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CALIFORNIA STATE UNIVERSITY AND COLLEGES

1972-73





General Catalog

and

Announcement of Courses

Volume 59

1972

San Diego State San Diego, California

10-82.85

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1972-1973

Academic Calendar

Intersession (2 weeks).

Term I summer session (6 weeks).

Term II summer session (3 weeks).

Summer Sessions, 1972

June 12–23 June 26–August 4 August 7–25

Fall Semester, 1972

August 1-31

May 6, June 10, July 5, 6, 8, August 15, 22 and 26

September 8, 12, 13

September 11 September 11 and 12

September 11–15 September 14, 27, October 7, November 7 and 8

September 19 September 19

September 21

September 30, and November 4

October 3

Applications for admission or readmission to San Diego State for the Spring semester 1973. Accepted after this only until enrollment quotas are met.
Admissions tests for fall semester 1972 for upper division transfer students: College aptitude test; and writing competency test for students transferring with 45 units or more.
Mathematics placement examinations for students planning to enroll in Math 3, 4, 12, 20, 21, 40, 50; or Economics 2.
Opening date of the academic year.

Mechanical Drawing test 8 a.m.–12 noon.

Testing, advising and registration.

Fundamentals test for transfer students entering elementary or kindergarten —primary education.
First day of classes.
File applications for admission to elementary teacher education, assembly 11 a.m.
File applications for admission to secondary teacher education, assembly 11 a.m.

Comprehensive College Tests, general examinations for students entering secondary education. Last day to apply for refunds. October 6

October 6

October 9 October 23 November 1-30

November 17

November 23–25 December 1

December 16 January 2 January 10

January 20

January 22–23 January 24 February 2

Spring Semester, 1973

December 1, 2, January 6, 11 and February 1

August 1-31

January 9, February 27, March 19, 20, April 13 and 25

February 3

Academic Calendar

Last day to withdraw from class without penalty for unsatisfactory work. Last day to file application for the bachelor's degree for mid-year graduation. Columbus Day Holiday-Veterans' Day Applications for admission or readmission to San Diego State for the fall semester 1973. Accepted after this date only until enrollment quotas are met. Last day to withdraw from class or change program. Thanksgiving recess. Last day to file application for the bachelor's degree for June or summer graduation. Last day of classes before winter recess. Classes resume. Last day for a complete withdrawal from college. Last day of classes before final examinations. Study and consultation. First day of final examinations. Last day of fall semester.

Admissions tests for spring semester for upper division transfer students, College Aptitude test; and writing competency test for students transferring with 45 units or more.

Applications for admission or readmission to San Diego State for the Spring semester 1973. Accepted after this date only until enrollment quotas are met.

Fundamentals test for transfer students entering elementary or kindergarten —primary education.

Mathematics placement examinations,

Academic Calendar

	3. 4. 12. 20, 21, 40, 50 and Economics 2.
February 5	Mechanical Drawing Test.
February 5	First day, second semester.
February 5–9	Testing, advising and registration.
February 12	Holiday-Lincoln's Birthday.
February 13	First day of classes.
February 13	File applications for admission to ele- mentary teacher education assembly 11 a.m.
February 19	Holiday-Washington's Birthday.
February 20	Last day to apply for refunds.
February 17 and March 17	Comprehensive College Tests, general examinations for students entering secondary education.
March 2	Last day to withdraw from class without penalty for unsatisfactory work.
April 13	Last day to withdraw from class or change program.
April 14	Last day of classes before spring recess.
April 16–21	Spring Recess.
April 23	Classes Resume.
May 5, June 13, 20, 23, July	
11, 13 and 14	Admissions tests for fall 1973 semester for upper division transfer students: College aptitude test; and writing competency test for students transfer- ring with 45 units or more
May 6	San Diego State Founders' Day.
May 17	Last day for complete withdrawal from college.
May 26	Last day before final examinations.
May 28	Holiday-Memorial Day.
May 29–30	Study and consultation.
May 31	First day of final examinations.
June 3	Baccalaureate services.
June 8	Commencement. Last day of spring se- mester.
Summer Session, 1973	farmer in the second of the
T	

June 11–22 June 25–August 3 August 6–24

Intersession (2 weeks). Term I summer session (6 weeks). Term II summer session (3 weeks).

Schedule of Fees

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

FEES PAYABLE AT TIME OF REGISTRATION (PER SE-MESTER) CHECKS ACCEPTED FOR EXACT AMOUNT OF FEES. (IF YOUR CHECK IS RETURNED BY THE BANK FOR ANY REASON, YOUR REGISTRATION WILL BE CAN-CELLED.)

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

unit-3.9 units	\$60.50
units-7.9 units	65.50
3 units-11.9 units	70.50
2 or more units	80.50

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:

(In addition to materials and service and activity fees)

Nonresident student	enrolled	for 1	5 units	or	more	\$555.00
Nonresident student	enrolled	for les	s than	15	units or	frac-
tion thereof-Per	unit					\$37.00

(for fee-paying purposes, zero and ½unit courses are counted as one unit)

Tuition For Foreign Student:

(Citizen and resident of a foreign country)

Tuition in addition to materials and service and activity fees)	
Foreign Student enrolled for 15 units or more\$555.	00
Foreign student enrolled for less than 15 units or fraction	
thereof—Per unit\$37.0	0*

(for fee paying purposes, zero unit and $\frac{1}{2}$ unit courses are counted as one unit)

Parking Fees

15

Non-reserved parking space, per semester\$13.00 Car Pool—see cashier at registration.

*Foreign students who enrolled at this university before November 24, 1970 and are unable to pay the full tuition must pay \$20.00 per unit at the time of registration. The additional \$17 per units must be paid 30 days prior to the end of the academic term for which it is due, or the registration will be cancelled.

Schedule of Fees

Less than four-wheeled, self propelled vehicle \$3.25

Miscellaneous Fees

ees payable when service is rendered)	
Application for admission or readmission	\$20.00
Late registration	5.00
Failure to meet administratively required appointme	ent on 2.00
Transcript of record	1.00
R.O.T.C. deposit (unexpended portion is refundable	e) 10.00
Check returned for any cause Loss or damage of equipment and library books	2.00

REGULAR SESSION FEE REFUNDS

Materials and Service Fees:

To be eligible for a refund of materials and service fees a student must completely withdraw from college. 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 college must obtain a withdrawal card from the Registrar's Office and file a refund application with the Cashier's Office, CLS 108, not later than 14 days following the day the academic term begins. All but \$13.00 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 thereof is received by the Cashier's Office within the following time limits:

	Time Limit	Amount of refund
(1)	Before or during the	
	first week of the	
	semester	100 percent of fee
(2)	During the second	and the second second second
	week of the semester	90 percent of fee
(3)	During the third	
	week of the semester	70 percent of fee
(4)	During the fourth	··· portoint or roc
	week of the semester	50 percent of fee
(5)	During the fifth week	or percent of fee
	of the semester	30 percent of fee
(6)	During the sixth	or percent of fee
	week of the semester	20 percent of foo
Pa	rking E	to percent of fee

Parking Fee:

This schedule of refunds refers to calendar days, commencing on the

date of the term when instruction begins: Non-reserved space per semester:

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

The student applies for the parking refund at the security office in the Administration Building, bringing with him his parking decal.

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

SUMMER SESSION FEES

Tuition, each session	(per unit) \$24.00
Activity fee:	
Term I	2.00
Term II	1.00
Student union fee:	
Term I	3.50
Term II	2.00
Parking fees:	
Nonreserved spaces:	
Six-week session	5.00
Other sessions of one week or more	Per week 1.00

EXTENSION COURSE FEES

Lecture or discussion course	(per	unit)	19.00
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EXEMPTIONS

Students under Public Law 894, 87–815, California state veteran, 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.



Organization and Administration

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

15

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Trustees

of the California State University and Colleges

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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 (1974)

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The California State University and Colleges

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Sonoma State College 1801 East Cotati Avenue Rohnert Park, California 94928 Thomas H. McGrath, President (707) 795-2011

Stanislaus State College 800 Monte Vista Avenue Turlock, California 95380 Carl Gatlin, President (209) 634-9101

The California State University and Colleges

On November 29, 1971, the Governor signed into law Assembly Bill 123 which created The California State University and Colleges, thereby redesignating the system previously known as the California State Colleges. This legislation provided legal recognition that the California State Colleges have achieved the status of universities in their first decade as a unified system of higher education.

First brought together as a system under an independent Board of Trustees by the Donahoe Higher Education in the early 1960's, the California State University and Colleges now consists of nineteen campuses, covering the state from Humboldt in the north to San Diego in the south. Current enrollment exceeds 263,000 full- and part-time students, with a faculty of approximately 14,500.

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

The Trustees, the Chancellor, and the Presidents develop systemwide policy, with actual implementation at the campus level taking place through broadly based consultative procedures. The Academic Senate of the California State University and Colleges, made up of elected representatives of the faculty from each campus, recommends academic policy to the Board of Trustees through the Chancellor.

Each campus in the system has its own unique geographic and curricular character, but all emphasize the liberal arts and sciences. Programs leading to the bachelor's and master's degrees are master-planned to anticipate and accommodate student interest and the educational and professional needs of the State of California. A limited number of joint doctoral programs are also offered. Although there is increasing recognition of the importance of research to the maintenance of quality teaching, the primary responsibility of the faculty continues to be the instructional process.

While San Jose State College, the oldest, was founded over a century ago, prior to World War II only seven State Colleges were in existence, with a total enrollment of 13,000. Since 1947, twelve new campuses have been established, and sites have been selected for additional ones in Ventura, San Mateo and Contra Costa Counties. California State College, Bakersfield, the newest, was opened to students in 1970. Enrollment in the system is expected to pass 300,000 by 1980.

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R. Scott Snell	President, San Diego State Alumni

Association

-

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Test Officer	Michael A Irwin
Test Officer	Herman Boemmich
Director of Health Services	Bobert C Bay
Director of Housing	John Varborough
Director of Career Planning and Financial Aid	Edward M Webb
Coordinator of Career Planning and Placement	Lash H Laker
Coordinator of Financial Aid and Scholarships	Thomas B. Poorson
Graduate Manager	Harvoy I Coodfriend
Director of Business Affairs	William I Erickson
Assistant Director	Carolun E Kosslor
Business Services Officer	Wills D. Basisfer
Support Services and Equipment Coordinator	willa D. Roelorsz
Budget Planning Officer	Charles II Jahren
Accounting Officer	Charles H. Jonnson
Chief of Plant Operations	Timether V Hellel
Personnel Officer	. Innothy V. Hallahan
Housing Manager	Lois W. Sisson
Supervising Security Officer	Willard W. Trask
Contract, Children and Children	. vincent M. McGrath

Colleges, Schools

And Departments

	Chairmen
COLLEGE OF ARTS AND LETTERS	Warren P. Carrier, Dean
Associate Dean	Richard D. Wright
Anthropology	Mary E. Shutler
Classical and Oriental Languages	Steven C. Schaber
Foonomios	Robert F. Barckley
Economics	Lowell Tozar (Asting)
English	Lowell Tozer (Acting)
French-Italian	James D. Blish
Geography	James D. Blick
German-Russian	Harry W. Paulin
History	Dennis E. Berge
Philosophy	Walter H. Koppelman
Political Science	Charles F. Andrain
Religious Studies	G. Ray Jordan
Sociology	
Spanish-Portuguese	Iames L. Walsh
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COLLEGE OF PROFESSIONAL STUDIES	Maxwell L. Howell, Dean
Associate Dean	Norman Rost
Aerospace Studies	Lt. Col. Harold S. French
Art	Paul A. Lingren
Athletics	O. Kenneth Karr, Ir.
Droma	Don W Powell
Family Studios and Consumer Sciences	Don W Thiel
Hall Colores and Consumer Sciences	William C Burgess
Health Science and Safety	Corold D Poilou
Industrial Arts	Each C Halanak
Journalism	Frank S. Holowach
Music	J. Dayton Smith
Nursing	Elizabeth A. Petrie
Physical Education	Albert W. Olsen
Public Administration and Urban Studies	James D. Kitchen
Recreation	
Speech Communication	Jack Mills
Speech Pathology and Audiology	
Telecommunications and Film	
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COLLEGE OF SCIENCES	Albert W. Johnson, Dean
Associate Dean	John D. Schopp
Associate Dean	John D. Schopp Hale L. Wedberg
Associate Dean Associate Dean	John D. Schopp Hale L. Wedberg Burt Nelson
Associate Dean Associate Dean Astronomy Biology	John D. Schopp Hale L. Wedberg Burt Nelson William E. Hazen
Associate Dean Associate Dean Astronomy Biology	John D. Schopp Hale L. Wedberg Burt Nelson William E. Hazen Hale L. Wedberg
Associate Dean Associate Dean Astronomy Biology Botany	John D. Schopp Hale L. Wedberg Burt Nelson William E. Hazen Hale L. Wedberg Earl P. Wadsworth Jr
Associate Dean Associate Dean Astronomy Biology Botany Chemistry	John D. Schopp Hale L. Wedberg Burt Nelson William E. Hazen Hale L. Wedberg Earl P. Wadsworth, Jr. Biobard L. Threat
Associate Dean Associate Dean Astronomy Biology Botany Chemistry Geology	John D. Schopp Hale L. Wedberg Burt Nelson William E. Hazen Hale L. Wedberg Earl P. Wadsworth, Jr. Richard L. Threet

