology B.A., Fresno State College; M.S., Oregon State University; Ph.D., Kansas State University. MORAMARCO, FRED S. (1969), Associate Professor of English B.A., Long Island University; M.A., Ph.D., University of Utah MORENO, STEVE G. (1969), Associate Professor of Elementary Education B.A., M.A., Ed.D., Colorado State College. MORGAN, CHARLES (1949), Professor of Mechanical Engineering M.E., Stevens Institute of Technology; M.S., University of California. Registered Professional Mechanical Engineer.

MORGAN, RUTH H. (1968), Professor of Social Work B.S., Ohio University; M.S.W., University of Southern California; D.S.W., Columbia University.

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MORRIS, JOYCE (Mrs.) (1969), Assistant Professor of Elementary Education B.A., San Jose State University; M.A., Ph.D., University of New Mexico. MORRIS, RICHARD H. (1957), Professor of Physics A.B., Ph.D., University of California. MORRIS, WILLIAM P. (1970), Associate Professor of Secondary Education B.A., Antioch College; Ed.M., Tufts University; Ph.D., Indiana University. MOSER, JOSEPH M. (1959), Professor of Mathematics B.A., St. John's University, Minnesota; M.A., Ph.D., St. Louis University. MOSES, DOROTHY V. (1958), Professor of Nursing R.N., St. Luke's Hospital, N.Y.; B.S., P.H.N., M.S., University of California, Los Angeles MOURATIDES, NICOS N. (1960), Professor of Sociology B.A., Cornell College; M.A., Ph.D., University of Minnesota. MRACEK, JAROSLAV J. S. (1965), Professor of Music M.B., University of Toronto; M.A., Ph.D., Indiana University. MUNTER, ROBERT L. (1964), Professor of History B.A., M.A., University of Washington; Ph.D., University of Cambridge MURPHY, MARGARET M. (Mrs. S. U.) (1955), Professor of Physical Education B.A., University of California; M.S., Ed.D., University of Oregon. MURPHY, MONICA A. (1969), Associate Professor of Elementary Education B.A., Colorado State College; M.A., Ph.D., University of Iowa. MURPHY, OPHELIA L. (Mrs.) (1972), Assistant Professor of Music B.M., University of Colorado; M.M., University of Wisconsin. MURPHY, ROBERT J. (1964), Professor of Mechanical Engineering B.S.M.E., M.S.M.E., Ph.D., Carnegie Institute of Technology. NAGEL, THOMAS S. (1969), Associate Professor of Elementary Education B.S., University of Idaho; Ph.D., Michigan State University. NAM, WOO HYUN (1968), Associate Professor of Economics B.A., Yonsei University, Korea; M.A., University of Oregon; Ph.D., University of Washington. NAMBA, RICHARD K. (1972), Assistant Professor of Recreation B.S., California State University, Humboldt; M.S., California State University, San Francisco. NARANG, BALBIR S. (1968), Associate Professor of Aerospace Engineering B.S., M.S., Ph.D., University of Illinois. NARDELLI, ROBERT R. (1953), Associate Dean, School of Education; Professor of Elementary Education B.A., M.A., Arizona State University; Ph.D., University of California. NASATIR, ABRAHAM PHINEAS (1928), Professor of History A.B., M.A., Ph.D., University of California; L.H.D., University of Judaism NEEL, JAMES W. (1963), Professor of Biology B.S., University of California; Ph.D., University of California, Los Angeles. NELSON, BURT (1957), Professor of Astronomy B.S., M.S., (Astronomy), M.S., (Philosophy), Ph.D., University of Wisconsin NELSON, HILDA B. (Mrs. B.) (1965), Professor of French M.A., Ph.D., University of Wisconsin. NELSON, SHERWOOD M. (1956), Professor of Philosophy A.B., Phillips University; M.A., Ph.D., University of California. NELSON, THOMAS A. (1968), Associate Professor of English B.A., Oklahoma University; M.A., Wichita State University; Ph.D., Tulane University. NESVIG, DAVID T. (1967), Counselor B.A., Pacific Lutheran University; M.S., Ed.D. candidate, Indiana University NESVOLD, BETTY A. (Mrs. A.) (1967), Professor of Political Science A.B., M.A., San Diego State University; Ph.D., University of Minnesota. NEUBERGER, BRIAN M. (1969), Associate Professor of Finance B.S., Utah State University; M.B.A., Northwestern University; D.B.A., Indiana University. NEUMAN, DONALD R. (1967), Counselor B.S., North Central College, Illinois; M.S., Illinois State University; Ph.D., Michigan State University. NEUNER, EDWARD J., JR. (1957), Professor of Economics A.B., Brooklyn College; A.M., University of Wisconsin; Ph.D., Columbia University NEYNDORFF, HANS (1962), Senior Assistant Librarian B.S., ILLB., University of Indonesia; Doctorandus, University of Leiden; Library Diploma, Netherlands Institute for Documentation and Research. NGUBO, OLIVE P. (Mrs.) (1972), Lecturer in Social Work B.S., University of Natal; M.S.W., University of California, Los Angeles. NICHOLS, ALAN C. (1964), Professor of Speech Pathology and Audiology B.S., Bowling Green State University; M.A., Ph.D., Ohio State University. NICHOLS, PAUL F. (1965), Professor of Physics B.S., College of William and Mary; Ph.D., Duke University. NICHOLS, PRESCOTT S. (1966), Associate Professor of English A.B., M.A., Stanford University; Ph.D., University of Redlands. NOORANY, IRAJ (1963), Professor of Civil Engineering B.S.C.E., University of Tehran; M.S.C.E., Ph.D., University of California. NORLAND, CALVERT E. (1947), Professor of Zoology A.B., Pomona College; M.S., University of California; additional graduate study, Claremont College. NORMAN, NELSON F. (1960), Professor of History B.A., Stanford University; M.A., Harvard University; M.A., California State University, Fresno; Ph.D., University of Illinois. NOTO, JAMES V. (1969), Associate Professor of Health Science and Safety B.S., Slippery Rock State College; M.S., H.S.D., Indiana University.

NOWAK, DANIEL B. (1973), Dean of Student Affairs B.S., M.A., East Michigan University; Ed.D., University of California, Los Angeles. NOWER, LEON (1963), Associate Professor of Mathematics B.S., City College of New York; M.S., Ph.D., Stanford University. NUNEZ, RENE (1969), Associate Professor of Mexican-American Studies B.A., University of California, Los Angeles. NYE, WILLIAM A. (1962), Professor of Finance B.S., Ph.D., University of Pennsylvania. OAKES, VERNON (1972), Assistant Professor of Afro-American Studies B.S., Bluefield State College; M.A., Penn State University. O'BRIEN, ALBERT C. (1965), Associate Professor of History A.B., Providence College; A.M.T., Harvard University; Ph.D., University of Notre Dame. O'BRIEN, BOB R. (1966), Professor of Geography B.S., M.A., University of Texas; Ph.D., University of Washington. O'BRIEN, MARY M. (Mrs. A.) (1966), Assistant Professor of Spanish B.S., North Dakota State University; M.A., Ph.D., University of Colorado. O'BYRNE, ERNEST B. (1954), Vice President for Planning and External Affairs A.B., A.M., Colorado State College of Education; Ph.D., Stanford University. O'DAY, EDWARD F., JR. (1957), Professor of Psychology B.S., M.A., Ph.D., University of Florida. ODENDAHL, ERIC M. (1964), Professor of Journalism B.A., University of New Mexico; M.A., University of Iowa; Ph.D., University of Missouri. ODMARK, VERN E. (1952), Professor of Accounting B.S., St. Cloud State Teachers College; M.A., University of Minnesota; Ph.D., University of Missouri. OHNYSTY, BASIL (1967), Professor of Mechanical Engineering B.S., M.S., University of Illinois. Registered Professional Metallurgical Engineer. OLSEN, ALBERT W. (1957), Professor of Physical Education A.B., M.A., San Diego State University; Ed.D., University of Oregon. OLSEN, LYLE I. (1961), Professor of Physical Education A.B., M.A., California State University, Chico; Ed.D., Teachers College, Columbia University OLSON, ANDREW C., JR. (1946), Professor of Zoology A.B., San Diego State University; M.S., University of Idaho; Ph.D., Oregon State University. O'NEAL, H. EDWARD (1961), Professor of Chemistry B.A., Harvard College; Ph.D., University of Washington. ONTELL, ROBERT (1965), Professor of Social Work A.B., M.S.W., University of California; D.S.W., Columbia University. O'REILLY, NATHALIA CRANE (1958), Assistant Professor of English Special study at Barnard College, University of Madrid, and Sorbonne. O'REILLY, PETER (1968), Professor of Philosophy B.A., M.A., S.T.B., S.T.L., St. Mary of the Lake Seminary; L.M.S., Pontifical Institute of Mediaeval Studies, Toronto; Ph.D., University of Toronto. ORTH, FREDERICK J. (1965), Associate Professor of Art B.A., M.F.A., University of Washington. OSGOOD, JUDITH A. (1970), Counselor B.A., M.A., Michigan State University; Ph.D., Arizona State University. OWEN, MACK (1969), Associate Professor of Drama B.A., Mercer University; M.A., San Francisco State University; Ph.D., University of Michigan. PADGETT, L. VINCENT (1956), Professor of Political Science B.S., Ph.D., Northwestern University. PALMER, DENNIS (1965), Assistant Professor of French A.B., Southern Methodist University; graduate study, Yale University and University of California, Berkeley. PANOS, NICHOLAS (1968), Associate Professor of Electrical Engineering B.S.E.E., Columbia University; M.S.E.E., San Diego State University. Registered Professional Electrical Engineer. PANTOJA, ANTONIA (1973), Associate Professor of Social Work B.A., Hunter College; M.S.W., Columbia University; Ph.D. candidate, Union Graduate School. PAOLINI, PAUL J., JR. (1970), Associate Professor of Biology B.S., M.S., Rensselaer Polytechnic Institute; Ph.D., University of California, Davis. PAPWORTH, FRANK R. (1967), Assistant Professor of Art A.B., San Diego State University; M.A., University of California, Los Angeles. PARK, CHONG JIN (1972), Assistant Professor of Mathematics B.A., B.S., University of Washington; M.S., Kansas State University; Ph.D., University of Wisconsin. PARKER, CHRISTOPHER E. (1966), Professor of Psychology A.B., M.A., San Diego State University; Ph.D., University of California, Los Angeles. PARSONS, JOHN A. (1965), Professor of Biology A.B., Washington and Jefferson College; M.S., Pennsylvania State University; Ph.D., Florida State University. PATTERSON, EMILY H. (Mrs.) (1967), Associate Professor of English B.S., Bowling Green State University; M.A., Ph.D., University of Utah. PAULIN, HARRY W. (1962), Professor of German B.A., North Central College, Illinois; A.M., Ph.D., University of Illinois. PEARSON, THOMAS R. (1968), Director of Financial Aid B.S., U.S. Naval Academy; M.S., Purdue University. PEASE, WILLIAM J. (1973), Associate Librarian B.A., Pomona College; M.A., Fordham University; M.L.S., University of California, Berkeley.

PEHRSON, ROBERT B. (1969), Associate Professor of Secondary Education B.A., M.A., Ph.D., University of Utah.

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PEISNER, EARL F. (1961), Counselor B.A., Grinnell College; M.A., University of Iowa; Ed.D., Oregon State University. PEMBERTON, LeROY A. (1955), Professor of Information Systems A.B., A.M., Colorado State College; Ed.D., University of California, Los Angeles. PENDELL, DAVID R. (1972), Lecturer in Art B.A., M.A., California State University, Long Beach. PENDLETON, WADE C. (1969), Associate Professor of Anthropology B.A., Ph.D., University of California. PENN, ROBERT (1960), Professor of Psychology A.B., M.A., San Diego State University; Ph.D., Carnegie Institute of Techology. PEPPER, CERALD W. (1973), Lecturer in Social Work B.A., University of Alberta; M.S.W., University of British Columbia; D.S.W., University of Southern California. PERCZEL, CSILLA F. (Mrs. J.) (1970), Assistant Professor of Art Ph.D., Francis Joseph University, Hungary. PERENICH, THERESA A. (1973), Assistant Professor of Family Studies and Consumer Sciences B.S., Fordham University; M.S., Ph.D., Florida State University. PERKINS, WILLIAM A. (1955), Professor of English A.B., Ph.D., Stanford University. PERRY, WILHELMINA (Mrs. T.) (1972), Associate Professor of Social Work B.A., Brooklyn College; M.S.W., University of Pennsylvania; Ph.D. candidate, United States International University PERSON, GERALD A. (1987), Professor of Secondary Education B.A., Augsburg College; M.Ed., Ph.D., University of Minnesota. PETERS, LYNN H. (1959), Professor of Management B.A., LL.B., M.B.A., Ph.D., University of Wisconsin PETERSON, GARY L. (1963), Professor of Geology B.A., University of Colorado; M.S., Ph.D., University of Washington. PETERSON, TENOLD A. (1966), Assistant Professor of Art B.A., M.A., California State University, Long Beach. PETRIE, ELIZABETH A. (1972), Professor of Nursing B.S.N.E., Carlow College; M. Litt. N.E., University of Pittsburgh, School of Nursing; Ph.D., University of Pittsburgh. PETTEYS, MANVILLE R. (1957), Coordinator of Extended Services; Professor of Education B.A., Willamette University; M.A., Ed.D., Stanford University. PHELPS, LEROY N. (1966), Associate Professor of Microbiology B.Sc., Ohio State University; Ph.D., University of Southern California. PHILLIPS, JOHNNIE L. (1965), Senior Assistant Librarian B.A., Loyola University, New Orleans; M.A.L.S., University of Illinois. PHILLIPS, WILLIAM D. (1970), Assistant Professor of History B.A., University of Mississippi; M.A., University of Tennessee; Ph.D., New York University. PHILLIPS, WILLIAM H. (1963), Professor of Physical Education A.B., M.A., Ed.D., University of California. PHLEGER, CHARLES F. (1971), Assistant Professor of Physical Science M.A., San Diego State University; Ph.D., University of California, San Diego PIERCE, JOHN E. (1973), Lecturer in Sociology B.A., University of California, Berkeley; M.S., San Jose State University. PIERSON, ALBERT C. (1954), Professor of Management B.L.A.S., University of Illinois; M.B.A., Harvard University; Ph.D., Columbia University. Public Accountant. PIFFARD, GUERARD (1956), Professor of French B.A., M.A., Colorado College; Ph.D., Stanford University; post-doctoral study, University of Strasbourg, France. PILCHER, ANN HARPER (Mrs. D. M.) (1965), Professor of Social Work B.A., M.A., University of Wisconsin; M.S.W., Smith College. PILCHER, DONALD M. (1966), Professor of Social Work B.S., Kansas State University; M.S.W., University of Kansas; C.Phil., University of California. PILLSBURY, BARBARA L. K. (1973), Assistant Professor of Anthropology B.S., University of Minnesota; M.A., Columbia University Teachers College PINCETL, STANLEY J., JR. (1955), Professor of History B.A., M.A., Ph.D., University of California; Doctor of University, University of Paris (Sorbonne); Officier de l'Ordre des Palmes Academiques. PISERCHIO, ROBERT J. (1966), Professor of Physics B.S., M.S., Ph.D., University of Arizona. PLATZ, MARVIN H. (1955), Coordinator of Summer Sessions; Professor of Education B.S., Northeast Missouri State Teachers College; M.Ed., Ed.D., University of Missouri. PLOTNIK, ROD (1970), Assistant Professor of Psychology B.A., St. John's College; M.S., University of Miami; Ph.D., University of Florida. PLYMALE, HARRY H. (1962), Associate Professor of Zoology B.S., D.V.M., Michigan State University. POLICH, JOHN L. (1969), Associate Professor of History, Imperial Valley B.S., Loyola University; M.S., M.A., University of Southern California; Ph.D., University of New Mexico. POLICH, KATHERINE R. (Mrs.) (1969), Librarian, Imperial Valley Campus B.A., University of California, Berkeley; M.S.L.S., University of Southern California; M.A., University of New Mexico. POPP, DEAN O. (1969), Associate Professor of Economics B.A., Willamette University; M.S., Ph.D., Purdue University. POROY, IBRAHIM I. (1967), Professor of Economics Licence in Economics, Istanbul University; M.A., Ph.D., University of California. POSNER, WALTER H. (1962), Senior Assistant Librarian B.S., Utah State Agricultural College; M.A., Western State College, Colorado; M.A. in L.S., University of Denver.

POTTER, CAROL A. (1971), Assistant Professor of Finance B.A., University of Iowa; M.A., University of California, Berkeley; J.D., Boalt Hall School of Law, Berkeley. POWELL, DON W. (1953), Professor of Drama B.S., Kirksville State Teachers College; M.F.A., State University of Iowa. PRALLE, JAMES R., Colonel, USAF (1973), Professor of Aerospace Studies B.A., Ohio Wesleyan University; M.A., Ph.D. candidate, University of Denver. PRANTE, LOUISE (1973), Coordinator of Disabled Student Services B.A., California State University, Los Angeles; M.S., San Diego State University. PRESTON, DAVID L. (1971), Assistant Professor of Sociology B.A., Stanford University; M.A., Ph.D., University of Illinois. PRESTON, DUDLEY A. (1948), Associate Professor of Botany B.S., Washington State College; M.S., Ph.D., University of Minnesota. PRICE, JUDY M. (1972), Assistant Professor of Psychology A.B., M.A., Ph.D., Stanford University. PRICE, QUENTON L. E. (1966), Associate Professor of Family Studies and Consumer Sciences B.A., La Sierra College; M.A., California Western University; Ph.D., United States International University. PROUTY, HELEN L. (1950), Professor of Secondary Education B.S., University of Nebraska; M.A., Ph.D., University of California. PRYDE, PHILIP R. (1969), Associate Professor of Geography B.A., Amherst College; M.A., Ph.D., University of Washington. PSOMAS, THEMISTOCLES (1957), Associate Professor of Psychology B.A., University of Southern California, Ph.D., University of California. PTACEK, ANTON D. (1965), Associate Professor of Geology B.S., University of Wisconsin; M.S., Ph.D., University of Washington. QUASTLER, IMRE E. (1967), Associate Professor of Geography B.A., Wayne State University; M.A., Northwestern University; Ph.D., University of Kansas. QUIETT, FREDERICK T. (1957), Professor of Civil Engineering Geol.E., M.S., Colorado School of Mines. Registered Professional Engineer (Mining). Registered Geologist. QUINN, REBECCA A. (1971), Assistant Professor of Physical Education B.S.E., M.S., Central Missouri State College. RADER, DANIEL L. (1954), Professor of History A.B., M.A., Ph.D., University of California. RADLOW, ROBERT (1968), Professor of Psychology B.S., City University of New York; M.S., Ph.D., Pennsylvania State University. RAO, M. V. RAMA (1957), Professor of Mechanical Engineering B.S.M.E., University of Madras, India; M.S.M.E., Ph.D., University of Illinois. RASMUSSEN, AARON P. (1971), Assistant Professor of Industrial Studies B.S., Illinois State University; M.A., San Jose State University; Ph.D., Arizona State University. RATTY, FRANK J. (1954), Professor of Biology A.B., San Diego State University; M.S., Ph.D., University of Utah. RAY, EUGENE (1969), Assistant Professor of Art M.F.A., Tulane University. RAY, ROBERT C. (1961), Director of Health Services B.S. (Medical), University of North Dakota; M.D., Northwestern University. RAYLE, DAVID L. (1970), Associate Professor of Botany B.A., Ph.D., University of California, Santa Barbara. RAYMER, PAUL H. (1970) (Under contract 1969-70), Assistant Professor of Social Work A.B., M.S.W., doctoral candidate, University of California. REDDING, MARY E. (Mrs. R. W.) (1967), Associate Professor of English B.A., Wisconsin State University; M.A., Ph.D., University of Wisconsin. REDDING, ROBERT W. (1966), Associate Professor of English A.B., California State University, Los Angeles; M.A., University of California; Ph.D., University of New Mexico. REED, NANCY J. (Mrs. D. E.) (1956), Lecturer in Speech Pathology and Audiology A.B., M.A., San Diego State University. REEL, JANE E. (Mrs.) (1958), Assistant Professor of Elementary Education A.B., M.A., San Diego State University; Ph.D., United States International University. REHFUSS, DONALD E. (1962), Associate Professor of Physics B.A., Reed College; M.A., Ph.D., University of Oregon. REICHERT, KURT (1970), Dean, School of Social Work; Professor of Social Work B.A., Carleton College; M.A., University of Chicago; Ph.D., University of Minnesota. REINTS, WILLIAM W. (1966), Professor of Finance B.S., M.B.A., Oklahoma State University; Ph.D., University of Washington. RETSON, JAMES N. (1968), Associate Professor of Elementary Education B.S., Lawrence College; M.A., University of Chicago; Ed.D., Arizona State University. REZNIKOFF, SIMON (1956), Professor of Finance B.A., University of Missouri; J.D., Columbia University. RICE, ERIC D. (1969), Lecturer in Education, Imperial Valley B.S., St. Mary's College; M.A., San Diego State University; Ed.D. candidate, University of California, Los Angeles. RICHARDS, TERI L. (1970), Assistant Professor of Nursing B.S., University of Colorado, School of Nursing, Denver; M.S., University of California, San Francisco. RICHARDSON, WILLIAM H. (1963), Professor of Chemistry B.S., University of California, Los Angeles; Ph.D., University of Illinois. RICHMAN, PAUL T. (1969), Associate Professor of Secondary Education B.S., Allegheny College; M.Ed., Temple University; Ed.D., Stanford University. RIDOUT, LIONEL U. (1946, except 1949-50), Professor of History A.B., San Diego State University; M.A., University of California; Ph.D., University of Southern California.