Colleges, Schools and Departments

Mr. Hillion	William L. Baxter
Microbiology	Norman F. Dessel
Physical Science	Laguas D. Templin
Physics	Jacques D. Tempin
D h l m	Robert Penn
Psychology	Boger F Carpenter
Zooloy	

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ADMINISTRATION	
Associate Dean	Maurice L. Crawford
Assistant Dean for Graduate Studies	William F. Barber
Assistant Dean for Graduate Studies	W Wallace Harned
Accounting	William W Beints
Finance	Robert C. Langenbach
Information Systems	Themes I Atobicon
Management	Thomas J. Atchison
Marketing	Richard D. Darley

SCHOOL OF EDUCATION	Manfred H. Schrupp, Dean
Associate Dean	Francis A. Ballantine
Coordinator, Educational Administration	John T. Warburton
Coordinator, Counselor Education	John D. Chamley
Coordinator, Elementary Education	
Coordinator, Educational Technology	
and Librarianship	
Coordinator, Secondary Education	
Coordinator, Special Education	Shirley E. Forbing
Coordinator, Clinical Training Center	Leif Fearn
Coordinator, Community College Programs.	Robert D. Smith, Jr.
Coordinator, Graduate Programs	Clarence E. Fishburn
CONCOL OF FRIGHTERPRIS	

SCHOOL OF ENGINEERING	Martin P. Capp, Dean
Associate Dean	Fredrick T. Ouiett
Aerospace Engineering	John F. Conly
Civil Engineering	Frank E. Stratton
Electrical and Electronic Engineering	
Mechanical Engineering	Richard A. Fitz
SCHOOL OF SOCIAL WORK	Kurt Beichert Dean
Associate Dean	Joseph B. Kelley
IMPERIAL VALLEY CAMPUS	Joseph A. Rodney, Dean
Associate Dean	Elmer D. Baldwin

General Information

General Information Imperial Valley Campus Special Programs and Services Financial Aid Student Services

General Information

General Information

San Diego State

San Diego State opened its doors for the first time in 1897 with a faculty of seven and with a total enrollment of 91 students. It was established initially as a two-year institution dedicated to the training of teachers. It was housed on the second floor of a downtown office building but soon moved to its own campus at Park Avenue at El Cajon Boulevard. It occupied these quarters until 1931 becoming meanwhile in 1931 a four-year teachers' college under the State Board of Education.

By 1931 it had grown beyond its facilities and moved to a new campus in what was then the far eastern outskirts of the city. What are now Arts and Sciences, the Women's Gymnasium, the Power Plant, and the central parts of the (old) library, Life Sciences, Speech, and Physical Sciences were the original buildings, erected in Spanish mission style with arches, an open-faced bell tower, covered walks, thick concrete walls, and red tile roofs. The motif of the architecture has been preserved in the new buildings so that the campus has unity.

In 1935, the college dropped "Teachers' " from its title and in 1960, it became part of the California State College System with a state-wide Board of Trustees and a chancellor.

In 1971 the California State Legislature authorized renaming of the system to California State University and Colleges. San Diego State takes pride in its new status as well as great pride in its varied offerings at both undergraduate and graduate levels, its accreditation, its fine library, and its distinguished faculty of more than 1500 members, 68 per cent of whom have doctorates.

In recent years many new buildings of modern design have been added. Especially well equipped and spacious are Business Administration and Mathematics, Chemistry-Geology, Dramatic Arts, Engineering, Fine Arts, Home Economics, Industrial Arts, Life Sciences, the Malcolm A. Love Library, Music, Physics, Social Sciences, and gymnasiums for men and women. In addition, dining facilities, the student store, the student recreation center, and a large outdoor auditorium in the form of a Greek amphitheatre are all noteworthy. Two heated pools are available for year-round swimming, when school is in session.

The present site consists of 300 acres on the south mesa above Mission Valley, eleven miles from the Pacific Ocean. On crisp days, the forested Laguna ridge to the east and the high ground of Point Loma to the west are visible.

The natural sciences are housed in a \$25 million complex of fully equipped laboratory buildings on the northeast rim of the campus plateau. Astronomy is served by observatories on campus and in the nearby 6,000-foot-high Laguna Mountains. The university operates a computer center, seismology and weather stations, and two wind tunnels. Two biology field stations (one of 2500 acres) are maintained in forest and chaparral country. Specially designed laboratories also serve students in foreign languages, international relations, and public administration, as well as in the natural sciences.

Malcolm A. Love Library

A large new central library building, named in honor of San Diego State's fourth president, was opened to the students and faculty scholars early 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.

Its structure, contemporary in design, has a direct and simple impact on the viewer, free as it is of clutter. Because of the view through the large tinted glass windows enclosing the library on all sides, one is conscious that he is at the focus of the campus. The unusual arched outdoor pillars are repeated indoors, giving one a sense of continuity with nature. 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 room, a specialized lower division library, a special collections room for rare books and archives, and areas for the sciences and engineering library, documents, educational resources, current periodicals, and microforms. It has a listening room for phonorecords.

Its collections are substantial. It has 770,000 volumes, including books, bound periodicals, and government documents. Additional resources include: 950,000 microfiches and microopague cards, 20,000 reels of microfilm, 30,000 college catalogs, 62,000 curriculum material items, 23,000 scientific reports, 275,000 archival papers, and many other media, etc.

The library receives 9,300 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 Organziation 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 thorughout the building.

Several research centers on campus have collections not included in the library's holdings. Among them are: Public Administration and

General Information

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 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's accreditation is validated through membership in the above associations. San Diego State 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 college 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 49 areas, and three Ph.D.'s. Some of its recent noteworthy innovative programs are in Afro-American studies, Asian studies, ecology, Jewish studies, Mexican-American studies, religious studies, and women's studies.

Degrees and Certificates

San Diego State offers the following degrees and certificate: Bachelor of Arts **Bachelor** of Science **Bachelor** of Education (or 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, Berkelev) 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 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.

General Information

Academic Year

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San Diego State operates on the semester plan. The academic year, which consists of two semesters of 18 weeks each, begins in September and ends in June. The academic year is defined in the State Administrative Code, Chapter 5, Section 42800, as follows: "The beginning date of the academic year of the college shall be Monday of the week preceding the week that class instruction is scheduled to begin in the regular fall session, and the ending date shall be the second calendar day following the last day that final examinations are regularly scheduled for the following spring semester." Dates for the current academic year are carried in the calendar in this catalog.

Imperial Valley Campus

Faculty

Professors: Rodney (Dean), Baldwin (Associate Dean)

Associate Professors: Smith, A.

Assistant Professors: Ayala, Burton, Duling, Franklin, Harmon, Hill, Ikeda, King, Person, Polich, K. (Librarian), Polich, J., Rice, Smith, D., Spencer, Story, Ugarte, Wilson

Lecturers: Atwood, Daniells, Hinshaw, Holland, Medina, Nagel

Location and Function

The Imperial Valley campus is a division of San Diego State. 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 refrigerated in the summer.

The program at this campus is an integral part of San Diego State 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 Standard Teaching Credentials with specializations in elementary, secondary, and special education. 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

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Imperial Valley Campus

Imperial Valley Campus

members of the San Diego State instructional staff. Serving at the Imperial Valley campus are full-time resident faculty members in the areas of anthropology, art, drama, economics, English, geography, history, mathematics, Mexican-American studies, political science, psychology, sociology, Spanish, elementary education, secondary education, and special education. More than sixty-five per cent of the full-time faculty possess the doctoral degree. Part-time faculty, selected from outstanding educators 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 plans.

Program

The program at the Imperial Valley campus is restricted to upper division and postgraduate courses applicable to a bachelor's degree and the Standard Teaching Credential. In general, the programs are similar to those described in this catalog for elementary and secondary teaching; however, not all majors and minors are available at Imperial Valley campus. Presently, the campus offers major programs in Spanish, English, social science, fine arts, history, and Latin American studies. Authorized programs to be added include mathematics, sociology, art, music, political science, and economics.

The Imperial Valley campus is designed 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) persons now teaching, but who want to complete requirements for a bachelor's degree and/or a teaching credential, (4) inservice teachers holding either a provisional credential or a partial fulfillment of requirements credential, and (5) college graduates who wish to complete the requirements for a regular teaching

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

A schedule of classes, with instuctions for registration, is published each semester and can be obtained on request from the Dean approximately six weeks before the dates of registration. All tests required for the programs offered at this campus are given there.

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

Registration and Commencement

Registration for all classes offered at Imperial Valley Campus is held at the beginning of each semester (Fall, Spring, and Summer) at the Calexico Campus. Students who are continuing, or have been admitted or readmitted by the college, will be mailed detailed instructions for registration. Any student who is not a continuing student (i.e., was not officially enrolled the previous semester, fall to spring or spring to fall, or is seeking admission after having attended another college) must file the appropriate application for admission forms with the Dean's office at Calexico. Students in previous attendance at the San Diego Campus should notify both the Dean's office and the Registrar's office of their intention to enroll for courses at Calexico.

Commencement exercises are held once a year in Calexico at the end of the spring semester. Those students who were graduated at midyear, plus those graduating at the end of the spring semester, and students who expect to complete requirements for graduation in the summer session are encouraged to attend.

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

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

The administration offices are located to the east of the central building. Classrooms are located in all buildings on the campus. All are large, comfortable, and equipped with refrigerated or heated air conditioning to fit the season. All resident faculty members maintain offices on campus.

Facilities are provided for student use in the student union consisting of a building entirely separated from the office and classroom areas. The building is furnished with television, sofas, lounge chairs, small tables, and easily movable chairs and can be used for conferences and meetings. Snack facilities are also available to students. The Associated Student Body Offices are located in the administration office building.

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

The Imperial Valley Campus library is housed in the south wing of a three building complex. It contains over 20,000 books, 2,500 pamphlets, and 200 periodicals. Stacks are separated from the study-reference area. Additional loan privileges are available to students and faculty through the library at the San Diego Campus and the Southeastern California area public and school district libraries. Books and reference materials are also available from the two Mexican collegiate institutions located in Mexicali, Baja California, Mexico,

Imperial Valley Campus

A basic collection of audio-visual equipment is available for classroom use. Films and other instruction materials are available to the staff and students through the Audio-Visual Departments of the San Diego Campus and of the Imperial County Education Center. Films are also rented from outside sources as needed.

Placement, Employment, and Information

The college provides a centralized placement service in cooperation with the School of Education. Students are aided in securing part-time and full-time positions and in obtaining information concerning occupational trends. Staff members maintain contact with schools for teacher placement. Present conditions result in more elementary teaching position vacancies than the campus has graduates.

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

Special Programs and Services

Summer Sessions and Extension Courses

San Diego State conducts an intersession and two summer sessions which offer credit applicable to graduation and residence requirements.