Faculty / 413 RIEDMAN, RICHARD M. (1962), Professor of Speech Pathology and Audiology
 B.A., M.A., University of Redlands; Ph.D., University of Pittsburgh.
 RIGCS, LESTER G. (1950, except 1951-52), Professor of Mathematics
 B.S., University of Illinois; M.S., Syracuse University; Ph.D., Northwestern University. RINEHART, ROBERT R. (1964), Professor of Biology A.B., San Diego State University; Ph.D., University of Texas. RING, MOREY A. (1962), Professor of Chemistry B.S., University of California, Los Angeles; Ph.D., University of Washington. RIXMAN, EUNICE E. (1960), Professor of Elementary Education B.M., Illinois Wesleyan University; M.M., University of Michigan; D.M.A., University of Southern California. ROBERTS, ELLIS E. (1949), Professor of Geology B.S., Michigan College of Mining and Technology; M.S., California Institute of Technology; Ph.D., Stanford University. ROBINSON, CYNTHIA (1972), Career Counselor B.A., San Diego State University. B.A., San Diego State University.
 ROBINSON, LAURIE R. (Mrs.) (1960), Associate Librarian B.A., Texas Western College; M.A., University of Denver.
 RODIN, MIRIAM J. (Mrs. B.) (1966), Associate Professor of Psychology B.A., M.A., Ph.D., University of California, Los Angeles. RODNEY, JOSEPH A. (1957), Dean, Imperial Valley Campus; Professor of Education A.B., M.A., San Diego State University; Ed.M., Ed.D., University of Southern California. ROEDER, STEPHEN B. W. (1968), Associate Professor of Physics B.A., Dartmouth College; Ph.D., University of Wisconsin. ROEMMICH, HERMAN (1958), Test Officer B.A., Jamestown College; M.A., University of Colorado; M.A., Teachers College, Columbia University; Ph.D., University of Washington. ROGERS, CLORIA H. (Mrs. W. N.) (1973), Assistant Librarian B.A., National Taiwan University; M.L.S., University of California, Berkeley. ROGERS, JOHN J. (1963), Professor of Art B.S., M.S., University of Wisconsin. ROGERS, WILLIAM N., II (1968), Assistant Professor of English B.A., Stanford University; M.A., Ph.D., University of California. ROHFLEISCH, KRAMER J. (1947), Professor of History A.B., M.A., Ph.D., University of California. ROHFLEISCH, MARJORIE C. (Mrs. K.) (1966), Associate Professor of Music B.A., Pomona College; M.A., San Diego State University. ROHRL, VIVIAN J. (Mrs. H.) (1965), Assistant Professor of Anthropology B.A., M.A., University of Chicago; Ph.D., University of Minnesota. ROMANO, ALBERT (1963), Associate Professor of Mathematics B.A., Brooklyn College; M.A., Washington University; Ph.D., Virginia Polytechnic Institute. ROSENSTEIN, LEON (1969), Assistant Professor of Philosophy A.B., Ph.D., Columbia University. ROSS, HELEN W. (1973), Lecturer in Family Studies and Consumer Sciences B.A., Rockford College; M.A., American University; Ph.D. candidate, Catholic University. ROSS, JAMES E. (1969), Associate Professor of Mathematics B.M., Ph.D., University of Minnesota. ROSS, RAMON R. (1961), Professor of Elementary Education B.A., Central Washington College; M.Ed., University of Idaho; Ed.D., University of Oregon. ROSS, SHIRLEY (1973), Career Counselor B.A., M.S., San Diego State University; M.S., Florida State University. ROST, NORMAN (1951), Associate Dean, College of Professional Studies; Professor of Music B.M., M.M., University of Michigan. ROTH, PATRICIA A. (1972), Assistant Professor of Nursing B.S., Mary Manse College; M.S., University of Arizona. ROTHER, JAMES (1969), Associate Professor of English B.A., M.A., McGill University; Ph.D., University of California, Santa Barbara. ROUILLARD, JOHN C. (1971), Associate Professor of Native American Studies B.M.Ed., M.M., Northwestern University. ROWLAND, MONROE K. (1960), Professor of Elementary Education B.S., M.A., Ph.D., University of Michigan. RUETTEN, RICHARD T. (1960), Professor of History B.A., Colorado State College; M.A., Ph.D., University of Oregon. RUJA, HARRY (1947), Professor of Philosophy A.B., University of California, Los Angeles; M.A., University of Chicago; M.A., San Diego State University; Ph.D., Princeton University. RUSH, RICHARD R. (1971), Assistant Professor of English
 B.A., Gonzaga University; Ph.D., University of California, Los Angeles.
 RUSH, SHIRLEY ANNE (Mrs. R. R.) (1972), Assistant to the Vice President for Academic Affairs
 B.A., M.A., Immaculate Heart College; Ph.D., University of California, Los Angeles. SALERNO, M. CONSTANCE (Mrs. V.) (1964), Professor of Nursing B.S., M.S., University of San Diego, College for Women; M.S., University of California, Los Angeles. SALTZ, DANIEL (1959), Professor of Mathematics B.A., B.S., University of Chicago; M.S., Ph.D., Northwestern University. SAMOVAR, LARRY A. (1963), Professor of Speech Communication B.A., California State University, Los Angeles; M.S., Ph.D., Purdue University.

SAMPLES, HOWELL CORDON, JR. (1950), Associate Librarian A.B., University of Georgia; B.S. in L.S., George Peabody College for Teachers.

SAMUELS, JOSEPH M. (1973), Coordinator of Affirmative Action; Professor of Secondary Education B.S., Indiana State University; M.Ed., University of Massachusetts; Ph.D., University of Connecticut. SAMUELSON, RICHARD A. (1973), Assistant Professor of Accounting B.S., Northwestern University; M.B.A., University of Chicago; Ph.D., University of California, Los Angeles. SAND, MARGARET C. (Mrs. C. A.) (1964), Associate Professor of Psychology A.B., University of Colorado; M.A., Ph.D., Columbia University. SANDELIN, M. LEE (Mrs. C.) (1968), Senior Assistant Librarian B.A., San Francisco State University; M.L.S., University of California SANDERLIN, GEORGE W. (1955), Professor of English B.A., American University; Ph.D., Johns Hopkins University. SANDERS, FREDERICK C. (1967), Associate Professor of Speech Communication A.B., M.A., San Diego State University. SANDERS, CERALD P. (1968), Associate Professor of Biology A.B., San Diego State University; M.S., University of Pennsylvania. SANDSTROM, GLENN A. (1956), Professor of English B.A., M.A., Washington State College; Ph.D., University of Illinois. SANNER, RICHARD L. (1965), Associate Director of Audiovisual Services B.S., Iowa State University; M.A., University of Iowa; Ed.D., Arizona State University. SANTALÓ, JOAQUIN (1968), Associate Professor of Spanish A.B., San Diego State University; M.A., Ph.D., University of Arizona. SANTANGELO, GENNARO A. (1967), Professor of English B.S., Fordham College; M.A., Ph.D., University of North Carolina. SARDINAS, MARIA A. (1968), Associate Professor of Social Work A.B., B.A., Colegio Nuestra Senora De Lourdes, Cuba; M.T., Barnes Hospital School of Medical Technologists; M.S.W., Columbia University. SATTLER, JEROME M. (1965), Professor of Psychology A.B., City College of New York; M.A., Ph.D., University of Kansas. SAVAGE, EDITH J. (Mrs. P.) (1960) Professor of Music B.S., University of Missouri; M.S., Texas College of Arts and Industries; Ed.D., University of Colorado. SAVVAS, MINAS (1968) Associate Professor of English B.A., M.A., University of Illinois; Ph.D., University of California, Santa Barbara. SCHABER, STEVEN C. (1967), Professor of German; Professor of Greek A.B., San Diego State University; M.A., Ph.D., Princeton University. SCHAPIRO, HARRIETTE C. (1966), Associate Professor of Biology B.S., University of Miami; M.A., Brandeis University; Ph.D., University of Miami. SCHATZ, ARTHUR W. (1963), Professor of History B.A., St. Mary's College, California; M.A., Ph.D., University of Oregon. SCHECK, DENNIS C. (1968), Associate Professor of Sociology B.A., MacMurray College; M.S., Ph.D., Purdue University SCHMIER, WALTER D. (1967), Associate Professor of Business Law A.B., J.D., Wayne State University. SCHOPP, JOHN D. (1962), Professor of Astronomy B.S., Northwestern University; Ph.D., Princeton University. SCHRUPP, MANFRED H. (1948), Professor of Secondary Education B.S., M.Ed., Ph.D., University of Minnesota. SCHULTE, RICHARD H. (1965), Professor of Psychology A.B., Michigan State University; M.A., Ph.D., University of Illinois. SCHULIZE, WILLIAM A. (1968), Associate Professor of Political Science B.A., Nebraska Wesleyan University; M.A., Ph.D., Rutgers University. SCHULZE, ROLF H. K. (1969), Associate Professor of Sociology B.A., University of North Dakota; M.A., Ph.D., Michigan State University. SCHUPP, CHERIE E. (Mrs. W.) (1965), Assistant Professor of Family Studies and Consumer Sciences B.S., Texas College of Arts and Industries; M.Ed., Southwest Texas State College; Ph.D., United States International University. SCHUTTE, WILLIAM H. (1947), Professor of Physical Education B.S., University of Idaho; M.S., University of Southern California SCOLLAY, PATRICIA A. (Mrs.) (1972), Lecturer in Psychology A.B., University of California, Berkeley; M.A., Ph.D., University of California, Davis. SCOTT, FRANK L. (1947), Professor of Physical Education A.B., Grinnell College; M.A., Ph.D., University of Michigan SEBOLD, FREDERICK D. (1969), Associate Professor of Economics B.A., Saint Vincent College; M.A., Ph.D., Boston College. SEGADE, GUSTAV V. (1967), Associate Professor of Spanish B.A., M.A., Ph.D., University of Arizona. SEGAL, EVALYN FINN (1973), Professor of Psychology A.B., University of Chicago; B.A., Ph.D., University of Minnesota. SELDER, DENNIS J. (1968), Associate Professor of Physical Education B.P.E., M.P.E., University of British Columbia; Ph.D., Ohio State University. SELF, WILLIAM M. (1970), Assistant Professor of Mathematics. B.A., University of Kansas; M.A., Ph.D., University of Wisconsin. SERIGHT, ORIN D. (1967), Associate Professor of English B.A., University of Colorado; M.A., University of Arkansas; Ph.D., Indiana University. SERVEY, RICHARD E. (1961), Professor of Elementary Education A.B., A.M., University of California, Los Angeles; Ph.D., University of Southern California. SETTLE, ROBERT B. (1972), Assistant Professor of Marketing B.A., Dominican College; M.B.A., University of Wisconsin; Ph.D., University of California, Los Angeles.

### Faculty / 415

SHARKEY, GERALD K. (1956), Professor of Marketing A.B., St. John's University; M.S., Georgetown University; Ph.D., University of Southern California. SHARTS, CLAY M. (1962), Professor of Chemistry B.S., University of California; Ph.D., California Institute of Technology. SHAW, LARRY J. (1968), Associate Professor of Secondary Education B.A., Sioux Falls College; M.Ed., Ed.D., University of Nebraska. SHAW, PETER W. (1955), Professor of Mathematics B.A., M.A., University of Toronto; Ph.D., Stanford University. SHELDON, JOHN M. (1962), Professor of Music B.Sc., University of North Dakota; M.A., Arizona State University; Ed.D., University of Southern California. SHEPARD, DAVID C. (1956), Professor of Biology A.B., Ph.D., Stanford University. SHEPOSH, JOHN P. (1968), Professor of Psychology A.B., M.A., Ph.D., Wayne State University. SHERES, ITA G. (Mrs. D.) (1971), Assistant Professor of Jewish Studies B.A., Hebrew University; M.A., Ph.D., University of Wisconsin. SHERR, STEVEN D. (1969), Counselor B.A., City College of New York; M.A., Temple University; Ph.D., University of Missouri. SHERRARD, WILLIAM R. (1968), Professor of Management B.A., M.B.A., Ph.D., University of Washington. SHIELDS, ALLAN E. (1949, except 1969-70), Professor of Philosophy A.B., University of California, M.A., Ph.D., University of Southern California. SHIRA, DONALD W., JR. (1958), Senior Assistant Librarian B.A., University of Redlands; M.A.L.S., George Peabody College. SHOJAI, DONALD A. (1971), Assistant Professor of English B.A., Harvard College; M.A., Ph.D., University of Michigan. SHORT, DONALD R., JR. (1969), Associate Professor of Mathematics B.A., University of California, Los Angeles; Ph.D., Oregon State University. SHORT, JAMES LEE (1973), Visiting Associate Professor of Finance B.S., M.S., Ph.D., University of California, Los Angeles. SHULL, CHARLES M., JR. (1969), Professor of Physical Science B.Chem., University of Tulsa; M.A., Ph.D., University of Utah. SHUTLER, MARY E. (Mrs. R.) (1967), Professor of Anthropology B.A., University of California; M.A., Ph.D., University of Arizona. SHUTTS, WILLIAM H. (1958), Professor of Aerospace Engineering B.S.M.E., M.S.A.E., University of Colorado; Ph.D., University of Texas. SIMPSON, DOROTHY V. (Mrs.) (1970), Associate Dean of Student Affairs, Activities A.B., Talladega College; M.S., University of Alabama. SINGER, ARTHUR, JR. (1959), Professor of Special Education B.S., Milwaukee State Teachers College; M.S., Ph.D., University of Wisconsin. SIROVICA, RUTH MARIE C. (Mrs. C.) (1961), Professor of Nursing B.S., Hunter College, City University of New York; A.M., Teachers College, Columbia University. SKAAR, DONALD L. (1960), Professor of Electrical and Electronic Engineering B.E.E., University of Minnesota; M.S., Oregon State University. Registered Professional Engineer. SKOLIL, LESTER L. (1951), Professor of Physics A.B., Doane College; M.A., University of Nebraska; Ph.D., University of California; D.Sc., Doane College, Nebraska. SLOAN, WILLIAM C. (1961), Professor of Biology B.S., M.S., Ph.D., University of Florida. SMITH, ALAN C. (1963), Professor of Education, Imperial Valley B.A., M.A., Colorado State College; Ed.D., University of Oregon. SMITH, BEVERLY A. (1968), Assistant Professor of Physical Education B.S., West Virginia Wesleyan College; M.S., Ohio University. SMITH, CHARLES D., JR. (1967), Associate Professor of History A.B., Williams College; M.A., Harvard University; Ph.D., University of Michigan. SMITH, CHARLES R. (1969), Associate Professor of Insurance B.S., M.S., Kansas State University; Ph.D., Pennsylvania State University. SMITH, HAYDEN R. (1957), Professor of Secondary Education B.A., Albion College; M.A., Ph.D., University of Michigan. SMITH, JANE K. (Mrs. R. D.) (1968, except 1970), Curriculum Assistant to the Vice President for Academic Affairs B.S., West Virginia University; M.A., Northwestern University. SMITH, J. DAYTON (1955), Professor of Music A.B., B.M., St. Olaf College; M.M., University of Nebraska; additional graduate study at Florida State University. SMITH, JOHN R. (1957), Associate Professor of Psychology B.A., Occidental College; M.A., Ph.D., University of California, Los Angeles. SMITH, LOUIS E., JR. (1946), Professor of Physics A.B., San Diego State University; Ph.D., University of Washington. SMITH, NEWTON B. (1954), Professor of Mathematics B.A., Reed College; M.A., Oregon State University; Ph.D., Iowa State University. SMITH, RAY T., JR. (1964), Professor of History B.A., Southern Methodist University; M.A., Ph.D., University of California. SMITH, ROBERT D., JR. (1963), Professor of Higher Education B.A., M.A., Arizona State University; Ph.D., Northwestern University. SNIDER, MERVIN S. (1953), Professor of Music B.A., Pomona College; M.A., Eastman School of Music; additional graduate study at Northwestern University and Claremont Graduate School.

SNODGRASS, HERSCHEL R. (1967), Professor of Physics B.A., M.A., University of New Mexico; Ph.D., University of California. SNUDDEN, LESLIE W. (1959), Professor of Accounting B.S., Northwestern University; M.B.A., D.B.A., University of Southern California. Certified Public Accountant. SNYDER, WILLIAM S. (1960), Professor of Philosophy B.A., Temple University; Ph.D., Princeton University. SOLBUE, GARY A. (1964), Activities Adviser A.B., M.S., San Diego State University. SOLDNER, HELMUT K. (1969), Associate Professor of Marketing B.S., Martin-Behaim-Oberrealschule, Nuremburg; M.B.A., D.B.A., University of Erlangen, Nuremberg. SOLOMON, JERRY E. (1973), Assistant Professor of Physics B.S., M.S., University of Oklahoma; Ph.D., University of Wisconsin. SOMERVILLE, ROSE M. (Mrs. J.) (1967), Professor of Family Studies and Consumer Sciences B.A., Barnard College, Columbia University; M.A., Columbia University; Ed.D., Teachers College, Columbia University. SONEK, ALEXANDER, JR. (1968), Assistant Professor of Anthropology B.A., City College of New York; M.A., Ph.D., University of Oregon. SORENSEN, GEORGE W. (1967), Professor of Journalism A.B., Antioch College, Ohio; M.S., Boston University; Ph.D., University of Iowa. SORENSON, GEORGE N. (1946), Assistant to the Vice President for Planning and External Affairs; Coordinator for Alumni Affairs; Professor of Art A.B., San Diego State University; M.A., University of Southern California; additional graduate study at the Universities of California and Minnesota. SORENSON, RICHARD E. (1971), Assistant Professor of Industrial Studies B.S., M.S., Stout State University; additional graduate studies, University of Northern Colorado. SOROCHAN, WALTER D. (1969), Associate Professor of Health Science and Safety B.P.E., University of British Columbia; M.Sc., University of Oregon; H.S.D., Indiana University. SOULE, JOHN W. (1970), Assistant Professor of Political Science B.A., M.A., Michigan State University; Ph.D., University of Kentucky. SPANGLER, JOHN A. (1946), Professor of Chemistry A.B., Ph.D., West Virginia University.
 SPAULDING, WILLIAM E., JR. (1970), Associate Professor of Information Systems B.A., M.B.A., Stanford University; Ph.D., Purdue University. SPENCER, MARJORIE J. (Mrs. T.) (1969), Assistant Professor of Art, Imperial Valley B.S., Texas Woman's University; M.A., George Peabody College for Teachers. SPEVAK, JOSEPH E. (1969), Assistant Professor of Journalism B.S., Kent State University; M.S., Boston University; Ph.D., University of Iowa. SPINETTA, JOHN J. (1972), Assistant Professor of Psychology B.A., M.A., Gonzaga University; Ph.D., University of Southern California. SPRAGUE, MELINDA S. (1972), Counselor B.A., Duke University; M.S., Case Institute of Technology; Ph.D., United States International University. SPRINGER, ARTHUR (1968), Assistant Professor of Physical Science B.S., Illinois Institute of Technology; Ph.D., University of California. SRBICH, ALEXANDER L. (1959), Professor of Management B.S., Officers Technical College, Yugoslavia; M.A., University of Cologne, Germany; B.S.E., M.B.A., University of Michigan; Ph.D., University of Minnesota. Registered Professional Industrial Engineer. STANFORD, E. PERCIL (1973), Professor of Social Work A.B., Morgan State College; M.S., Ph.D., Iowa State University. STANGER, LOUISE A. (1972), Lecturer in Social Work B.A., University of Pittsburgh; M.S.W., San Diego State University. STANIFORD, PHILIP S. (1967), Associate Professor of Anthropology B.A., University of California, Santa Barbara; M.A., University of Hawaii; Ph.D., London School of Economics and Political Science. STARR, RAYMOND G. (1964), Associate Professor of History B.A., Ph.D., University of Texas. STAUTLAND, SIGURD (1966), Professor of Secondary Education B.Fag., University of Oslo, Norway; M.A., University of the Pacific; Ph.D., Stanford University. STECKBAUER, MARK J. (1967), Associate Professor of Secondary Education A.B., Catholic University of America; M.A., San Diego State University; Ed.D., University of California, Los Angeles. STEELE, RICHARD W. (1967), Associate Professor of History B.A., Queens College; M.A., University of Wisconsin; M.A., Ph.D., Johns Hopkins University. STEENBERGEN, JAMES F. (1970), Assistant Professor of Microbiology B.S., Western Kentucky University; M.S., Ph.D., Indiana University. STENVALL, JOHN T. (1971), Assistant Professor of Information Systems B.S., M.S., Illinois Institute of Technology; Ph.D., Arizona State University. STEPHENSON, CLARENCE E. (1963), Professor of Drama B.A., M.A., Ph.D., University of Michigan. STEPHENSON, JOHN S., III (1969), Assistant Professor of Sociology B.A., Boston University; M.A., University of Denver; Ph.D., Ohio State University. STEVENS, WALTER R. (1956), Professor of Psychology A.B., Park College; M.A., Ph.D., Michigan State University. STEWART, CHARLES J. (1955), Professor of Chemistry A.B., San Diego State University; M.S., Ph.D., Oregon State University. STEWART, DOUGLAS B. (1971), Assistant Professor of Economics B.S., University of Portland; M.S., Ph.D., University of Oregon.

STONE, SANFORD H. (1956), Professor of Civil Engineering B.S.E., M.S.E., University of Michigan; M.S., University of Illinois. Registered Professional Civil Engineer. STOUGH, MORROW F. (1950, except 1966-71), Professor of Elementary Education A.B., Wittenberg University; M.A., University of Pennsylvania; Ph.D., University of California. STRAND, MARGUERITE R. (Mrs. R. L.) (1955), Counselor; Professor of Secondary Education A.B., M.A., Florida State University; Ph.D., University of Washington. STRATTON, FRANK E. (1966), Professor of Civil Engineering B.S., San Diego State University; M.S., Ph.D., Stanford University. Registered Civil Engineer. STRAUB, LURA LYNN (1948), Professor of Information Systems A.B., Jamestown College; M.C.S., Indiana University; additional graduate study, Universities of Wyoming, Denver and Colorado. STROM, DAVID W. (1968), Associate Professor of Elementary Education B.A., M.A., Ed.D., Wayne State University. STRONG, DOUGLAS H. (1964), Professor of History B.A., M.A., University of California; Ph.D., Syracuse University. STUART, ROBERT J. (1969), Assistant Professor of Electrical Engineering B.S., Massachusetts Institute of Technology; M.S., Ph.D., University of California, Los Angeles. STUMPF, JACK E. A. (1965), Professor of Social Work B.S., George Williams College, Chicago; M.S.W., University of Southern California; Ph.D., Brandeis University. STUTZ, FREDERICK P. (1970), Associate Professor of Geography B.A., Valparaiso University; M.S., Northwestern University; Ph.D., Michigan State University. STYLES, MARVALENE H. (Mrs.) (1972), Counselor B.S., M.S., Tuskegee Institute; Ph.D., Florida State University. SUCEC, ANTHONY A. (1967), Associate Professor of Physical Education A.B., M.A., San Diego State University; Ed.D., University of California. SULLIVAN, EDWARD D. S. (1967), Assistant Professor of English B.A., University of Santa Clara; M.A., Ph.D., University of California, Santa Barbara. SUNSHINE, MICHAEL R. (1972), Lecturer in Family Studies and Consumer Sciences B.S., University of California, Davis; Ph.D., Michigan State University. SUTHERLAND, JON N. (1967), Associate Professor of History A.B., San Diego State University; Ph.D., University of California, Los Angeles. SWANSON, ROBERT W. (1968), Associate Director of Information Systems, Computer Center **B.S.** Columbia University. SWIFT, C. SHUFORD (1968), Assistant to the Dean of Student Affairs B.S.E.E., U.S. Naval Academy; M.S.E.E., U.S. Naval Postgraduate School; additional graduate study, San Diego State University. SWIGGETT, JEAN D. (1946), Professor of Art A.B., San Diego State University; M.F.A., University of Southern California; additional graduate study at Claremont College. SWYHART, BARBARA A. (Mrs. P. R.) (1972), Assistant Professor of Religious Studies B.A., M.A., Marquette University; Ph.D., Temple University. SZABO, ANDREW (1955), Librarian M.S.L.S., Drexel Institute of Technology; Ph.D., University of Pecs, Hungary. TALAMANTES, FLORENCE I. (1962), Associate Professor of Spanish B.A., Mount Union College, Ohio; M.A., Ph.D., University of Cincinnati. TALBERT, FREDDIE D. (1968), Assistant Professor of Astronomy B.A., Ph.D., University of Texas. TANAKA, YOSHIO (1965), Professor of German LL.B., Tokyo University; B.A., M.A., Ph.D., University of California, Los Angeles. TANZER, JOANN L. (Mrs. J. L.) (1956), Professor of Art B.A., M.A., Michigan State University; Ed.D., Teacher's College, Columbia University. TAYLOR, HAWLEY C., JR. (1964), Associate Professor of English A.B., Reed College, Oregon; Ph.D., University of Washington. TAYLOR, JAMES W. (1950), Professor of Geography A.B., Northwestern State College; M.A., Ph.D., Louisiana State University. TAYLOR, KENNETH M. (1949), Professor of Biology A.B., M.A., Ph.D., University of California, Los Angeles. TEASDALE, JOHN G. (1956), Professor of Physics A.B., Ph.D., University of California, Los Angeles. TEBOR, IRVING B. (1957), Professor of Social Work B.S., Northern Illinois State University; M.A., University of Chicago; Ph.D., Oregon State University. TEMPLETON, GENE A. (1970), Head Coach, Tennis; Assistant Professor of Athletics B.S., University of Texas; M.S., Ph.D., University of New Mexico. TEMPLIN, JACQUES D. (1962), Professor of Physics A.B., University of California; M.A., Ph.D., University of California, Los Angeles. TERRELL, HUGH (1973), Assistant Director of Housing B.A., Westmont College; M.S., Indiana State University; Ph.D. candidate, United States International University. TERRELL, LOUIS M. (1969), Associate Professor of Political Science B.A., Williams College; M.A., Ph.D., Stanford University. TERRY, WILLIAM L. (1946), Professor of Physical Education A.B., Western Kentucky Teachers College; M.S., Indiana University; Ed.D., Columbia University.

STIEHL, HARRY C. (1969), Associate Professor of English B.A., University of Texas; M.A., University of California; Ph.D., University of Texas.