During the two-week Intersession, one or two semester units of credit may be earned; during the six-week Term I Summer Session, up to seven units of academic credit may be earned; during the three-week Term II Summer Session, three units may be earned. The tuition for the summer sessions is based upon 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 about the first of April and is mailed free of charge upon request.

In order more adequately to serve the educational needs of the community, San Diego State 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. 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 Courses. Refer to the index for page number. For information on organization of classses, current offerings, and eligibility for registration, communicate with the Extended Services Office.

Honors Program

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The Honors Program at San Diego State provides opportunities for superior students to use and develop their talents in a variety of ways, both all-college and departmental.

Those who have taken the Advanced Placement Examinations should refer to the section of the catalog so titled.

Prior to entrance, freshmen who have superior high school records may, on the basis of their college aptitude test scores, be invited to participate in a special advising program. Here attention is given to individual needs and interests. Students in this program are given Hon-

Special Programs and Services

ors at Entrance. Such students with permission of instructor, are eligible for the Honors colloquium (Humanities 66).

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. Currently honors sections are offered in English 5, 6; Mathematics 50, 51, 52; Physics 4A–4B–4C; Political Science 1, 2; and Psychology 1, 167A–167B. Chemistry 10A–10B is an honors course.

Upon completion of the sophomore year a student who has maintained a superior scholastic record may be eligible for admission to the upper division Honors Program of his major department. Specific requirements and details of these programs vary with the different departments. To apply, a student should consult his major adviser or the chairman of his major department.

The purpose of the San Diego State Honors program is, within practicable limits, to meet the individual needs of the most capable students. Credit by examination, release from regular attendance, modification of curriculum requirements in the major and minor, and individual study are other opportunities available with the consent of the major adviser or other authorities. See also the section of this catalog titled "Graduation with Honors."

International Programs

A study abroad program of global scope is offered by the California State University and Colleges International programs. Year-long study opportunities for students from all nineteen campuses are available at distinguished institutions of higher learning throughout the world.

Cooperating universities abroad include the University of Provence, France; the Free University of Berlin and the University of Heidelberg, Germany; the University of Florence, Italy; the University of Stockholm and the University of Upsala, Sweden; the University of Madrid and the University of Granada, Spain; Tel Aviv University and the Hebrew University of Jerusalem, Israel; Waseda University, Japan. In the United Kingdom, cooperating universities, which may vary from year to year, have included Dundee, Leicester, Liverpool, London, Oxford, Sheffield, Southampton and Wales. An area studies program, with instruction in English, is also available in Taiwan, Republic of China.

Selected students remain enrolled and continue to earn residence credit at their California State College campus. Full credit is earned for academic work successfully completed at the cooperating institutions abroad. Application of credit earned toward the degree requirements of the home campus is in accordance with college regulations. Students are selected from each campus on the basis of academic, linguistic and personal qualifications, as well as career objectives. Requirements inUpper division or graduate standing by the beginning of the academic year abroad.

Grades of B or better in at least 30 semester or 45 quarter units. Proficiency in the language of instruction, as specified below. Faculty recommendations.

Proficiency in the language of the host country is a requirement for the Programs in France, Germany, Italy (except for students applying for the area studies program), and Spain. Even where language proficiency is not required, however, competence in the language of the host country will assure broader curricular opportunities.

Average expenses for the entire year—including round-trip transportation between California and the study centers, room and board, health and accident insurance, home campus fees, moderate vacation traveling, textbooks, and personal expenses range from \$2,600 to \$3,050. Students ordinarily remain eligible for any financial aids for which they otherwise would qualify on their home campus.

Application for the 1973–74 academic year must be submitted before March 1, 1973 (except for the United Kingdom applicants who must submit applications by January 5, 1973). Applicants are notified of acceptance by April 1, 1973. Detailed information may be obtained from the Dean of the College of Arts and Letters, or by writing to the California State University and Colleges International Program, 5670 Wilshire Boulevard, Los Angeles, California 90036.

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 Asian-centered Studies; (3) developing and administering the Asian Studies program and relevant curricula at the undergraduate and graduate level; (4) responding to campus and community requests for information and services; (5) fostering campus and community interest in Asian Studies.

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

Special Programs and Services

coordinating agency for studies which concern the university as a whole. Fiscal matters are coordinated through the San Diego State 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 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 college 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 or-

Economic Education

Joseph McClintic, Director

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 pre-service instruction, and (4) service. The development of more effective strategies and the evaluation of teaching at all levels is involved.

Economics Research Center

John W. Hambleton, 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.

Educational Services and Research

David H. Ford, Coordinator

The Bureau of Education Services and Research operates within the School of Education. The objective of the bureau is to improve the quality of education through research by (1) assisting with research activities of individual faculty members who wish to make use of its services, (2) cooperating in community and service studies, (3) serving faculty graduate advisers as a resource in research design and statistical techniques, and (4) engaging in the dissemination of educational research information.

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 and the minor in Humanities for secondary teaching with concentration in European Studies. It sponsors the annual San Diego State 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.

Labor Economics

Adam Gifford, Coordinator

The Institute of Labor Economics is an activity of the Economics Department with its administration under a director. The Institute, located with the Economics Research Center in SS-338, provides materials and direction for research in labor problems, collective bargaining, labor legislation, and social security.

Special Programs and Services

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 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. 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 Foundation.

Paleobiology Council

Jason A. Lillegraven, Chairman

An interdisciplinary research and teaching agency to explore the fossil record.

Public and Urban Affairs

W. Richard Bigger, Director

The Institute of Public and Urban Affairs is an agency of San Diego State, 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. 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,

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 non-market 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.

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 and an assistant director, whose duties include consulting assistance in the designing and execution of studies and in the preparation of proposals to funding agencies.

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 government or nongovernment organizations, and to do field work on a local, state, or national basis.

Special Programs and Services

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 San Diego State. The Center is a cooperative venture by the San Diego State Foundation, Aztec Shops and the College. The present equipment includes a medium size electronic digital computer-an IBM 360 Model 40 with 196,608 bytes of core storage, disks, tapes, a card reader, a card reader-punch, and a printer. The supervisor is the Disk 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 to the main 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. Programming and data processing courses, and courses related to some specialized applications of computers are offered by several departments at San Diego State.

Research and Project Administration

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

Audio-Visual 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 important faculty-sponsored research reports, community studies, documents, and literary articles.

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 it is possible to live simply and participate moderately in campus life on a modest budget. The following table may serve as a guide.

Estimated Expenses for the Academic Year

Materials, service, student activity,	Living on Campus	Commuting	
student union fee, facilities fee	\$161	\$161	
Personal	180	180	
Boom board backt	450	400	
Board incidentals	1250	BARTING C	
Transportation parking		600	
parking	1987 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1	250	
Total	1999 - <u></u>		
n addition (\$2041	\$1591	

In addition, foreign students and out-of-state students pay an annual tuition of \$1110. Typical expenses for married students without children average \$4,075 for a nine-month period.

Financial Aid

San Diego State makes every effort to see that students who wish to attend are not prevented from doing so because of inadequate resources. Funds available to San Diego State, 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 lowincome families who would not, but for such a grant, be financially able to pursue a course of higher education. They are renewable as long as the need remains. Some grants are also available to full-time employees of certain law-enforcement agencies. Aliens, however, are eligible only for emergency loans.

Applying for Aid

All these financial aid programs, as well as others not described here, are administered by the Financial Aid Office, Administration Building Room 222. 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 "Financial Aid Application for the Academic Year 1972-73" is contained as Part D in the Admission Application booklet. However, additional information is required for evaluation and determination of financial need. Forms and instructions will be furnished to those students for whom space at San Diego State has been reserved and must be returned to the Financial Aid Office by April 14, 1972.

A complete Financial Aid application includes a Parent's Confidential Statement (PCS) or a Student's Financial Statement (SFS). The PCS form may be obtained from your school counselor. It should be filed as soon as possible, in accordance with instructions therein. The SFS form is for the use of independent and married students and may be obtained from the Financial Aid Office. Additional information may be required after initial evaluation by the Financial Aid Office of vour aid application and the PCS or SFS.

Alan Pattee Scholarship

Surviving children, natural or adopted, of California peace officers or firemen killed in the line of duty are not charged fees or tuition of any kind while enrolled at any California State University or College, according to the Alan Pattee Scholarship Act and the Education Code, Section 23762. Students qualifying for these benefits are known as Alan Pattee scholars.

Scholarships

The San Diego State Scholarship Committee will administer approximately 200 scholarships for the 1972-73 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. Application forms for applying for the 1972-73 program became available in the SDSC Scholarship Office on January 3, 1972. The deadline for applying will be February 29, 1972. Selections are based on recommendations received from the various

Financial Aid

Financial Aid

Department Chairmen and financial need. Information is available from the Scholarship Office, Room 221, Administration Building. A similar program is anticipated for the 1973-74 academic year.

During the 1971-72 academic year about 490 students received scholarship, 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 Department of their major to determine what scholarship, fellowship, grant or stipend support might be available to them.

For the 1971-72 academic year about 280 students received scholarships from donors who made their own selections and asked the college to administer the funds. These scholarships are generally from clubs and organizations helping students studying in areas of interest to that club or organization. Students should ask if a club or organization of which they or members of their family are members sponsor scholar-

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

American Business Women's Associa- Executive Secretaries, Inc. tion American Society of Military Comp- Fleet Foundation American Yugoslav Women's Club Amsden Memorial Bank Administration Institute Baranofsky, Dorothy Memorial Biehl, Martha S. Memorial Brown, Dr. Leslie P. Burgener, Clair W. California Assoc. for Childhood Education California Congress for Parents and Teachers California Society CPA's-Women's Auxilary Cap and Gown Copley Press Country Friends Del Cerro Women's Club Delta Kappa Gamma Dorado Foundation Downtown Optimist Club Driver, Robert F. Co. East San Diego Lioness Club Ellis, George William Memorial

Faculty Wives Fontaine, Amelie Memorial Fletcher Foundation **General Dynamics** Hess, Robert C. Memorial International Brotherhood of Electrical Workers, Women's Auxiliary Jones, Sybil Eliza Junior Charity League **KFMB** Kaufman and Broad KOGO-TV La Mesa Dialogue for Action Linkletter, Art Lodge, Catherine Yuhan Morrison, Alvin Memorial Mortar Board Alumnae of San Diego National Council of Jewish Women Pacific Beach Jr. Women's Club Pfaff, Paul Memorial Phi Epsilon Phi Pi Lambda Theta Post, Dr. Lauren, C. Public Relations Club of San Diego

San Diego-Imperial County Labor Council San Diego State College Alumni San Diego Women's Club-Home and Garden Section Senn, Percie Belle Shields, Robert Patterson Foundation Sigma Alpha-Gamma Upsilon Chapter Sigma Alpha Iota Alumnae Silvergate Lions Club Solar Southern California First National Bank Stott, Dorothy C. and Kenneth W. Thompson, Terry Lynn Memorial Trott, Wilmia Tyler **Tripp** Memorial and towings fees Reported Support Wells, Arthur C.-Sigma Nu and a line away which a state Whitney, Guilford H., Foundation Williams, DeWitt Bisbee

Student Services

Staff

Activities: Judy Haller, Stephen Ironhill, Bruce Meador, Dorothy Simpson, Gary Solbue

Career planning and placement, and financial aid: Raymond Cota, Judy Gottlieb Gumbiner, Richard B. Haines, E. Biddle Heg, J. Franklin Jonasson, James Kelly, Nancy Leonard, James R. Murphy, Susan E. Ramsey, Nancee B. Williamson

Counseling and testing: Jesse Brannon, Samuel Gange, Jack Graham, David Hostetler, Mike Irwin, Bill Latta, Henry E. McAdams, Richard Morril, David Nesvig, Donald Neuman, Gwen Onstad, Judy Osgood, Earl Peisner, Herman Roemmich, Steven Sherr, Marguerite Strand

Health service: Mary Bradford, M.D., Leland Colm, M.D., James Crawford, M.D., James Firoved, M.D., Robert Vinton, M.D., Betty Zak, M.D.; Gertrude Anderson, R.N., Elizabeth Bandt, R.N., Verna Brooks, R.N., Betty Chohan, R.N., Ethel Erickson, R.N., Virginia LeBlanc, R.N., Juanita Carroll, R.N., Dorothy O'Carroll, R.N., Joan Simcox, R.N., Arlene Thompson, R.N., Frances Woodiwiss, R.N.