STITES, FRANCIS N. (1968), Associate Professor of History B.A., Marian College; M.A., Ph.D., Indiana University.

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THIEL, DONALD W. (1957), Professor of Industrial Studies B.S., University of Nebraska; M.S., Stout State College; Ph.D., Ohio State University. THILE, EDMUND L. (1967), Associate Professor of Speech Pathology and Audiology A.B., San Diego State University; M.A., Ph.D., University of Southern California THOMAS, ALICE E. (Mrs. H.) (1955), Professor of Family Studies and Consumer Sciences B.S., Bethany College, Kansas; M.A., Columbia University; additional graduate studies at Universities of California and Washington. THOMAS, BEATRICE (Mrs. J.) (1954), Professor of Nursing B.S., College of St. Scholastica; M.A., San Diego State University. THOMAS, BLAKEMORE E. (1956), Professor of Geology A.B., University of California; M.S., Ph.D., California Institute of Technology. THOMAS, SHIRLEY W. (Mrs. C. W.) (1972), Assistant Professor of Afro-American Studies B.A., West Virginia State College; M.A., University of California, Los Angeles. THOMPSON, CORDON M. (1969), Assistant Professor of Counselor Education B.A., Muskingum College; M.Div., Pittsburgh Theological Seminary; M.A., San Diego State University; Ph.D., Arizona State University. THOMPSON, LORENZO (1972), Assistant Professor of Public Administration and Urban Studies B.A., M.S., San Diego State University; Ph.D., University of Southern California. THOMPSON, WILLIS H., JR. (1967), Assistant Professor of Physical Science B.S., B.A., Stanford University; M.A., San Jose State University. THRANE, JAMES R. (1966), Assistant Professor of English A.B., M.A., University of California, Los Angeles; Ph.D., Columbia University. THREET, RICHARD L. (1961), Professor of Geology B.S., B.A., M.A., University of Illinois; Ph.D., University of Washington. THWAITES, WILLIAM M. (1965), Associate Professor of Biology B.S., University of Wisconsin; M.S., Ph.D., University of Michigan. TIDWELL, JAMES N. (1947), Professor of English A.B., Simmons University; M.A., University of Oklahoma; Ph.D., Ohio State University. TILARO, MARIO (1968), Assistant Professor of Information Systems B.S., University of Akron; M.S., San Diego State University. TOLLNER, ALFRED TED (1973), Coach, Football B.S., M.A., California State Polytechnic University, San Luis Obispo. TONG, EUGENE (1972), Assistant Director of Audiovisual Services B.A., M.A., California State University, Los Angeles. TOOLE, HOWARD R. (1972), Assistant Professor of Accounting B.S., M.B.A., University of California, Berkeley; Ph.D. candidate, University of Iowa. TOSSAS de IRIZARRY, LEILA V. (1961), Professor of Elementary Education B.S., M.A., Ed.D., Teachers College, Columbia University. TOZER, LOWELL (1954), Professor of English A.B., University of Chicago; M.A., De Paul University; Ph.D., University of Minnesota. TREADWAY, GERALD H., JR. (1970), Assistant Professor of Elementary Education A.B., M.A., San Diego State University; Ed.D., University of Arizona. TREADWELL, DONALD D. (1973), Assistant Professor of Civil Engineering B.S., M.S., University of Arizona. TRIMMER, RUSSELL L. (1955), Professor of Special Education A.B., Stanford University; M.A., Ph.D., Claremont Graduate School. TRIPPI, ROBERT R. (1972), Assistant Professor of Management B.A., Queens College, City University of New York; S.M., Ph.D., Massachusetts Institute of Technology. TROXELL, EUGENE A. (1966), Associate Professor of Philosophy A.B., Conzaga University; M.A., Ph.D., University of Chicago TUNBERG, JACQUELINE D. (Mrs. W. A.) (1966), Assistant Professor of English B.A., M.A., Ph.D., University of Southern California. TURNER, MARJORIE S. (Mrs. M. B.) (1954), Professor of Economics B.A., M.A., Ph.D., University of Texas. UNDERHILL, ROBERT (1972), Assistant Professor of English B.A., Harvard College; Ph.D., Harvard University. URISTA, ALBERTO H. (1970), Lecturer in Mexican-American Studies A.B., San Diego State University. VANDENBERG, PIETER A. (1969), Associate Professor of Finance B.S., California State Polytechnic University, Pomona; M.B.A., D.B.A., University of Southern California. VANDERBILT, KERMIT (1962) Professor of English B.A., Luther College, Iowa; M.A., Ph.D., University of Minnesota. VANDERWOOD, PAUL J. (1969), Associate Professor of History B.A., Bethany College; M.A., Memphis State University; Ph.D., University of Texas. VAN de WETERING, R. LEE (1960), Professor of Mathematics B.S., University of Washington; Ed.M., Western Washington College of Education; Ph.D., Stanford University. VANIER, DINOO T. (Mrs. D. K.) (1970), Associate Professor of Marketing B.Com., Sydenham College of Commerce & Economics, Bombay; M.B.A., M.A., Ph.D., University of California. VARTANIAN, PERSHING (1968), Assistant Professor of History B.S., Wayne State University; M.A., Columbia University; Ph.D., University of Michigan. VENIERIS, JOHN P. (1967), Professor of Economics B.A., Graduate School of Economics and Business Administration, Athens, Greece; Ph.D., University of Oregon. VERDERBER, ANNE (1971), Assistant Professor of Nursing B.S., Saint John College; M.Ed. Nurs. Ed., University of Minnesota.

VERGANI, GIANANGELO (1963), Professor of Italian

Dottorato in Lettere, University of Pavia, Italy; additional graduate study, University of California.

VERGANI, LUISA (Mrs. G.) (1969), Associate Professor of Italian Dottorato in Lettere, University of Milan. VEZIE, TIM T. (1970), Coaching Specialist, Basketball

B.A., University of Nevada.

VIDALI, JOSEPH J., JR. (1973), Assistant Professor of Marketing B.A., University of California, Santa Barbara; M.B.A., California State University, Sacramento; Ph.D., University of Oregon.

VILLARINO, JOE R. (1969), Assistant Professor of Mexican-American Studies B.S., M.A., Northern Arizona University.

VILLONE, ARNOLD L. (1968), Associate Professor of Mathematics B.S.E.E., University of Buffalo; M.A., Ph.D., University of California, Los Angeles. VINGE, VERNOR S. (1972), Assistant Professor of Mathematics B.S., Michigan State University; M.A., Ph.D., University of California, San Diego.

VINTON, ROBERT C. (1969), M.D., Health Services B.S., University of Santa Clara; M.D., University of California, Irvine. VOLZ, ELAINE C. (Mrs.) (1951), Evaluations Officer

B.S., University of Wisconsin

WADSWORTH, EARL P., JR. (1956), Professor of Chemistry B.S., M.S., University of New Hampshire; Ph.D., Iowa State University. WAGNER, RICHARD V. (1969), Assistant Professor of Anthropology B.A., M.A., Ph.D., University of California.

WALAWENDER, MICHAEL J. (1972), Assistant Professor of Geology B.S., Syracuse University; M.S., South Dakota School of Mines and Technology; Ph.D., Pennsylvania State University.

WALBA, HAROLD (1949), Professor of Chemistry B.S., Massachusetts State College; Ph.D., University of California.

WALCH, HENRY A., JR. (1955), Professor of Microbiology B.A., Ph.D., University of California, Los Angeles.

WALKER, DONALD E. (1968), Professor of Sociology and Public Administration A.B., M.Th., University of Southern California; Ph.D., Stanford University

WALL, CAREY G. (1971), Assistant Professor of English B.A., University of Michigan; Ph.D., Stanford University.

WALLACE, ROBERT D. (1957), Professor of Art B.A., M.A., Stanford University; D.Litt., University of Geneva.

WALLACE, WILLIAM J., JR. (1969), Assistant Professor of Physical Science B.A., St. Michael's College, Vermont; M.S., Tuskegee Institute; M.S., Ph.D., Oregon State University.

WALSH, JAMES L. (1962), Professor of Spanish B.A., University of Nevada; M.A., Mexico City College; Ph.D., University of Illinois. B.A., University of Ideada, and S. S. Associate Professor of Elementary Education B.S., Northwestern University; M.A., Teachers College, Columbia University.

WALSHOK, MARCO G. (1969), Assistant Professor of Public Administration and Urban Studies B.A., University of Southern California; M.A. and doctoral candidate, Indiana University.

WANLASS, DOROTHY C. (1955), Professor of English B.S., Utah State University; M.A., Ph.D., Columbia University.

WARBURTON, JOHN T. (1968), Associate Professor of Educational Administration B.A., University of California; M.A., San Diego State University; Ed.D., University of California, Los Angeles.

WARD-STEINMAN, DAVID (1961), Professor of Music B.M., Florida State University; M.M., D.M.A., University of Illinois.

WARMER, MARGERY (Mrs. J. C.) (1956), Professor of Family Studies and Consumer Sciences A.B., M.S., University of Southern California; Ph.D., United States International University.

WARNER, BRADFORD B. (1967), Educational Television Station Program Director B.S., Kent State University.

WARNOCK, FLORENCE N. (Mrs. B. B.) (1971), Assistant Professor of Nursing B.S., Wayne State University; M.A., University of Michigan.
 WARREN, EDWARD W. (1963), Professor of Philosophy and Classics B.A., Stanford University; Ph.D., Johns Hopkins University.

WARREN, E. JUNE (Mrs.) (1957), Dean of Admissions and Records B.S., Northern State Teachers College, South Dakota; M.A., San Diego State University; doctoral candidate, University of California, Los Angeles.

WARREN, LEROY J. (1955), Professor of Mathematics B.A., College of Idaho; M.A., Ph.D., University of Oregon.

WARSCHAWSKI, STEFAN E. (1973), Visiting Professor of Mathematics Arbiturium-Gymnasium, Konigsberg, Germany; Ph.D., University of Basel, Switzerland.

WATSON, ELIZABETH V. (1968), Assistant Professor of Social Work B.A., Scripps College; M.S., University of Southern California.

WATSON, LAWRENCE C. (1967), Professor of Anthropology B.A., University of California, Los Angeles; M.A., University of Southern California; Ph.D., University of California, Los Angeles.

WEBB, EDWARD M., JR. (1964), Director of Career Planning and Financial Aid A.B., M.S., San Diego State University; Ph.D., United States International University.

WEBER, DAVID J. (1967), Professor of History B.S., State University of New York, College at Fredonia; M.A., Ph.D., University of New Mexico. WEBER, SHIRLEY N. (Mrs.) (1972), Assistant Professor of Afro-American Studies B.A., M.A., University of California, Los Angeles.

WEDBERG, HALE L. (1959), Professor of Botany B.A., Los Angeles State College; Ph.D., University of California, Los Angeles.

WEETER, RAYMOND D. (1966), Associate Professor of Spanish B.A., University of Utah; M.A., Universidad Nacional de Mexico; Ph.D., University of California. WEINER, RICHARD (1970), M.D., Health Services M.D., University of California, Irvine. WEIR, MARY JEAN (1970), Assistant Professor of Educational Technology and Librarianship A.B., Bethany College; M.S.L.S., Drexel Institute of Technology; C.A.S., University of Illinois. WEISSMAN, LEWIS A. (1971), Assistant Professor of Social Work A.B., Antioch College; M.A., University of Chicago. WEISSMAN, STANLEY N. (1962), Professor of Philosophy A.B., Brooklyn College; Ph.D., Columbia University. WEITZEL, ALLEN R. (1973), Assistant Professor of Speech Communication B.A., Bradley University; M.A., South Illinois University; Ph.D., University of Southern California. WELLS, RICHARD W. (1961), Associate Professor of Physical Education A.B., Occidental College; M.A., San Diego State University. WENDLING, AUBREY (1954), Professor of Sociology A.B., San Francisco State University; M.A., Ph.D., University of Washington. WERNER, JOAN T. (Mrs. R.) (1965), Associate Professor of Sociology B.S., State College, Pennsylvania; M.E., Pennsylvania State University; Ph.D., Syracuse University. WERTZ, REBECCA A. (Mrs. J. R.) (1972), Assistant Professor of Family Studies and Consumer Sciences B.S., M.S., University of Nebraska. WEST, JOHN D. (1969), Senior Assistant Librarian B.A., University of Oklahoma; M.S., Columbia University. WESTERVELT, WILLIAM O. (1964), Professor of German B.A., Colgate University; M.S., Elmira College; M.A., Ph.D., University of Southern California. WETHERILL, WILLIAM H. (1957), Professor of Elementary Education B.Ed., University of Toledo; M.A., Stanford University; Ph.D., University of Michigan. WHEELER, JAMES L. (1968), Assistant Professor of English A.B., M.A., Ph.D., University of California, Los Angeles. WHITBY, JOAN A. (1968), Assistant Professor of Physical Education B.S., Carthage College; M.S., Arizona State University. WHITMAN, DAVID G. (1969), Associate Professor of Mathematics B.A., M.S., Emory University; Ph.D., University of California, Riverside. WHITNEY, DANIEL D. (1966), Professor of Anthropology B.A., M.A., Ph.D., Michigan State University. WHITNEY, FREDERICK C. (1970), Assistant Professor of Journalism A.B., M.S., San Diego State University; Ph.D., United States International University. WICK, ARNE N. (1958), Professor of Chemistry B.S., M.S., Ph.D., University of Minnesota. WIDMER, KINGSLEY (1956), Professor of English B.A., M.A., University of Minnesota; Ph.D., University of Washington. WIJNHOLDS, HEIKO W. J. (1967), Professor of Finance LL.B., University of Potchefstroom, South Africa; Jur. D. (Econ.), University of Utrecht. WILBUR, ROBERT W. (1974), Assistant Professor of Finance B.A., University of Riverside; M.S., San Diego State University. WILDING, JOHN H. (1960), Professor of Elementary Education B.Arch, Catholic University of America; M.A., Teachers College, Columbia University; Ed.D., University of Southern California. WILHELM, BETTY J. (1961), Assistant Professor of Physical Education B.S., University of Wisconsin; M.A., University of Michigan. WILLERDING, MARGARET F. (1956), Professor of Mathematics A.B., Harris Teachers College; M.A., Ph.D., St. Louis University. WILLIAMSON, CLORIA R. (Mrs. C.) (1961), Assistant Professor of Physical Education A.B., M.A., California State University, Los Angeles. WILLIAMSON, JAMES E. (1968), Associate Professor of Accounting B.A., Northland College; M.S., Ph.D., University of Minnesota. WILLIAMSON, NANCEE B. (1969), Financial Aids Counselor B.S., West Virginia University; M.A., Ohio State University WILLIS, GEORGE C. (1967), Assistant Professor of Physical Education B.A., M.A., California State University, Los Angeles; additional graduate study at the California Institute of the Arts. WILSON, GALEN (1969), Associate Professor of Music, Imperial Valley B.A., M.A., University of California, Los Angeles; D.M.A., University of Southern California. WILSON, WILFRED J. (1963), Professor of Zoology A.B., California State University, Sacramento; M.A., Ph.D., University of California, Davis. WINDSOR, HENRY H., III (1968), Assistant Professor of Spanish and Portuguese B.A., M.A., Arizona State University; Ph.D. candidate, University of Arizona. WINSLOW, ROBERT W. (1965), Professor of Sociology B.A., California State University, Long Beach; M.A., Ph.D., University of California, Los Angeles. WOLF, ERNEST M. (1947), Professor of German Study at the Universities of Berlin, Paris, Muenster, Cambridge and Bonn. Ph.D., University of Bonn. WOLF, FRED A. (1964), Professor of Physics B.S., University of Illinois; M.S., Ph.D., University of California, Los Angeles. WOLTER, CERHARD H. (1957), Professor of Physics B.S., M.S. equivalent, University of Berlin. WONG, ALYCE J. (1973), Lecturer in Nursing R.N., Saint Thomas Hospital; B.S.N., Case Western Reserve University; M.S.N., University of Colorado Medical Center.

WOO, CATHERINE C. (Mrs. P. C.) (1970), Assistant Professor of Chinese A.B., M.A., San Diego State University. WOOD, JOHN K. (1973), Counselor B.S., California State University, Long Beach; Ph.D., Union for Experimental Colleges and Universities. WOOD, SALLY A. (1972), Assistant Professor of Speech Pathology and Audiology A.B., San Diego State University; M.A., California State University, Los Angeles WOODLE, GARY L. (1966), Assistant Professor of French B.A., M.A., University of South Dakota; Ph.D., University of Colorado. WOODSON, JOHN H. (1961), Professor of Chemistry B.A., Wesleyan University, Connecticut; Ph.D., Northwestern University WOTRUBA, THOMAS R. (1962), Professor of Marketing B.B.A., M.B.A., Ph.D., University of Wisconsin WRIGHT, RICHARD D. (1964), Professor of Geography A.B., A.M., Indiana University; Ph.D., University of Kansas. WRIGHT, TENNYSON J. (1973), Lecturer in Counselor Education B.S., Livingstone College; M.Ed., University of Georgia. WULBERN, JULIAN H. (1966), Professor of German A.B., University of California; M.A., University of Colorado; Ph.D., Northwestern University. WYLIE, DONALD C. (1966), Associate Professor of Telecommunications and Film B.A., University of Michigan; M.A., Ph.D., Michigan State University. YAHR, CHARLES C. (1955), Professor of Geography B.S., M.S., Illinois State Normal University; Ph.D., University of Illinois. YANIZYN, JAMES E. (1962), News Bureau Coordinator B.A., Boston University School of Public Relations. YAREMKO, ROBERT M. (1969), Associate Professor of Psychology B.A., University of Florida; M.A., Ph.D., Ohio University. YATES, CHARLES D. (1970), Assistant Professor of Music A.B., San Diego State University; M.A., California State University, Long Beach; additional graduate study, University of Southern California. YEE, WINNIE (1973), Counselor B.A., M.S., University of Wisconsin. YESSELMAN, CHARLOTTE B. (Mrs. M.) (1967), Associate Professor of Secondary Education B.A., Hunter College; M.S., New York University; Ph.D., University of New Mexico. YOUNG, ARTHUR (1967), Professor of Astronomy B.S., Allegheny College; M.A., Ph.D., Indiana University. YOUNG, RONALD R. (1971), Assistant Professor of Spanish A.B., Wisconsin State University; A.M., Ph.D., University of Illinois. YUN, CHANG SIK (1972), Assistant Professor of Japanese B.A., M.A., University of Michigan; Ph.D., Princeton University. ZAK, R. BETTY (1969), M.D., Health Services B.A., Immaculate Heart College; M.D., Woman's Medical College of Pennsylvania. ZAMPESE, ERNEST E. (1967), Coach, Football; Assistant Professor of Athletics B.S., M.A., California State Polytechnic University, San Luis Obispo. ZEDLER, JOY B. (Mrs. P. H.) (1972), Assistant Professor of Biology B.S., Augustana College; M.S., Ph.D., University of Wisconsin. ZEDLER, PAUL H. (1969), Associate Professor of Biology B.S., University of Wisconsin, Milwaukee; M.S., Ph.D., University of Wisconsin, Madison.
 ZIEGENFUSS, GEORGE (1948), Professor of Physical Education B.A., University of Washington; M.A., Ed.D., Teachers College, Columbia University.

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## San Diego State Foundation-**Appointments Under Grants** From Outside Funds

MURPHY, M. L., Lecturer in Social Work B.A., Washburn College; M.A., Denver University. SANCHEZ, MARIA-ELENA (Miss) (1972), Assistant Professor of Speech Pathology and Audiology B.A., M.A., University of Arizona. SCHIFFRIN, MARK (1967), Lecturer in Social Work B.S., New York University; M.S.W., University of California, Los Angeles. SHENKO, BARBARA E. (Mrs.) (1966), Lecturer in Social Work B.A., University of Chicago; M.S.S., Smith College, Mass.

## **Emeritus Faculty**

and the state of t	1952-1971
MALCOLM A. LOVE, Ph.D., President; Professor of Public Administration and Orban Studies	1935-1952
WALTER R. HEPNER, Ed.D., President	1947-1971
OHN W. ACKLEY, Ph.D., Professor of Speech Communication	1928-1968
OHN R. ADAMS, Ph.D., Chairman, Division of Humanities; Protessor of English	1941-1969
MARVIN D. ALCORN, Ed.D., Professor of Secondary Education	1947-1957
JULIA G. ANDREWS, M.A., Associate Professor of Art	1947-1972
JOE A. APPLE, Ed.D., Professor of Secondary Education	1928-1969
GUINIVERE K. BACON, M.A., Associate Professor of Elementary Education	1939-1964
KENNETH E. BARNHART, Ph.D., Professor of Sociology	1961-1973
WALLACE W. BRADLEY, M.A., Assistant Professor of Secondary Education	1931-1966
BAYLOR BROOKS, B.A., Professor of Geology	1926-1968
ELIZABETH M. BROWN, Ph.D., Professor of French	1947-1966
EUGENE P. BROWN, M.A., Professor of Accounting	1922-1959
LESLIE P. BROWN, Ph.D., Professor of Spanish and French	1947-1968
GAIL A. BURNETT, Ph.D., Professor of English and Classics	1048-1969
HILDING B. CARLSON, Ph.D., Professor of Psychology	1947-1973
L BERYL CAMPBELL, M.A., Associate Professor of Elementary Education	1040-1073
LEONARD E. CHADWICK, B.S., Associate Professor of Economics	1069 1079
IAMES L. CHAPMAN, J.D., Professor of Business Law	1059,1067
HELEN S. CLARK, B.A., Assistant Professor of Mathematics	1040.1063
NORITA N. COMIN, M.A., Associate Professor of Family Studies and Consumer Sciences	1001.1056
KATHERINE E. CORBETT, M.A., Associate Professor of Education	1060 1073
ROBERT L. CRAIG, M.S., Assistant Professor of Physics	1029 1073
IAMES E. CROUCH, Ph.D., Professor of Zoology	1932-1973
LORENZ F. deJULIEN, M.B.A., Lecturer in Marketing	1047,1073
SUE W. EARNEST, Ph.D., Professor of Speech Pathology and Audiology	1059-1064
ARTHUR T. EMERSON, B.S., Assistant Professor of Mathematics	1053,1963
WALTER B. FORD, B.E., Assistant Professor of Industrial Studies	1075,1056
LULA E. GERMANN, B.S., Supervising Librarian	1047-1071
E. DANA GIBSON, Ph.D., Professor of Information Systems	1045-1060
SIDNEY L. GULICK, Ph.D., Dean of Arts and Sciences; Professor of English	1911-1950
EDITH C. HAMMACK, B.A., Associate Professor of Education	1036-1057
ISABELLA S. HAMMACK, M.A., Associate Professor of Education	1094-1061
DOROTHY R. HARVEY, M.A., Assistant Professor of Botany	1009-1060
ROBERT D. HARWOOD, Ph.D., Professor of Zoology	1042 1045)
HARRIET HASKELL, Ph.D., Professor of English	1021 1061
GERALDINE K. HAYNES, B.S.L.S., Supervising Librarian	1061 1068
CHARLES M. HUFFER, Ph.D., Professor of Astronomy	1046 1071
IAMES J. HUNTER, JR., Ph.D., Professor of Secondary Education	1020 1062
EVERETT GEE JACKSON, M.A., Professor of Art	1020 1066
FRANK L. JOHNSON, Ph.D., Professor of English	1047 1071
LIONEL JOSEPH, Ph.D., Professor of Chemistry	1049 1070
DAVID C. KALBFELL, Ph.D., Lecturer in Physics	1064 1072
BENJAMIN J. KASTON, Ph.D., Professor of Zoology	1027 1000
CHESTER B. KENNEDY, Ph.D., Professor of English	1040 1070
WILLIAM M. KIDWELL, Ed.D., Director of Placement and Financial Aid; Professor of Psychology	1052 1000
JAMES S. KINDER, Ph.D., Professor of Education	1061 1070
MARGARET E. KINSEY, M.A., Circulation Librarian	1045 1000
ANGELA M. KITZINGER, Ph.D., Professor of Health Science and Safety	1049 1070
ORRIN E. KLAPP, Ph.D., Professor of Sociology	1049 1071
DONALD B. LEIFFER, Ph.D., Professor of Political Science	1949-19/1