Counseling and Testing

These services are performed in the Student Counseling Office and in the Test Office. The university makes them available to help students gain the greatest benefit from their college experience. Mature and well trained counselors are available for help in the solution of problems of a personal, social, or occupational nature. In addition, the program of student advising is coordinated in the Counseling Office. Students wishing to set up a special major or who have questions about the undeclared or special major can receive guidance in the Counseling

Health Services

As a part of the program of student personnel services the college 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

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when school is in regular session.

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 student 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, Paragraph 41200.

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 provides a centralized placement service in cooperation with the various departments of the institution. Undergraduate students are aided in securing part-time and full-time positions and in obtaining information concerning occupational trends. Liaison is maintained with the Personnel Services Center on matters relating to senior vocational counseling. Staff members maintain constant liaison with schools, businesses, and industries. Early in his college career, the student should seek out a counselor appropriate to his academic and vocational goals.

These counselors, as well as special counselors to serve Chicano and Black students, are available at the Center. Credit courses related to career planning are offered. The Career Planning and Placement Center is located in the College Annex 5870 Hardy Avenue.

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 per week for each unit of college work attempted. A normal 16-unit load therefore represents a 48-hour week. Students are strongly advised to take this into consideration before accepting any part-time job.

When registering for his last semester, the student should fill out a Career File and an Early Match System data card. With the information he thus provides, the Center staff can better assist him in seeking out rewarding and challenging full-time employment.

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

Standard English, free from flagrant errors in grammar and spelling, is required on written assignments throughout the college; moreover, passing of the Writing Competency Test or satisfactory completion of designated courses or remedial programs is a requirement for graduation.

To help students attain a reasonable degree of proficiency, the English Department offers several courses in composition, beginning with the freshman year. In addition, the Study Skills-Center, offers a semitutorial service to those wishing to improve writing or reading ability or to get help with study problems or writing projects, either remedial or advanced. The service is open to all students at any level of college work. If interested, 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 with its administration under a director. The center is located on the lower floor of the Education Building, adjacent to Health Services. The principal objectives of the center are: 1) to provide complete diagnostic information regarding the hearing loss for faculty, students, and staff free of charge; 2) to provide the same service to the community for a minimal fee administered through the College Foundation; 3) to provide hearing assessment of all freshmen and transfer students as part of their health examination; and, 4) to foster research in the area of hearing function and pathology. This center operates throughout the school year and in Summer Session I.

Speech and Hearing Clinic

A speech and hearing clinic in which college students are trained in the application of speech, hearing and language pathology techniques, speech, lipreadiing and auditory training and language development for the hard of hearing and deaf, is held throughout the academic school year and in Summer Session I. The clinic admits those with speech and hearing problems, ages three to adult. Because of limitations in 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

Clinical Training Center

The Clinical Training Center prepares college students 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 with parents of the children with whom they work is a regular function of the training program.

While the primary purpose of the Center is to train teachers and clinicians, a community service is offered to those who have problems with school achievement, speech, hearing, educational and vocational planning, and school adjustment. Referrals are ordinarily made by schools, other agencies, or individuals. Parents, for example, may make a referral either directly to the Center or through their child's school. In general, preference would be given to the child who might profit best by specialized help and who meets the needs of training college students. There are specific criteria of selection of children for each strand of the total program.

Student Activities

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A rich field of extracurricular activities is available to San Diego State students. The Student Handbook, available at the time of registration, gives information concerning the nature and scope of these opportunities. The Dean of Activities, Mrs. Margery Warmer, 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 organizations, religious organizations, national social fraternities and national social sororities.

There are 11 national sororities at San Diego State which provide housing accommodations for approximately 300 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 College, San Diego, California 92115.

The 14 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 college activities office.

Aztec Center

San Diego State was the first of the California State University and Colleges to build and operate a permanent college 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 non-profit, self-sustaining, self-liquidating, non-tax supported, student-financed operation.

Use of the center is the privilege of San Diego State 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, a U.S. Post Office branch, 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.

Alumni Association

The purpose of the association is to promote interest in the university on the part of alumni, students, faculty, and the general community. Cooperating with student and faculty committees, it participates in Founders' Day, Commencement, and other campus events. It publishes a monthly Alumni News and twice a year the 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 a 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 halls (two 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 co-ed, accommodates 623 students with 221 spaces for men. Adequate provision for study hours will be made, as well as an opportunity for participation in campus activities. Student government in each residence, working through the Associated Students of San Diego State, sets standards for basic behavior in these residence halls. Each of the smaller residence halls is staffed by one Head Resident and five Assistants, with two Head Residents and appropriate staff in the larger hall.

Currently, the cost for room, health and accident insurance, and linens is approximately \$275 to \$370 per semester. Food service (19 meals per week) is available in The Commons on an optional basis.

IT IS THE RESPONSIBILITY OF EACH STUDENT AND/OR PAR-ENT TO CONTACT THE HOUSING OFFICE IF ONE WISHES TO **OBTAIN ON-CAMPUS HOUSING. THE EARLY APPLICATIONS** ARE GIVEN PRIORITY IN DATE ORDER AS THE DEMAND EX-CEEDS 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 \$106 deposit, mailed to the Cashier's Office in the Campus Laboratory School. Your request for a space can not be firmed by the College until early summer. 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, he can not be guaranteed a specific room.

No application can be honored if the student is not accepted for admission into San Diego State by August 18 (January 24, 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-ofcheck 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 SDS students. Room and board are available for over 500 students. For information apply directly to El Conquistador, 5505 Montezuma Road, San Diego.

Information on other off-campus housing may be obtained from the Director of Housing, 5860 Hardy Avenue.

Transportation and Parking

Bus line transportation to the college, 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 El Cajon Boulevard with Route E, at University Avenue with Route 7, and at Streamview Drive with Route 5.

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 capable young people from minority or low income groups who wish to acquire a college education but are handicapped by financial or academic factors. In cooperation with various EOP offices, high schools, and community organizations, the program recruits students, helps them enroll, and advises them concerning scholastic and financial assistance. Financial aid is disbursed through the Financial Aid office according to established individual need.

Through the EOP Supportive Services, counselors are made available for help with personal problems so that each student may have the opportunity to reach his fullest potential.

Veterans

The university maintains an office to serve veterans who are pursuing their higher education at San Diego State. The office staff provide information, help in the establishment of benefits, and seek to facilitate registration. The service is under the administration of the Dean of Admissions and Records. Aurusion to the Sollege R La

Regulations

Admission and Registration General Regulations Graduation Requirements

Admission to the College

Requirements for admission to the California State University and Colleges are in accordance with *Title 5*, Chapter 5, Subchapter 2 of the *California Administrative Code*, as amended by the Board of Trustees of the California State University and Colleges on November 24, 1970. A prospective applicant who is unsure of his status under the requirements is encouraged to consult his school or college counselor or the College Admissions Officer.

Application Procedure for 1973–74

All prospective students must file a completed application for admission within the appropriate filing period. A completed undergraduate application includes Part A, the application form; Part B, the data form; and the non-refundable application fee of \$20.00. A graduate application includes Part A; Part B; Part C, the supplemental graduate admission application; and the non-refundable application fee of \$20.00. Graduate applicants who were enrolled as undergraduate students at the college in the term immediately preceding the term for which they now wish to apply must also complete all the required forms and submit the \$20.00 application fee. Each applicant may file only one application for any one term within the California State University and College system. The application should be filed with the college of first choice. Alternate campuses may be listed on the application.

Application Filing Periods for 1973-74

<i>Term</i>	Initial Filing Period	Extended Filing Period
Spring 73	Aug. 1–31, 1972	Begins (continues until
Summer 73	Jan. 2–31, 1973	quotas are reached)
Fall Q 73	Nov. 1–30, 1972	Sept. 1, 1972
Fall S 73	Nov.1–30, 1972	Feb. 2, 1973
Winter Q 74	June 1–30, 1973	Dec. 1, 1972
Spring S 74	Aug. 1–31, 1973	July 1, 1973
Spring Q 74	Aug. 1–31, 1973	Sept. 1, 1973
		Sept. 1, 1973

Semester CalendarChicoFresnoFullertonLong BeachSacramentoStanislaus

Quarter CalendarSan DiegoBakersfieldSan FernandoDominguez HillsSan FranciscoHaywardSan JoseHumboldtSonomaLos Angeles

endar Cal Poly, Hills Kellogg-Voorhis San Bernardino Cal Poly, San

Luis Obispo

Admission and Registration

Initial Filing Period

All applications received during the intial filing period will receive equal consideration within established enrollment categories and quotas, irrespective of the time and date they are received.

Space Reservations

Applicants who can be accommodated within category quotas will receive confirmation of space reservation. Although the space reservation is not a statement of admission, it is a commitment on the part of the college to admit a student once eligibility has been determined. When the student receives notice of the space reservation, he should initiate action to have transcripts of all college and high school work sent to the college where space has been reserved. The college will inform him of the number of copies of transcripts required, dates for submittal, and where they should be sent. THE STUDENT SHOULD NOT REQUEST THAT TRANSCRIPTS BE SENT UNTIL REQUEST-ED TO DO SO BY THE COLLEGE WHERE SPACE HAS BEEN RESERVED.

Redirection

Applications of students who cannot be accommodated at their first choice college will automatically be redirected to their second choice, and, if they cannot be accommodated there, to their third choice, etc.

Hardship Petitions

Each college has established procedures to consider qualified applicants who would be faced with an extreme hardship if not admitted. Prospective hardship petitioners should contact the college regarding specific policies governing hardship admission.

Extended Filing Period

Colleges not filing category quotas during the initial filing period will continue to accept applications during the extended filing period until quotas are filled. Application priority within the extended period will be granted in chronological order of application receipt by the colleges.

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 by the institution attended. All records or transcripts received by the college become the property of the college 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 60 units. Applicants should consult the high school counselor for dates and places where tests are given.

Transfer students with more than 60 units who have not taken either the ACT or the SAT are required to take a college aptitude test administered at this college. A test reservation card is filed with the application for admission. Refer to the calendar in the Class Schedule for dates of the test.

Writing Competency Test. This test may be taken before registration by all undergraduate students transferring to this college 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.
 Test of English as a Fourier for all students.

3) Test of English as a Foreign Language. Applicants whose native language is not English must attain satisfactory scores on the Test of English as a Foreign Language (TOEFL). For further information see the section of this catalog on Admission of Foreign Students.

Teacher Education Tests

These tests are required of all candidates for teaching credentials. Refer to Admission to Teacher Education in the section of this catalog on the School of Education.

- (1) Fundamentals Test. This test is required of all candidates for the general elementary and kindergarten-primary credentials before admission to teacher education. May be taken before registration by students transferring to this college with 15 units or more of advanced standing. May also be taken during the regular semester. Make a reservation for this test at the Test Office during the two weeks prior to the test date.
- (2) Comprehensive College Test. This test is required of all candidates for any of the secondary school credentials before admission to teacher education. May be taken before registration by students transferring to this college with 60 units or more of advanced standing. May also be taken during the regular semester. Make a reservation for this test at the Test Office one month prior to test date. Fee required.

Qualification Tests

Mathematics Placement Examination. Required of students before enrollment in any of the following courses: Mathematics 3, 4, 12, 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, Administration Building. Refer to the Graduate Bulletin for full information and test dates.

Undergraduate Admissions Requirements

First-time Freshmen

Applicants who have completed no college work after high school graduation will be considered for admission as first-time freshmen under one of the following provisions. Results of either the CEEB Scholastic Aptitude Test (SAT) or the American College Testing program examination (ACT) are acceptable in establishing eligibility.

Exceptions: College credit earned concurrent with high school enrollment; college credit earned in summer session after high school and prior to regular matriculation in college; college credit granted for the CLEP or ADVANCED PLACEMENT programs, or military or USAFI courses; or college credit granted for some non-traditional

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Admission and Registration

learning experience will *not* affect the applicant's status as a first-time freshman for application quota purposes as well as admission. Further, the accelerated student, who completes his high school program mid-year, who has applied to the California State University and Colleges for the following Fall term, but chooses to attend a local community college in the spring term will be considered a first-time freshman for application quota purposes as well as admission. All such college or advanced standing credit, if fully acceptable as transfer credit, will be granted the student after admission.

California High School Graduates and Legal Residents for Tuition Purposes must have a grade point average and total score on the SAT, or composite score on the ACT, which together provide an eligibility index placing them in the upper one-third of California high school graduates. The grade point average is based upon all high school course work completed in grades 10–12, excluding physical education and military science courses.

High school gradutates from other states or possessions who are nonresidents for tuition purposes must present an eligibility index which places them in the upper one-sixth of California high school graduates. The following table gives grade point averages and test scores which together combine to establish eligibility.

Registration forms for either test may be obtained from high school and community college counselors, State College testing offices or directly from the testing service at the address below:

 SAT

 CEEB

 Box 1025

 Berkeley, Calif. 94770

 Dates Test Given:

 Oct. 14, 1972 (SAT only Calif-Tex)

 Nov. 4, 1972 (SAT only)

 Dec. 2, 1972 SAT & ACT.)

 Jan. 13, 1973 (SAT & ACT.)

 Mar. 3, 1973 (SAT & ACT.)

 Apr. 7, 1973 (SAT only)

 May 5, 1973 (ACT only)

 July 14, 1973 (SAT & ACT.)

ACT Registration Unit P.O. Box 168 Iowa City, Iowa 52240 Dates Test Given: Oct. 21, 1972 Dec. 9, 1972 Feb. 24, 1973 Apr. 28, 1973 July 21, 1973

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 State College. Grade point averages are based on work completed in the last three years of high school, exclusive of physical admission 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	1096	2.22	30	1296
3.20	11	512	2.95	16	712	2.70	21	912	2.46	25	1104	2.21	30	1304
3.19	11	520	2.94	16	720	2.69	21	920	2.45	26	1112	2.20	31	1312
3.18	11	528	2.93	16	728	2.68	21	928	2.44	26	1120	2.19	31	1320
3.17	11	536	2.92	16	736	2.67	21	936	2.43	26	1128	2.18	31	1328
3.16	11	544	2.91	16	744	2.66	21	944	2.42	26	1136	2.17	31	1336
3.15	12	552	2.90	17	752	2.65	22	952	2.41	26	1144	2.16	31	1344
3.14	12	560	2.89	17	760	2.64	22	960	2.40	27	1152	2 15	32	1359
3.13	12	568	2.88	17	768	2.63	22	968	2.39	27	1160	2.14	32	1360
3.12	12	576	2.87	17	776	2.62	22	976	2.38	27	1168	2.13	32	1368
3.11	12	584	2.86	17	784	2.61	22	984	2.37	27	1176	2.12	32	1376
3.10	13	592	2.85	18	792	2.60	23	992	2.36	27	1184	2 11	32	1384
3.09	13	600	2.84	18	800	2.59	23	1000	2.35	28	1192	2.10	33	1309
3.08	13	608	2.83	18	808	2.58	23	1008	2.34	28	1200	2 00	33	1400
3.07	13	616	2.82	18	816	2.57	23	1016	2.33	28	1208	2.08	33	1408
3.06	13	624	2.81	18	824	2.56	23	1024	2.32	28	1216	2 07	33	1416
3.05	14	632	2.80	19	832	2.55	24	1032	2.31	28	1224	2.06	33	1494
3.04	14	640	2.79	19	840	2.54	24	1040	2.30	29	1232	2 05	34	1439
3.03	14	648	2.78	19	848	2.53	24	1048	2.29	20	1240	2 04	34	1440
3.02	14	656	2.77	19	856	2.52	24	1056	2 28	29	1248	2 03	34	1449
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	1479
2.98	15	688	2.73	20	888	2.48	25	1088	2 24	30	1280	(-)2	00	1314
2.97	15	696	2.72	20	896	7			2 23	30	1288	(-)-		915

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

170-83245

Graduates of High Schools in a Foreign Country. Applicants who are graduates of foreign high schools must have preparation equivalent to that required of eligible California high school graduates. The college will carefully review the previous record of all such applicants and only those with promise of academic success equivalent to that of eligible California high school graduates will be admitted. Such applicants are not required to take either the (SAT) (ACT) (either) when specifically requested to do so.

Non-High School Graduates. Applicants who are over 18 years of age, but have not graduated from high school will be considered for ad mission only when his preparation in all other ways is such that the college believes his promise of academic success is equivalent to that of eligible California high school graduates.

High School Students. Students still enrolled in high school will be considered for enrollment in certain special programs if he is recommended by his principal and his preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given program and does nor constitute the right to continued enrollment.

Recommended Preparation. Overall excellence of performance in high school subjects and evidence of academic potential provide the basis for admission at San Diego State. While no specific course pattern is required, to prepare himself properly for a full program of university studies, the applicant is urged to include the following subjects in his high school career: college preparatory English (four years), foreign language (three or four years in the same language), college preparatory mathematics (alegbra and geometry for all, two additional years for prospective science majors), college preparatory science with laboratory (one year of a life science, one year of chemistry, and a year of physics), a year of United States history, a year of senior civics, and a third year in the general area of social studies. In addition, the student should take classes in speech, music, art, and other subjects contributing to a general academic background. Prospective science majors should acquire skill in the use of the slide rule and in mechanical drawing. All students would find the ability to type useful in college.

Admission as Undergraduate Transfers

Applicants for admission to the State University and Colleges as undergraduate transfers will be considered for admission under one of the provisions specified below.

Applicants who have successfully completed 60 or more transferable * semester units, or the equivalent, are eligible for admission if they have achieved a grade point average of 2.0 (C) and were in good standing at the last college attended. Nonresident applicants must have earned a grade point average of at least 2.4 (C+).

Applicants who have successfully completed fewer than 60 transferable * semester units, or the equivalent, are eligibile for admission if they meet the above requirements and the current first-time freshman requirements. Applicants for admission as transfer students who have been continuously enrolled at a college since graduation from high school are eligible if they meet the first-time freshman requirements in effect at the time of their high school graduation. Either SAT or ACT test results are required of transfer applicants with fewer than 60 transferable semester units.

* Applicable to students entering on or after Sept. 1, 1974. Until that time the former requirement of "... 60 or more semester units..." remains in effect.

Other Applicants

An applicant 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 in the college. Permission is granted only by special action.

San Diego State 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.

Graduate Admissions

All students holding a baccalaureate degree who desire to enroll at San Diego State for post graduate study must apply for admission to San Diego State 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 with a 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 college authorities; and *must satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations, as the appropriate college authorities may prescribe.*

Classified Graduate Standing

A student who has been admitted to a State University or College campus 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 examination, as the appropriate college authorities may prescribe.

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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 college catalogs and international (foreign) student informational brochures available from the colleges.

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. 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.

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 college before admission to the college 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, 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, undergraduates 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. 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. Scholarship aid for entering students is limited; no scholarships are specifically reserved for students from another country. Further information regarding scholarships will be found elsewhere in this catalog.

Upon arrival at San Diego State the student should obtain an appointment as early as possible with the Coordinator of Foreign Student

Limitation of Enrollment

Admission to a state 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 author-

After a student has been admitted to the College, his first basic step is to register for classes. Registration at San Diego State 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 College bookstore, just before registration. They contain general information on registration, a listing of the times students are permitted to register, and the courses offered by the College for the term.

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.

The Class schedule also contains a listing of the fees required for registration. Fees frequently vary from semester to semester. They are payable at the time of registration and depend on the number of units selected. For further information on registration, contact the Registrar's Office.

Determination Of Residence

The following statement of the rules regarding residency determination is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The statutes governing residence determination for tuition purposes are found in Education Code Sections 23753.2-23762, Government Code Sections 243-244, and Civil Code Section 25. The determination of whether a student qualifies as a "resident" for admission and tuition purposes is made by the College after review of a "Residence Questionnaire" completed by each student upon entering the College. The residence questionnaire is designed to provide to the College information necessary for residency determination, including the applicability of any exceptions.

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 admission and tuition purposes. A residence determination date is set for each academic term and is the date from which residence is determined for that term.

Whether a student has acquired California residence usually depends on whether the student has attained majority; i.e., has become an adult. Majority is attained at 18 years of age. If the student is a minor, residence is derived from (and therefore is the same as) that of his or her father. If the father is not living, the student's residence is that of the mother while she remains unmarried. A minor cannot change his resi-

made by the Legislature between the time this catalog is published and

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

the relevant residence determination date.

Advising

once during each semester.

Admission and Registration

dence by either his own act or that of his guardian.

Upon attaining majority, the student may acquire a residence apart from his or her parents. The acquisition of California residence by an adult requires both physical presence in the state and, at the same time, an intent to remain in California indefinitely, that is, an intent to regard California as one's permanent home. Although physical presence is easily proven, subjective intent is more difficult, requiring the student to present evidence of various objective manifestations of such intent.*

The residence of a married woman is that of her husband unless she is separated, in which case she can establish her own residence. An alien is not eligible to acquire residence until admitted into the United States for permanent residence under an immigrant visa.

Since the general rules of residence determination, summarized above, work hardships in some cases, the Legislature has provided a number of exceptions which, in effect, waive non-resident tuition. These rules are limited in scope and are quite detailed. If it appears that any of them may be applicable, the student may wish to discuss the matter with the residence clerk of the College. Exceptions are provided

- 1. Minors living under the direct care and control of a California resident for periods of time which are specified in the law.
- 2. Minors whose parents were California residents but who have left the state. (Depending on the length of the parents' residence in California, the minor is given a "grace period" during which he is considered a California resident even though his or her parents have become residents of another state.)
- 3. Minors who have a parent in active military service and stationed in California on the residence determination date; California resident minors who have a parent in active military service but stationed outside the United States on the residence determination date, and California resident spouses of such servicemen.
- 4. Persons who have attained their majority by the residence determination date, and who were entirely self-supporting and present in California for the entire preceding year.
- 5. Women who are California residents and who marry nonresidents
- provided residence is not established in any other state. 6. 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. 7. Full-time State College employees and their children and spouses.

- 8. Certain credentialed, full-time employees of school districts.

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 • The foregoing rules will have a special application during the 1972-73 academic year with respect to persons who attain their majority as a result of the recent legislative change reducing the age of majority from 21 to 18.

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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 college regulations will not exempt a student from whatever penalties he may incur.

Grades

At the end of each semester or summer session in which a student is enrolled, a report of courses taken, showing units and grades earned, is sent to the student. Grades and grade points 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; Inc (incomplete), counted as units attempted, 0 points; W (withdrawal), not counted in grade point average; WF (withdrawal failing), counted as failing in the grade point average; Cr (credit), signifying units earned, but not counted in the grade point average.

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 grade is counted as units attempted with no grade points and remains on the student's record unless made up. An incomplete has the same effect as an F in calculating grade point averages for whatever purpose grade point average is used, including probation and disqualification. Except for Course 299, Thesis, one calendar year beyond the end of the term when an incomplete is assigned will be allowed for makeup of the incomplete. The student must arrange with the instructor who gave the incomplete for removal of the course deficiences, upon completion of which a final grade will be assigned. An incomplete cannot be removed by repeating the course.

If a student does not make up the incomplete, but instead re-enrolls in the course for credit, he has repeated the course for which he will receive the credit and grade points earned, subject to the regulations for repeating courses. The incomplete will remain on the student's permanent record as units attempted with no grade points earned and cannot thereafter be made up through removal of course deficiences.

A candidate for graduation with the baccalaureate degree whose record carries an incomplete which was received within the last calendar year will be graduated without the opportunity of making up the incomplete if 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 incomplete on his record, he must officially cancel his application for graduation.