MAURICE M LEMME, Ph.D., Dean of Graduate Studies: Professor of Mathematics	1948-1972
IAMES M. LINLEY, Ph.D., Professor of Secondary Education	1945-1970
LAWRENCE W. LUCE, Ed.D., Professor of Industrial Studies	1949-1969
RICHARD MADDEN, Ph.D., Professor of Education	1961-1964)
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
MARY MENDENHALL, Ph.D., Professor of Philosophy	1939-1963
CHESNEY R MOE Ph.D. Professor of Physics	1931-1972
VINNIE C. MOLITOR, A.B., Associate Professor of Geography	1914-1938
DOBIS G MURDOCK B.S.L.S. Catalog Librarian	1960-1972
MABEL A MYEBS, Ph.D., Professor of Microbiology	1946-1970
NEVA E NYE M Litt. Professor of Nursing	1953-1970
HEBBERT C PEIFFER Ph.D. Dean of Students: Professor of Psychology	1937-1972
PAUL L. PFAFF, Ph.D., Professor of Speech Pathology and Audiology	1931-1971
GEORGE L. PHILLIPS, Ph.D., Professor of English	1947-1973
LAUREN C. POST. Ph.D., Professor of Geography	1937-1969
E KINGSLEY POVENMIRE, M.F.A., Professor of Drama	1946-1971
BORFRT W. BICHARDSON, Ph.D., Professor of Geography	1946-1947)
DUDLEY H BOBINSON, Ph.D., Professor of Chemistry	1928-1973
SPENCER I. BOCERS, Ph.D., Professor of Anthropology	1930-1971
ROBERT D ROWE Ph.D. Professor of Chemistry	1946-1971
FI SIE I ROY A B. Assistant Catalog Librarian	1945-1959)
LISE & RUOCCO MA. Professor of Art	1934-1967
EREDERICK L. BYAN, Ph.D., Professor of Economics	1946-1965
PRANCES I SCHALLES A.B. Education and Curriculum Materials Librarian	1950-1968
MARION L SCHWOB M.S. Associate Professor of Physical Education	1934-1960
MINITON 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
CLAUDE E SHOLISE Ph.D. Professor of English	1945-1972
CLIFFORD F. SMITH, Ph.D., Professor of Astronomy	1937-1969
DEANE E SMITH M Mus Associate Professor of Music	1939-1970
DEATE F. ONLINA, MANAGE FROM AND	1922-1948

LEILA D. SMITH, M.A., Professor of Music ....

CHRISTINE SPRINGSTON, M.A., Professor of Music

ALVENA S. STORM, M.A., Professor of Geography ...

JOHN R. THEOBALD, Ph.D., Professor of English

JOHN A. TERHUNE, M.S., Assistant Professor of Physics .....

FRANCES B. TORBERT, M.A., Professor of Management ...

WOLCOTT C. TREAT, Ph.D., Professor of Psychology

VIRGINIA W. VOEKS, Ph.D., Professor of Psychology

ARTHUR C. WIMER, M.A., Professor of Journalism ...

HILDE K. WALKER, M.A., Assistant Professor of German

WILLIAM H. WRIGHT, Ph.D., Professor of Accounting ...

CHARLES C. SPORTSMAN, M.S., Associate Professor of Physical Education ....

HAMILTON L. STONE, B.S., Associate Professor of Mechanical Engineering

CURTIS R. WALLING, E.E., Professor of Electrical and Electronic Engineering

JOHN M. YARBOROUGH, Ph.D., Director of Housing; Professor of Education

ALFRED E. WHITE, Ed.D., Assistant to Dean of the College; Professor of Education .....

ERNEST F. WITTE, Ph.D., Dean of the School of Social Work; Professor of Social Work

RUTH A. TALBOY, M.A., Associate Professor of Family Studies and Consumer Sciences ...

DONALD R. WATSON, Ed.D., Vice President for Academic Affairs; Professor of Physical Science

HARRY C. STEINMETZ, Ph.D., Associate Professor of Psychology

DOROTHY J. TOLLEFSEN, M.A., Professor of Physical Education ...

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## FACULTY (Part-time)

Aboud, Judith A. M.A., Political Science Abrams, Alvin J. Ph.D., Psychology Abshear, Donald R. A.B., Athletics Alexander, Cynthia L. M.A., Public Administration and Urban Studies Allen, Mary L. M.S., Family Studies and Consumer Sciences Almstedt, Ruth F. M.A., Anthropology Anderson, Hollis L. B.A., Health Science and Safety Anderson, Joan B. Ph.D., Economics Andrews, Maxine P. M.A., Afro-American Studies Argo, Patricia L. M.A., Physical Education Ariessohn, Richard M. M.A., Public Administration and **Urban** Studies Atherton, Jeanne L. M.A., Educational Technology and Librarianship Atkinson, Harry R. B.A., Recreation Atwood, Marije H. Ph.D., Imperial Valley Campus Balestra, Gianfranca. Laurea, French and Italian Languages and Literatures Balestrieri, Donald A. High School Diploma, Music Barilotti, D. Craig M.A., Botany Barnier, Barbara E. M.A., Elementary Education Barrett, Florence J. High School Diploma, Native American Studies Bearden, Margaret F. M.A., History Belenzon, Arthur B.A., Recreation Berry, Sylvia M.A., Elementary Education Beyer, Willena A. B.A., Speech Pathology and Audiology Blourock, Barbara S. M.A., Mexican-American Studies Borges, Marilyn A. Ph.D., Psychology Boyer, John L. M.D., Physical Education Brahtz, John F. Ph.D., Civil Engineering Branan, Elizabeth M. Licence en Droit, French and Italian Languages and Literatures Braun, Richard W. M.M., Music Breeden, Joseph S. M.B.A., Marketing Bryson, Rebecca B. Ph.D., Psychology Campbell, K. Cameron M.D., Microbiology Cantrell, Robert W. M.D., Speech Pathology and Audiology Capp, Karen I. M.S.W., Social Work Carrier, Ralph F. B.A., Elementary Education Chacon, Terry M.A., Economics Charters, Nancy I. M.A., Speech Pathology and Audiology Chavez, Enriqueta B.S., Mexican-American Studies Christianson, Margaret L. A.B., Secondary Education Clapp, John A. M.S.W., Counseling Clay, Ruth L. M.A., Secondary Education Clayton, Ben C. A.B., Journalism Cleland, Barbara D. M.M., Music Coleman, Eugene V. M.A., Geography Coleman, Simon F. L.L.B., Accounting Colwell, Carolyn B. M.A., Nursing Comstock, Paul B. J.D., Telecommunications and Film Conklin, Marie E. Ph.D., Biology Corum, Charles G. M.A., Geography Costello, Margaret C. B.S., Elementary Education Coughlin, Hugh J. M.A., Religious Studies Crary, Dolly M. M.A., Health Science and Safety Crownover, Joe B. M.S., Information Systems Crutcher, Thomas W. Ed.D., Imperial Valley Campus Cummins, Patti C. M.A., Elementary Education Cunningham, Josephine D. M.M.E., Music Cutsinger, Shannon L. M.S., Finance

Czerner, Alfred P. Tecnico, Athletics Daniels, Rochelle K. B.A., Sociology Davidson, Robert M. Ph.D., Literature Davis, James R. M.E., Civil Engineering Dawson, Mina K. M.A., Special Education Dil, Afia Ph.D., Literature Dirks, Ruth E. B.A., Study Skills Center Dominguez, Ruben E. M.A., Social Work Donnelly, Howard C. M.A., Management Duarte, Gisella A. M.A., Spanish and Portuguese Languages and Literatures Duke, Douglas Ph.D., Astronomy Edmonds, James D. Ph.D., Physics Ellenbogen, Joseph M.S., Public Administration and Urban Studies Ellis, Mary M. B.S., Secondary Education Ellsworth, Paul T. Ph.D., Economics Emami, Mansour M.A., Telecommunications and Film Enderud, Wilbur D. M.A., Information Systems Enos, Donald F. M.A., Elementary Education Epstein, Fanny L. Ph.D., Philosophy Erick, Gail E. M.A., Art Evans, H. Jean M.A., Secondary Education Evans, Michael S. J.D., Social Work Farrelly, Joseph R. B.S., Information Systems Fawcett, LaMar A. A.B., Counselor Education Feenberg, Anne-Marie Diplome d'études superieures, French and Italian Languages and Literatures Felix, Joseph A. High School Diploma, Mexican-American Felix, Ricardo F. High School Diploma, Mexican-American Studies Ferguson, Douglas H. M.A., Imperial Valley Campus Fish, Charles T. M.B.A., Finance Fisher, William H. M.A., Secondary Education Fix, Edwin J. M.A., Information Systems Flagg, Virginia G. Ph.D., Economics Flahan, Carl M. B.S., Physical Education Fleming, Robert A. Ph.D., Psychology Flores, Rene M. B.A., Mexican-American Studies Fogel, Lawrence J. Ph.D., Public Administration and Urban Studies Fontius, David H. A.B., Physical Education Ford, Janet E. M.A., Mathematics Forster, Albert E. High School Diploma, Art Fox, Thomas K. M.B.A., Accounting Frankum, Ronald B. J.D., Public Administration and Urban Studies Frey, George T. M.A., Educational Administration Fuentes, Jose A. M.P.H., Mexican-American Studies Fullinwider, John A. M.S., Management Funston, Janet F. M.A., French and Italian Languages and Literatures Garcia, Mario T. M.A., Mexican-American Studies Garcia, Norma L. B.A., Elementary Education Gattey, James M. L.L.B., Public Administration and Urban Studies Gay, Nan M. B.A., Music Gershwin, Madeline W. M.A., Nursing Gerstein, Martin Ed.D., Counselor Education Getner, Gus E. M.A., Mexican-American Studies Gilmore, Robert P. Th.M., Sociology Githens, William H. Ph.D., Management Goff, James L. M.C.P., Public Administration and Urban Studies Goldstein, Margaret M. M.P.A., Public Administration

and Urban Studies

Golles, Eugene H. M.A., Health Science and Safety Gore, Bonnie J. High School Diploma, Recreation Gorski, Ann B. M.S., Physical Education Gould, Darlene C. M.A., Speech Pathology and Audiology Grace, Cynthia R. M.C.P., Public Administration and Urban Studies Graham, Kenneth J. M.A., Anthropology Greenberg, Roger D. B.M., Music Greenbush, Daniel J. B.A., Music Greenwood, Norris M.A., Special Education Gregg, Michael C. Ph.D., Physics Groves, James R. M.A., Philosophy Gutierrez, Ricardo J. M.S., Counselor Education Hafford, David G. B.S., Finance Hagendorf, Howard C. Ph.D., Aerospace Engineering Hall, George V. Ed.D., Educational Administration Hallenstein, Craig B. M.A.T., Counseling Halley, Robert M.A., Telecommunications and Film Hammond, James D. M.S., Imperial Valley Campus Hammons, Miriam B. M.A., Elementary Education Harper, Richard D. M.A., Economics Harris, Joanne A.B., Elementary Education Harris, Leroy E. M.A., Secondary Education Harris, Lynne M.A., Counseling Harrison, A. Powell M.A. & C.S.P., Health Science and Hartman, Paul W. Ph.D., Speech Pathology and Audiology Harvey, Anne-Charlotte H. M.A., Drama Hays, Rachel I. Ph.D., Biology Heifetz, Ruth M. M.D., Microbiology Hemmer, William J. M.S. & M.Ed., Management Henderson, Laruba B. B.M., Music Henn, John T. B.A., Athletics Hilbert, Raymond P. M.S., Mathematics Hill, Gloria M.S., Music Hill, John M. M.A., Secondary Education Hill, Lloyd V. M.S., Finance Hillyard, Martha C. Ph.D., Psychology Hitchcock, Damon J. M.A., Art Holcomb, Donald E. M.S.E.E., Electrical and Electronic Engineering Holley, Joyce H. B.A., Recreation Holloway, David L. M.B.A., Accounting Howard, Deane H. M.A., Center for Economic Education Hubbard, Evangelina B. M.A., Mexican-American Studies Huber, Sheryl S. B.M., Music Hubert, Ruby L. M.S.W., Social Work Hudson, Garl E. M.S.W., Social Work Huerta, Elias D. M.A., Imperial Valley Campus Huntoon, Robert P. M.B.A., Finance Irgang, Virginia A. B.A., Family Studies and Consumer Iverson, Lucille E. High School Diploma, Physical Education Jackson, Rubye L. A.B., Elementary Education Jessop, Mary C. M.A., Physical Education Johns, Ann M. M.A., Literature Johnson, Laverne C. Ph.D., Psychology Johnston, Eloise R. M.A., Speech Pathology and Audiology Jones, Barbara M. M.A., Secondary Education Kagan, Arlene S. B.A., Speech Pathology and Audiology Kahn, Edward M.B.A., Accounting Kane, Edith W. M.S.W., Imperial Valley Campus