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 be required to re-register for the course if he wishes to complete the thesis at a later date. (The grade "Incomplete" will not be assigned to the course if not completed within the semester or term in which the student is registered for the course; the units will not be counted as units attempted; nor will credit be granted for the course under these conditions.)

The student must register in Course 299, Thesis, in any semester or term in which he expects to use the facilities and resources of the college, and must be currently registered in the course when the completed thesis is approved in the Graduate Office. Credit will be assigned to the course at the end of the semester or term in which the thesis is completed.

The second (or subsequent) registration in Course 299, Thesis, is subject to the time limits and procedures followed in the case of the first registration. In re-registering for the course, the student must comply with the deadline dates for registration as published in the Academic Calendar.

Courses

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 professional education courses in the postgraduate program. Courses numbered X-900-X-999 are those offered exclusively in the extension program to meet the professional needs of specific community groups.

Auditina

A student who does not wish to take a course for credit may, with the consent of the instructor, enroll as an auditor. 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, nor 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 may repeat a course in which he has received a grade of D or F, but may not receive credit for the course more than once. A repeated course is counted as units attempted and is credited with the grade points earned, the effect being an averaging of the grades. If a student repeats a course in which he has received a grade higher than D, the repeated course will not be counted as units attempted nor will grade points be counted in the student's record.

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 in-

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

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 educa-

General Regulations

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 and approved before the end 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 3 units in 200-numbered courses will be accepted towards 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, not more than 12 of which may be transferred from another college or university, except that courses taken through the United States Armed Forces Institute, or other official military correspondence schools, shall not be included within these limits. 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 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

General Regulations

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 towards graduation requirements at San Diego State unless otherwise specified in the course description.

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 can not exceed the limit authorized by the Education Code.

(2) Concurrent approval of the chairman of the department concerned and the Dean of Undergraduate Studies is required prior to taking the examination. Forms for approval may be obtained from the Registrar.

(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

San Diego State grants credit toward its undergraduate degrees for successful completion of examination of the Advance 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.

San Diego State will grant advanced placement and advanced credit to high school students who attain scores of 3, 4, or 5 on the Advanced Placement Examinations of the College Entrance Examination Board prior to their enrollment at San Diego State.

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. To obtain credit and advanced placement, the student should contact the Office of the Dean of Undergraduate Studies.

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.

Examination	Score	Credit allowed toward degree	SDS course equivalen	ces*	Remarks		
American History	3, 4, 5	6 semester hours	History 17A-17B	(6) St	atisfies American His- ory/institutions and		
European History_	3, 4, 5	6 semester hours	History 4A-4B	(6)	icals requirement		
English	3, 4, 5	6 semester hours	English 5-6	(6)			
French	3	6 semester hours	French 3 and 10	(6)			
	4, 5	6 semester hours	French 4 and 11	(6)			
Latin: Vergil	3, 4, 5	3 semester hours	Latin 3	(3)) If	more than one ex-		
Prose	3, 4, 5	3 semester hours	Latin 3	(3) ar	mination is satisfac		
Lyric	3, 4, 5	3 semester hours	Latin 3	(3) to tic	orily passed, 3 addi- onal units credit would		
German	3	6 semester hours	German 3 and 10	(6)	provided		
	4.5	6 semester hours	German 4 and 11	(6)			
Spanish	3	6 semester hours	Spanish 3 and 10	(6)			
	4.5	6 semester hours	Spanish 4 and 11	(6)			
Biology	3, 4, 5	6 semester hours	Biology 1 and 2 (4) +	Biolog	v 166 (2)		
Chemistry Mathematics	3, 4, 5	10 semester hours	Chemistry 1A and 1B	(10)	J 100 (2)		
Calculus AB	3, 4, 5	6 semester hours	Mathematics 50 (5) +	Mathe	matics 166 (1)		
Calculus BC Physics	3, 4, 5	9 semester hours	Mathematics 50 (5) +	Mathe	ematics 51 (4)		
B	3, 4, 5	8 semester hours	Physics 2A-2B (6) 3-3	(2)			
C	3, 4, 5	8 semester hours	Physics 4A-4B	(8)			
Art History	3, 4, 5	6 semester hours	Art 50A-50B	(4)			
Studio Art	3, 4, 5	6 semester hours	Art 1A-1B or Art 2A-2B	(6)			
Music	3, 4, 5	6 semester hours	Music 2, 51	(6)			

* Credit may not be earned at San Diego State for courses which duplicate credit already allowed for examinations as listed under San Diego State Course equivalences.

Credit for College Level Examination Program (CLEP)

San Diego State will consider the granting of credit to those students who have attained a score at or above the 25th percentile on each test of the General Examinations of the College Level Examination Program. Scores should be forwarded to the Admissions Office for evaluation.

General Regulations

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 college. 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

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

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

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. One week should be allowed for the processing and mailing of the transcript. Transcripts sent from one college to another are considered as official. Transcripts presented by a student to a college are considered to be unofficial and are usually not accepted. Transcripts from other schools or colleges become the property of this college and will not be released nor will copies be made.

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 60 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 of the Board of Admissions and Evaluations.

A student who has earned 60 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 college, except as otherwise provided in the California Administrative Code, Chapter 5, Section 40401, Election of Regulations. (Further information is given in the section 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 re-evaluation.

Change of Program

San Diego State 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, or changing a section of the same class. Forms for change of program are provided by the Registrar's Office. Change of program deadlines are in the Class Schedule each term; they may also be obtained from the Registrar's Office.

Change of Major or Curriculum

At the time of admission to the college, 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.

General Regulations

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

Withdrawal, Leave of Absence, and Readmission

The student is held for every course appearing on his official study list. Any withdrawal from the university or from a class must be officially filed at the Registrar's Office; otherwise the student will receive a grade of "F" in the course. Application for withdrawal is made at the Registrar's Office.

A student withdrawing from school after registration, but prior to the end of the refund period will lose his priority number and must apply for admission as a returning student.

Withdrawal Deadline Dates and Penalties. If a student withdraws officially from a class before the end of the third week of classes, the course will not be recorded on the permanent record. If he withdraws after the third week and not later than the end of the ninth week of classes, either a W (withdrawal passing) or WF (withdrawal failing) will be recorded, depending upon whether he is passing or failing the course on the date of filing the request for withdrawal. (WF is equivalent to a failing grade.) After the ninth week of classes, withdrawal from a class is not permitted. A final grade will be recorded for each class for which the studet is enrolled. Withdrawal from the university will be permitted up to 10 days preceding the final examination schedule; however, the student will receive a W or WF grade in each class, depending upon whether he is passing or failing in the class on the date of filing his request for withdrawal.

Unofficial Withdrawal. A student withdrawing unofficially from class or from college 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 deadlines established for withdrawing.

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.

Withdrawal to Enter Military Service. Under certain conditions, a student withdrawing from college 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 college.)

Entrance upon extended active military duty must be without unreasonable and unnecessary delay (normally within 30 days) after the date of withdrawal from college 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 college 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 college, 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 college 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.

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. Students are not penalized for taking leaves, and retain their priority numbers without change. No fees are involved.

At least three 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. 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, nor to students who are completing their final semester of undergraduate work. To be eligible for leave an undergraduate must be eligible to return as an undergraduate; a graduate must have been enrolled for at least one semester as a graduate student; students qualifying for change in status from undergraduate to graduate are not eligible.

Readmission. A student who withdraws from the college 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.

General Regulations

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 17½ 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

An undergraduate student whose scholarship record falls below a C average (2.0) for all college work attempted or all work atempted at San Diego State will be placed on probation. Probation may be continued provided that he obtains a C average or better each semester while on probation. Probation will be lifted when he has attained a C average or better on all college work attempted and on all work attempted at San Diego State.

If, however, his scholarship falls below a C average (2.0) in any single semester or summer session, he will be subject to disqualification and dismissal from the college. Application for reinstatement should be made at the office of Admissions and Records.

A veteran who is disqualified forfeits his rights to veterans' benefits. If this happens, he should consult the Veterans Administration regarding continuance of education.

Graduate Students

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

"Probation and disqualification of graduate students are subject to criteria established by each State College; 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 college without permission from the appropriate college 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 subsequent to his admission to the College 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 College 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 college under the foregoing regulations, may be readmitted to the College by the Board of Admissions. Application for readmission must be made on forms available at the Office of Admissions.

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General Regulations

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 state college of which he is a student, any student of a state college may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be state college related:

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

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

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

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

(e) Physical abuse on or off college property of the person or property of any member of the college community or of members of his family or the threat of such physical abuse.

(f) Theft of, or non-accidental damage to, state college property, or property in the possession of, or owned by, a member of the college community.

(g) Unauthorized entry into, unauthorized use of, or misuse of state college property.

(h) On state college property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.

(i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on state college property or at a state college function without prior authorization of the state college president.

(j) Engaging in lewd, indecent, or obscene behavior on state college property or at a state college function.

(k) Abusive behavior directed toward a member of the college community. (1) Violation of any order of the state college president, notice of which had been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the other provisions of this Section.

(m) Soliciting or assisting another to do any act which would subject a student to expulsion, suspension or probation pursuant to this Section.

(n) For purposes of this Article, the following terms are defined:

(1) The term "member of the college community" is defined as meaning state college Trustees, academic, non-academic and administrative personnel, students, and other persons while such other persons are on state college property or at a state college function.

(2) The term "state college property" includes:

- (A) real or personal property in the possession of, or under the control of, the Board of Trustees of the California State Col-(B) all state college feeding, retail, or residence facilities

whether operated by a college or by a state college auxiliary organization.

(3) The term "deadly weapons" includes any instrument or weapon of the kind commonly known as a blackjack, slung shot, billy, sandclub, sand bag, metal knuckles, any dirk, dagger, switchblade knife, pistol, revolver, or any other firearm, any knife having a blade longer than five inches, any razor with an unguarded blade, and any metal pipe or bar used or intended to be used as a club.

(4) The term "behavior" includes conduct and expression

41302. Expulsion, Suspension or Probation of Students; Fees and Notification. The President of the state college 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 twenty-first 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 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 college 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).

Debts Owed To The College

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From time to time the student may become indebted to the college. This could occur, for example, when the student fails to repay money borrowed from the college. Similarly, debts occur when the student fails to pay college dormitory or library fees, or when the student fails to pay for other services provided by the college at the request of the student. Should this occur, Sections 42380 and 42381 of Title 5 of the California Administrative Code authorize the college 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 college may withhold permission to register, and may withhold 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 college business office. The business office, or another office of the college 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.

for the Bachelor's Degree To qualify for graduation with a bachelor's degree from San Diego State, 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.

Graduation Requirements

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). Cut off 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, or 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 College Committee on English fulfills the requirement.

Candidates for the B.E. degree are exempt from this requirement, since special regulations, described under "Education" in the catalog section, Professional Curricula, apply to them.

2. Units.

For the A.B. and B.M. degree, a total of 124 units is required; for the B.S. in engineering, 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, 12 of which must be among the last 20 units (24 for the B.E.) 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.

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. 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 college.

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.

Minor. The minor normally consists of from 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 college. 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:

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 Constitu-

Graduation Requirements

tion; 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

History 8A and 8B; 176A and 176B; 177A and 177B; 179A and 179B; 181A and 181B.

U.S. Constitution

History 17A; 172A; 177A and 177B; 179A; Political Science 2; 115; 139A and 139B.

California Government

History 8B, 17B, 172B, 179B, 189B, Political Science 2, 115, 117, 118.

6. General Education.

A minimum of 40 semester units in general education must be completed. Courses taken in satisfaction of requirements for the major and minor may not be counted toward the general education requirement, and not more than 15 units in preparation for the major may be applied to general education requirements.

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. Natural Sciences

At least two courses (minimum of 6 units) to include at least 1 unit in a laboratory course

- 1. One course (minimum 2 units) in life sciences-biology, botany, microbiology, or zoology
- 2. One course (minimum 2 units) in physical sciences-astronomy, chemistry, geology, meteorology, physical geography, physical science, or physics.
- 3. Electives in any of the above or in oceanography or general psychology.

B. Social Sciences

1. At least two courses (minimum 3 units for each course) taken in two departments selected from anthropology, economics (except 2), geography (except 1 or 3), political science, sociology (except 35 or 60), and Mexican-American Studies 10 or 50. However, no more than 6 units of Mexican-American Studies or political science may be used to fulfill the requirements in social sciences

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Graduation Requirements

and American Institutions.

2. Electives in any of the above or in public administration.

C. Humanities

- 1. At least two courses (minimum 6 units) taken in two departments selected from, religious studies, humanities, philosophy (excluding logic), literature in English or literature in a foreign language.
- 2. Electives in any of the above or in art, music, drama, semantics, rhetorical theory, or history (western civilization, Asian civilization, or ancient history).

D. Basic Subjects

One course (minimum 2 units) from each of three of the five areas: 1. written communication in English

- 2. oral communication
- 2. Jogio
- 3. logic
- 4. mathematics or statistics
- 5. foreign language (excluding courses in literature or civilization)

Total units in Parts A, B, C, and D must be not less than 32 units; courses which satisfy the requirement in American Institutions may be counted in the 32 units total but may not apply to the 6-unit minimum in either Part B or Part C.

E. Physical Activities, minimum of 2 units

- A minimum of four semesters of physical activity in courses or equivalent monitored activity, to be fulfilled by
- 1. Completing four ½ unit physical education activity courses over a period of at least four semesters
- 2. Completing four satisfactory semesters of regular monitored physial activity for credit
- 3. Combinations of 1 and 2 to give the equivalent of four semesters of physical activity

Required Activity Courses

To meet general education requirements, four semesters of activity courses or monitored activity are required as outlined above. All freshmen and sophomore 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 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 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.

F. Electives to complete 40 units

Additional units may be elected from the above, from courses specifically excluded above, or from any other courses listed in this catalog.

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 Undergraduate Studies 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
- D. Basic Subjects, minimum of two courses For a total of 32 units
- E. Electives, maximum of 8 units, to provide a total of 40 units
- F. Additional requirement, 5 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 6 units shall be applicable to preparation for the major.

Breadth Requirements for Degrees in Liberal Arts and Sciences

Students whose majors are offered in the Liberal Arts and Sciences curriculum should 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.

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A Natural Salanaa	
A. Natural Science	
Either	
1. Seven units	
Life science with labora	atory
Choose one:	
Biology 1 and 2	Microbiology 1
Biology 4	Zoology 8
Physical science with la	boratory
Choose one:	the defined is the design of the second s
Astronomy 1 and 9	Physical Science 1 and 3
Chemistry 1A	Physical Science 2 and 4
Chemistry 2A	Physical Science 3 and 5
Chemistry 10A	Physics 4A
Geology 2 and 3	Physics 2A and 3A
Geology 4	Physics 5

Or

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 3 units must be in a life science, and at least 3 units must be in a physical science; at least one course must be a laboratory course.

B. Mathematics and Foreign Language

Mathematics 18 or higher numbered mathematics course, or satisfactory performance on the placement examination of the Department of Mathematics.

Foreign Language—4 units (The requirement may be met by two years of one foreign language in high school.)

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

 At least two courses (minimum 3 units for each course) taken in two departments selected from anthropology, economics (except 2), geography (except 1 or 3), political science, sociology (except 35 or 60) and Mexican-American Studies 10 or 50. However, no more than 6 units of 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.

Graduation Requirements

D. Humanities and Fine Arts Either

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

Two courses taken in two departments selected from humanities, literature, philosophy (except logic), or religious studies.

Or

2. The Scope of Civilization

Comparative Literature 52A-52B, English 52A-52B, or Humanities 59A-59B,

and, in a different department,

One additional course (minimum 3 units) in humanities, literature, philosophy (except logic), or religious studies. and

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One additional course (minimum 3 units) in art, humanities, literature, music, philosophy (except logic), or religious studies.

Or

3. Fifteen units in at least three of the following subjects: art, humanities, literature, music, philosophy (except logic), or religious studies. The fifteen 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. Mexican-American Studies 2A or Speech Communication 3 or 4,
 - e. Psychology 1
- 3. Physical Education

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

- a. Completing four ¹/₂-unit physical education activity courses over a period of at least four semesters, or
- b. Completing four satisfactory semesters of regular monitored physical activity for credit, or
- c. Combination of a and b to give the equivalent of four semesters of physical activity.

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Graduation Requirements

Required Activity Courses

To meet general education requirements, four semesters of activity courses or monitored activity are required as outlined above. All freshmen and sophomore 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 may also be exempted from the general education requirement in physical education upon approval by the Vice President of 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.

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 Officer, Administration Building, not later than the end of the third week of classes in the fall if he wants to graduate in midyear, 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 a summer session. The Class Schedule each semester specifies the exact date.

Election of Regulations for Graduation

A student remaining in continuous attendance in regular sessions and continuing on the same curriculum in any state 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 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.

Commencement

Commencement exercises are held once a year at the end of the spring semester for students who were graduated at midyear, 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 or degree, fulfills all requirements for the degree as required by this college, and has approval of the Dean of Undergraduate Studies.



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Curricula

Summary of Curricula Offered—Continued

and the protection	Arts and Sciences Curricula			Professional Curricula			Graduate Curricula	
Majors	Ap Art Scie	plied s and ences BS	Liberal Arts and Sciences AB	School of Business Adminis- tration BS	School of Engineer- ing BS	School of Education BE	Graduate Division MA MS	
Philosophy Physical education	AB		AB		an bra		MA	
Physical science Physics	*AB	BS	AB				MA MA MA MS	
Political science Psychology Public administration	*AB	1727	AB AB				MA MS MA MS	
Radiological physics ‡Radio-Television	AB	BS					MPA MS	
Recreation administration Religious Studies	AB		AB	BS		teller S		
Russian Area Studies	***		AB AB				MA	
Social welfare Social work	AB		AB				MA MSW	
Sociology Spanish			AB				MSSW MA	
**Special major Speech Communication	AB AB		AB				MA	
ology	AB						MA	
Vocational arts Zoology		BS	AB			BVE	MS	

‡‡ Offered by the Department of Telecommunications and Film.

* Limited to students in Teacher Education.

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

Offered jointly with the University of California, San Diego. Offered jointly with the University of California, Berkeley.

Offered jointly with the University of California, Riverside.

A concentration with the B.S. in Business Administration.

** An interdisciplinary program.

& Offered by Public Administration and Urban Studies.

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

44 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

Summary of Curricula Offered

	Arts and Curr	l Sciences ricula	Profe	Graduate Curricula		
	Applied Arts and Sciences	Liberal Arts and Sciences	School of Business Adminis- tration	School of Engineer- ing	School of Education	Graduate Division
Majors	AB BS	AB	BS	BS	BE	MA MS
#Accounting			BS			
**Afro-American Studios						MS
**American Studies		AB	1 4 N N N N	The Low St	(EATERACTS)	All Statistics
Anthropology		AB				MA
Art.	AR	AD				MA
**Asian Studies	AD	AD				MA
Astronomy	AB	AD				MA
Biology	AB BS	AB				MS
Botany	BS	AB				MA MS
†Business administration		AD	No. No.		12122	MINING
Chemical Physics	BS					MBAMS
Chemistry	AB BS	AR	a di Masari		1112	200 200
		ab				MA MS
**Child Development	BS	東京の人		a conternal	A A A	IPh.D.
A†City Planning		1.18.00	THE STATE		1	MOD
†Civil Engineering						MCP
Classics		AB				MS
**Comparative Literature		AB		and the second		
TCounseling				No. Stall		210
Criminal Justice Administra-	2003 3 12					MS
LION	BS		Salar Franklin			100
Drama	AB					MB
FLCOlogy						MA
tEducation		AB				Ph.D.
tElectrical engine						MA
Elementary advantion						MA
Engineering					DU	1910
English				RS	DĽ	
ttEnvironmental health		AB		DS		MA
**European studies	BS	and the second				MIN
##Finance		AB	1 Stants	0.111	52.2	
French			BS	Wints with	ALL DARS	
§Genetics		AB		ALSO ALAL		MA
Geography						Ph.D.
Geology	pa	AB				MA
German	58					MS
Health science	DO	AB				MA
History	DO					MA
Home economics	AB	AB				MA
Industrial arts	AB					MS
#Information systems						MA
#Insurance			BS			and the second second
Journalism		AD	BS		10-5-61773	States in the
**+T in		AB			- Steeland	
Manual Manua Manual Manual Manua		AB				MA
Marketing		*********				MA
**tMass Comment			BS	En Greekers ??		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Mathematica			BS	Street Street	51	
+Machanical	AB	AD				MS
Mexican American engineering		AD				MA MS
And Allenien Studios	the second se	A TO A REAL PROPERTY AND A	And the second se	Call Production of the		3.60
Microbiology		AR				MIS
Microbiology	BS	AB				MS MS
Microbiology Music Nursing	*AB BM	AB AB AB				MS MS

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Curricula

Teaching Credentials

Standard teaching credential With specialization in:

- (a) elementary teaching
- (b) secondary teaching
- (c) community college
- teaching

Specialized preparation in lieu of a minor

Standard designated services credential Standard supervision credential Standard administration credential Restricted credential

Minors for the Bachelor's Degree

Accounting **Aerospace Studies** Anthropology Art Astronomy Biology Botany **Business Management** Chemistry Classics Comparative Literature Dance Drama Economics **Employee Relations** Engineering English Finance French Geography Geology German Health Science History Home Economics Humanities Industrial Arts Information Systems Insurance

Italian **Jewish Studies** Journalism Library Science Marketing Mathematics Mexican-American Studies Microbiology Music Philosophy Physical Education **Physical Science** Physics **Political Science** 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

Afro-American Studies Major

See Afro-American Studies in the section of this catalog on Courses and Curricula.

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.

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 9 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, 198 (when relevant to American Studies).

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, 183A-183B,

Group C: Social Sciences. Economics 111A-111B, 135, 138, 173, 174; Geography 121, 155; Political Science 105, 115, 116, 120, 123S, 127A-127B, 139A-139B; Sociology 124, 125, 157; Journalism 117, 121.

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.

Preparation for the major. Six units in History 4A-4B, 9A-9B, or Philosophy 1A-1B; six units in Anthropology 1 and 2, Economics 1A-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 Comparative Literature 152A, 152B, 170; History 190A, 190B, 191A, 191B, 192, 193, 194, 195, 196A-196B, 197A-197B; Philosophy 135 or 175 (when appropriate); Religious Studies 121A-121B, 126A-126B; and from the social sciences not less than 12 units from at least two departments chosen from Anthropology 175, 178, 186, 191, 192; Economics 102, 115; Geography 131, 133, 134, 150; Political Science 183, 187, 191. Recommended: Business Administration 165.

Foreign language. Asian language recommended.

Child Development Major

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

The adviser for the child development major is Dr. Quenton Price, Family Studies and Consumer Sciences.

Preparation for the major. Anthropology 1; Family Studies and Consumer Sciences 4A; Family Studies and Consumer Sciences 70 (or Psychology 106 or Education 111 in upper division); Family Studies and Consumer Sciences 35, Social Welfare 30 or Sociology 35; Psychology 50; Sociology 1; Sociology 60 or Psychology 70 (20 units).

Major. A minimum of 36 upper division units to include Psychology 131, and 175 or Education 112; Sociology 135 or Family Studies and Consumer Sciences 135; Education 111 or Psychology 106 (or Family Studies and Consumer Sciences 70 in lower division); Sociology 140 or Psychology 145; Family Studies and Consumer Sciences 171; and Biology 159; and an additional 18 units to be 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

This major is offered by the College of Arts and Letters.

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 one of the major European languages (French, German, Italian, Russian, Spanish) beyond the minimum of four units required in liberal arts and sciences.

Interdisciplinary Programs

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, comparative education, comparative literature, music, or philosophy; three units of electives.

Humanities Minor (Emphasis in European Studies)

The minor is limited to students in secondary teacher education. Refer to the section of this catalog on the School of Education.

Humanities Curriculum

In Liberal Arts and Sciences

The Humanities curriculum is offered by the College of Arts and Letters.