Kane, Terry J. Ph.D., Imperial Valley Campus and Sociology Kaplan, Jane T. M.A., Counseling Kaplan, Robert M. Ph.D., Psychology Kasper, Janice C. B.A., Anthropology Kihm, Robert T. Ph.D., Electrical and Electronic Engineering King, Irvill C. M.A., Imperial Valley Campus King, Lawrence T. B.A., Journalism Kirk, Richard O. M.A., Secondary Education Kioller, Kendall I. B.S., Industrial Arts Knott, Joyce E. B.A., Family Studies and Consumer Kochanski, Marianne V. M.P.H., Health Science and Komara, Paul A. B.A., Industrial Arts Kosmos, George M.S.E., Electrical and Electronic Engineering Kripke, Linda N. M.A., Family Studies and Consumer Kushinsky, Stanley Ph.D., Chemistry Kwiecinski, M. Christopher M.A., Economics Landon, Alex L. J.D., Public Administration and Urban Studies Laperrousaz, Helene L. Diplome d'etudes superieures, French and Italian Languages and Literatures Lawyer, Kenneth Ph.D., Marketing Learn, Clarence R. B.A., Journalism Lee, Jong H. A.B., Physical Education Lee, Kyung M.A., Geography Leroy, Douglas K. M.S.W., Social Work Lewis, Martin C. Ph.D., Biology Litrownik, Hollis M. M.A., Art Locke, Peter A.A., Industrial Arts Lofft, William A. M.B.A., Finance Logan, George R. A.A., Athletics Logan, Hope S. M.S.W., Social Work Logsdon, John W. M.A., Secondary Education Lopez, Simon B.A., Imperial Valley Campus Lopez, Sonia A. B.A., Mexican-American Studies Lott, Nina B. Ph.D., Telecommunications and Film Love, Syd B.A., Journalism Loveland, George I. A.B., Recreation Lowrey, Lloyd T. B.S., Recreation Lutz, Carl L. M.A., Geography Lynn, Clarence D. B.A., Center for Economic Education Lyon, John E. M.A., Music Lyons, William J. M.A., Secondary Education Maranon, Susan P. M.A., Imperial Valley Campus Margolin, Frances M. Ph.D., Family Studies and Consumer Sciences Marshall, Paul M.A., Telecommunications and Film Martin, Lawrence A. M.A., Information Systems Mason, Anthony K. Ph.D., Public Administration and **Urban** Studies Mason, Raymond M. M.S., Elementary Education Mathewson, Sue F. Sc.D., Biology Maus, John A. M.S., Information Systems McCallum, William A. Ph.D., Mathematics McCarty, James R. B.A., Public Administration and Urban Studies McFall, Mary M.A., Study Skills Center McGlathery, Monte N. M.S., Information Systems McKenna, John F. M.A., Management McNary, Nancy W. B.A., Elementary Education Mehlick, Ferdinand D. M.B.A., Management Michaelson, Janet A. M.S., Elementary Education Mikolon, Arthur G. B.S., Microbiology

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Miller, Gertrude E. M.S., Family Studies and Consumer Sciences Minnich, Madelyn J. M.A., Art Miyoshi, Clifford High School Diploma, Athletics Morey, Fred J. A.B., Public Administration and Urban Morgan, Rita A. M.S.W., Social Work Morris, Judith S. Ph.D., Biology Mracek, Virginia A. M.A., French and Italian Languages and Literatures Mueller, Antoinette M. M.S., Counselor Education Mueller, Paul D. M.S., Sociology Munns, Collins R. M.S.S.W., Social Work Murphy, Shirley T. A.A., Native American Studies Muse, Charles W. B.A., Finance Naas, Margaret A. M.A., Secondary Education Nadeau, Adeline T. B.A., Mexican-American Studies Nagel, Melvin M.A., Imperial Valley Campus Naveh, Gila O. B.A., Classical and Oriental Languages and Literatures Nejame, Alfred B. M.A., Public Administration and **Urban** Studies Nelson, David A. M.S., Marketing Newton, Edward M. M.A., Political Science Nidorf, Louis J. Ph.D., Psychology Nissley, Mary C. B.A., Mexican-American Studies Noonan, William E. High School Diploma, Art Nurmberg, Reet A. Ed.D., Physical Education Oades, Rizalino A. M.A., History Oakley, Richard C. B.A., Public Administration and Urban Studies O'Donnell, Terry L. M.A., Music and Drama Olivier, Florence E. M.S.W., Social Work Oriol, Michel F. Agregation, History and Sociology Ortega, Alicia Q. M.A., Imperial Valley Campus Ortega, Rafael C. B.A., Athletics Padelford, Betty L. Ph.D., Information Systems Palacios, Ezequiel F. M.A., Mexican-American Studies Panarisi, Frank B.A., Public Administration and Urban Studies Parkinson, Gaylord B. M.D., Health Science and Safety Parks, William E. M.S., Mathematics and Information Systems Patterson, Richard P. M.S., Recreation Pattie, John H. J.D., Imperial Valley Campus Payne, William H. M.A., Secondary Education Peavey, William R. M.B.A., Accounting Peer, Robert W. M.S.W., Social Work Phillips, Donald M. M.S., Center for Economic Education Pickslay, Alba A. M.A., Spanish and Portuguese Languages and Literatures Pincetl, Gisele B.A., French and Italian Languages and Literatures Polowniak, William A. Ph.D., Social Work Power, James D. B.A., Physical Education Powers, Robert S. M.S., Finance Preston, Elizabeth S. B.A., Mexican-American Studies Prokop, Harvey L. M.A., Center for Economic Education Pumphrey, Dan L. A.B., Secondary Education Quinn, Ronald J. M.A., History Quon, Robert K. M.A., Center for Economic Education Rand, Richard M. B.A., Finance Rascon, Francisca B.A., Mexican-American Studies Ravenis, Joseph V. Ph.D., Management Raymonde, Raymond R. M.S., Marketing Ream, Merrill L. M.A., Center for Economic Education Redinbaugh, Larry D. Ph.D., Marketing

Redmond, Raymond B. M.S., Microbiology Regan, Robert S. B.A., Telecommunications and Film Rezek, Jane C. M.A., Elementary Education Richards, Jacqueline J. M.A., Speech Pathology and Audiology Richardson, Ramona J. M.A., Information Systems Rico, Randolph M. B.A., Mexican-American Studies Riffenburgh, Robert H. Ph.D., Physical Science Ripley, Robert M.A., Information Systems Robershaw, Phyllis L. B.A., Elementary Education Rogert, Sybil I. M.A., Mathematics Rother, Carole A. Ph.D., Literature and Office of the Vice President for Academic Affairs Roye, Cleveland E. High School Diploma, Industrial Arts Rusk, Robert H. M.S., Accounting Sanchez, Adolpho M.S.W., Counselor Education and Secondary Education Sandback, Patricia R. B.S., Physical Education Saunders, Marita E. B.S., Secondary Education Sauvajot, John B. M.S., Public Administration and Urban Studies Schiff, Maurice M.D., Speech Pathology and Audiology Schmock, Joyce C. Ed.D., Elementary Education Scholz, Hans-Ulrich Ph.D., Chemistry Schroeder, Ted N. A.B., Recreation Schuckit, Marc A. M.D., Psychology Schulze, Carl O. A.B., Educational Technology and Librarianship Schwartz, Nancy J. M.S., Nursing Shamasko, Ellen O. M.A., Speech Pathology and Audiology Shapiro, Michael D. Ph.D., Mathematics Sharpe, David M. M.A., Educational Technology and Librarianship Shelton, Norrene A. M.S.W., Afro-American Studies and Family Studies and Consumer Sciences Silver, Gerald M. A.B., Counseling Sleet, David A. Ph.D., Health Science and Safety Smith, Elbert B. M.S., Finance Smith, Guy D. M.A., Study Skills Center Smyth, John B. M.S., Physics Solis, Faustina M.S.W., Social Work Solomon, Norman S. M.S., Accounting Someck, Alan M.A., Sociology Spisak, David J. B.S., Public Administration and Urban Studies Sprague, Thelma V. M.A., Health Science and Safety Stamper, Norman H. A.S., Public Administration and Urban Studies Steen, Paul J. B.A. & B.S., Telecommunications and Film Stein, Robert M.A., Secondary Education Stern, Charles A. M.D., Health Science and Safety Stone, Doris J. B.M., Music Stone, Warren D. M.A., Counseling Stuart, Darwin G. Ph.D., Public Administration and Urban Studies Stutz, Audrey M. Ph.D., Biology Swanson, Clayton G. A.B., Public Administration and Urban Studies Swenson, Darrell M. B.A., Athletics Switzer, Wilbur J. M.A., Geography Talbott, Robert N. M.Ed., Secondary Education Taylor, Mary M. A.B., Elementary Education Templeton, Dorothy G. M.A., Recreation Thompson, Claudia L. M.S., Counselor Education Throckmorton, Harold L. M.A., Geography Tibbs, Thomas S. M.A., Art

Toman, David L. M.A., Mathematics Torbert, Frances B. M.A., Management

Treadwell, Peter J. B.A., Elementary Education Treske, Paul S. M.S.W., Social Work Trotter, Joseph T. B.S., Music Trunkfield, Mona L. M.A., Art Tucker, Eleanor N. M.A., Speech Communication Tung, Hsuan-Sun. Diploma, Classical and Oriental Languages and Literatures Tuttle, Dennis C. M.S., Art Urista, Alberto H. B.A., Mexican-American Studies Van Hoorn, Willem C. Ph.D., Psychology Varga, Beverly A. M.S., Family Studies and Consumer Sciences Veitzer, Leonard M. B.A., Architecture Von Werlhof, Jay C. M.A., Imperial Valley Campus Walker, Niles A. Ph.D., Electrical and Electronic Engineering Walt, Thomas E. M.A., Secondary Education Warner, Mary Y. B.A., Family Studies and Consumer Warner, Melvin J. M.M., Music Watkins, Edwin A. M.A., Microbiology Waymon, Carrol W. M.S., Secondary Education Webster, John C. Ph.D., Speech Pathology and Audiology Weichel, Minnie L. M.A., Elementary Education

Weisiger, Cary N. B.A., Athletics
Weiss, Herbert V. Ph.D., Chemistry
Wesson, Ann M. M.A., Mathematics
Wetzell, Frederick A. M.A., Secondary Education
Wight, Carroll H. M.A., Information Systems
Willens, Lawrence A. M.A., Physical Education
Williams, Diane R. M.A., Speech Pathology and Audiology
Williams, Leon L. A.B., Public Administration and Urban Studies
Wilson, Josephine F. M.A., Speech Pathology and Audiology
Witkowski, Henry J. M.A., Industrial Arts
Wolfer, Donald P. M.S., Public Administration and

Urban Studies Wolter, Diemut Ph.D., German and Slavic Languages and Literatures

Wong, Mary J. M.A., Imperial Valley Campus Wright, Laurence N. M.S., Public Administration and Urban Studies

Wright, Penny L. M.B.A., Information Systems Young, Lauren M.A., Elementary Education Zasueta, S. Albert M.A., Physical Education Zetts, Paul A. B.S., Health Science and Safety 428 / Index

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printed in CALIFORNIA OFFICE OF STATE PRINTING

△85474-854 10-73 40M