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.
- (c) Contemporary Civilization.
- (d) Type courses concerned with more than one period; comparative study of Asian 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 ap-

proved by the adviser for the humanities curriculum.

Jewish Studies Minor

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The minor in Jewish Studies is offered by the College of Arts and Letters. It is designed to provide a balanced program on the undergraduate level for students desiring an interdisciplinary study of the Jewish contribution to world culture and history. It will serve the needs of students (1) who plan to specialize in disciplines in which an understanding of the Jewish intellectual contribution is essential and (2) who plan a career in public school teaching, community service, or foreign service.

The minor consists of 15-17 units, including Humanities 30A-30B or eight units of Hebrew, and nine units selected from: Comparative Literature 105, (English 105), 185, 186; Philosophy 135, 136; Religious Studies 100A, 115, 180.

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-1B, Geography 1, History 8A-8B, Political Science 1, 3, Spanish 41, 42.

Major. A minimum of 36 upper division units selected from courses in anthropology, art, economics, geography, history, political science, Portuguese, and Spanish, with not less than twelve units in one field and nine in each of two other fields. Courses shall be chosen with the approval of the faculty adviser for this major, and at least 33 units must be in courses having Latin American content.

Interdisciplinary Programs

Courses acceptable for the Latin American Studies Major:

Anthropology 157. Meso-American Ethno-history (3)

- 162. Cultures of South America (3)
- 163. Contemporary Latin America Cultures (3)
- 169-S. Backgrounds of Mexican Civilization (3)
- 180. Preclassic Aboriginal Civilizations of Mid-America (3)
- 181. Classic Pre-Columbian Civilizations of Mid-America (3)
- 182. Post-Conquest Cultures of Middle America (3) Economics
- 114. Economic Problems of Latin America (3)
- 195. International Economics-Problems (3)
- 196. Economics of Underdeveloped Areas (3)

Geography

- 123. Middle America (3)
- 124. South America (3) 198. Directed Readings in
- Geographic Literature (1)

History

- 160A-160B. Latin America (3-3)
- 161A-161B. Mexico (3-3)
- 162A-162B. History of Brazil (3-3)
- 163A–163B. The Caribbean Area (3–3)
- 164. The Pacific Coast Nations of South America (3)
- 165A-165B. Economic, Social, and Intellectual Development of Latin America (3-3)
- 167A-167B. Diplomatic History of Latin America (3-3)
- 168. The Platine Nations (3)

175. International Relations of the Latin American States (3)
184. The Mexican Political System (3)
194. Political Change in Latin America (3)

Political Science

- 195. Political Systems of Latin America (3)
- Portuguese 135. Brazilian Literature (3)
- Spanish 104A–104B. Spanish-American
- Literature (3-3) 106A-106B. Mexican Literature
- (3–3) 107. Caribbean Area Countries
- Literature (3)
- 108. Andean Countries Literature (3)
- 109. River Plate Literature (3) 170. Spanish-American Poetry
- 170. Spanish-American Poetry (3)171. Spanish-American Short
- Story (3)
- 172. Spanish-American Theatre (3)



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.

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, Humanities 153; nine units from at least two departments in the social sciences selected from Economics 102, Economics 118, Geography 126, Geography 127, Political Science 181, Political Science 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.

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.

Preparation for the major. 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. (18 units). Courses recommended for these sequences are as follows: Anthropology 1 and 2, Economics 1A-1B, Geography 1 and 2, History 4A-4B or 8A-8B, Political Science 1 and 2, 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.

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.

Interdisciplinary Programs

Social Science Major

With the A.B. Degree in Liberal Arts and Sciences Emphasis in Africa and the Middle East

Preparation for the major. Anthropology 2; Economics 1A-1B; Geography 1; History 4A-4B or Political Science 1. Recommended: Comparative Literature 52A-52B and 80A (15–18 units).

Major. Thirty upper division units from the departments of anthropology, economics, geography, history, political science, and sociology, chosen with the consent of the adviser and including not less than 15 units in any one of the above departments except sociology. Required: Anthropology 185; Economics 119; Geography 125 or 130; History 157A-157B or 158A-158B; Political Science 188, 189, or 192. Additional recommended courses: Anthropology 152, 153, 154, 156, 164, 176, 184; Economics 189, 190, 192, 195; Geography 150; History 155A-155B, 183A-183B; Political Science 176, 191, 192; Sociology 104.

Foreign language. French 1, 2, and 3; or German 1, 2, and 3; or Portuguese 1, 2, and 3. An equivalent level of competence in any other language judged appropriate by the Committee on Africa and the Middle East is acceptable. Competence will be determined by examination.

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, 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. Courses recommended for these sequences are as follows: Anthropology 1 and 2, Economics 1A-1B, Geography 1 and 2, History 4A-4B or 8A-8B, Political Science 1 and 2, Sociology 1 and 10. (25 units). 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 138 or 173; Geography 170, 199; Political Science 119 or 130; and 18 units selected from Anthropology 156, Geography 154, 155, 156, 158, 159, 171, 173, 174, 175, 176; History 185; Political Science 116, 117, 118, 125; Sociology 140, 150, 157. Recommended: Biology 115 or 165.

Social Science Major

With the A.B. Degree in Applied Arts and Sciences (For student in Teacher Education)

This major in social science is offered by the College of Arts and Letters.

The major is available in applied arts and sciences only to students who have been admitted to and continue in teacher education to time of graduation. (Refer to the section of this catalog on the School of Education for a description of the majors for elementary and secondary teachers.)

Special Major

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

The special major, consisting of three fields, instead of the usual major-minor pattern, offers a general type of education leading to objectives not otherwise provided in the regular programs of the college. Assistance in arranging the special major may be obtained at the Personnel Services Center in the Administration Building. The plan for the major must be cleared with the Evaluations Office for appropriate use of courses, approved by the department chairman in each of the three fields selected, and finally approved by the Dean of Counseling and Testing. Forms are provided for this purpose.

Preparation for the major. A minimum of a year course in each of the three fields selected in the major must be completed in the lower division as foundation for upper division courses.

Major. A minimum of 36 upper division units chosen from three fields, with not more than 15 nor fewer than nine units from any one field. If two of the three fields selected are from majors offered only in liberal arts and sciences, the special 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, the special major is governed by the regulations in applied arts and sciences. The three fields selected are subject to approval by the Dean of Counseling and Testing.



Graduate Division

Graduate Division

Graduate Division

Organization and Administration

All graduate work leading to advanced degrees is under the jurisdiction of the Graduate Division and responsibility for all graduate curricula is delegated to a Graduate Council under the chairmanship of the Dean of Graduate Studies 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 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 college authority for the administration of all matters related to graduate degree curricula, requirements for which are specified in Section 40504 of the Administrative Code.

Association Membership

San Diego State 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 Colleges upon recommendation of the faculty of San Diego State. 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.

Joint doctorates are awarded by the Board of Regents of the University of California and the Board of Trustees of the California State Colleges in the names of San Diego State and the cooperating campus of the University.

Doctor of Philosophy

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

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

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

Master of Arts

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

American studies Anthropology Art Asian studies Biology Chemistry Drama Economics Education English French Geography German

Health education History Industrial arts Latin American studies Russian Linguistics Mathematics Music Philosophy Physical education Physical science Physics

Political science Psychology Radio and Television Social science Sociology Spanish Speech Speech Pathology and Audiology

Master of Science

Chemistry

Counseling

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Civil engineering

The Master of Science degree is offered in the following fields: Aerospace engineering Criminal Justice Astronomy Administration Biology

Electrical engineering **Business** administration Geology Home economics Mass communications Mathematics

Mechanical engineering Microbiology Physics Psychology Radiological physics Social work **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 for post-graduate study, must apply for admission to the college 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 college by the Admissions Office with unclassified graduate standing. Admission to the college with unclassified graduate standing does not constitute admission to graduate degree curricula in the Graduate Division.

Graduate Division

Graduate Division

Classified Standing in the Graduate Division

A student who has been admitted to the college 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 Administrative Code, he will be admitted to the graduate curriculum of his choice and to the Graduate Division with *classified graduate standing.* The Graduate 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 college 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 Graduate Studies. 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").

Withdrawal and Reinstatement

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

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 college.

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.

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 Divisions.

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 require 56 units of graduate work. At least 30 units of work must be earned in residence at San Diego State 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 100numbered 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 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 Office.



Preprofessional Programs

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 appropriate preprofessional courses of study.

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 advisers on campus.

The curriculum for dental hygiene is essentially the same as for pre-

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 the council, it is essential that each applicant provide the council with of the Department of Biology. This form must be submitted to the Biology Department office by April 1 of the year during which application is being made.

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, 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 courses.

Prelegal Curriculum

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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 in accordance with student needs.

Recommended: Business Administration 127; Economics 131, 135, 170; History 152A-152B, 175B-175C; Political Science 111A-111B, 138, 139A. Additional: Economics 150, History 179, 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 mastery 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.

Preprofessional Programs

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 is 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; Chemistry 112.

Strongly recommend: 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 college. 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. If the student wishes to take work at this college, he is advised to consult the catalog of the college 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

Departmental Organization

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

Accreditation

The School is a member of the American Association 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.

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 Science degree in business administration with concentrations in ten areas, and the Master of Business Administration degree, a two-year graduate program. For further information, refer to the Graduate Bulletin and to the section in 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 approriate 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. 40 units in general education exclusive of courses in the major.
- 10. Application for graduation.

The Major

Each major in business administration consists of a pattern of prescribed upper division courses. The minimum number of units required is stated in the description of each major.

Also required as preparation for the major are the lower division prerequisite courses. Some majors require additional courses in a prescribed pattern in areas other than the major.

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

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

Any student majoring in Business Administration must make sure that 40 per cent 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-1B, Economics 2 or Mathematics 12, and Mathematics 20 (25 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 and Economics 100A or 100B; and 12 units selected from the following: Business Administration 101, 107, 108, 112, 114, 115, 116, 118, 119; Economics 135, 170; 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-1B; Mathematics 20; and Economics 2 or Mathematics 12 (25 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, 128, 130, 132, 150, 190, 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.

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-1B; Economics 2 or Mathematics 12; Mathematics 20 (28 units). Students who expect to use Business Administration 30A or 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 102, 126, 132, 135, 150, 184, 185, 186, 187, 188, and 190; six units of electives selected from Business Administration 128, 131, 134, 140, 163, 182, 183, and 189.

School of Business Administration

General electives. In addition to the requirements stated, the student must select up to 17 units to complete the required total. At least nine of these 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-1B; Economics 2 or Mathematics 12, and Mathematics 20 (28 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, 121, 124, 125, 126, 132, 150, and 190, and 15 units selected from Business Administration 106, 107, 128, 131, 140, 170, 171, 172, 173, 174, 175, Economics 111, 131, 135, 142, 170, 171. Fifty-two units (twelve 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 offered in three areas of concentration: business management, employee relations, and production and operations management. 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-1B; Mathematics 12 and 20 (25 units).

Major. Business Administration 102, 126, 131, 132, 134, 135, 140, 145, 149, 150, 190 and Economics 100A (37 units).

(2) Areas of Concentration Within the Major Field

Select one area:

(a) Business Management. Twelve units made up of one upper division three-unit course from each of four of the following fields: accounting, business law, economics, employee relations, finance, insurance, marketing, production management, purchasing, and real estate.

(b) Employee Relations. (1) At least six units from Business Administration 141, 142, and 143; and (2) six units from Economics 150, 152, Psychology 105, 121, 124, 133, and Sociology 120. (12 units.)

(c) Production and Operations Management. (1) Business Administration 136 and either 137 or 138; and (2) six units from Business Administration 162, Economics 107, Mathematics 130B, Philosophy 121, 122, Psychology 121, 124. (12 units.)

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

School of Business Administration

A minimum of 16 units of pattern requirements must be taken. These requirements are met by taking a minimum of eight units in the area of Life, Physical, and Social Sciences as indicated in (a) below and a minimum of eight units in the area of Humanties and Fine Arts as indicated in (b) below. These requirements may also be met by completing the two-year AFROTC program of upper division aerospace studies courses.

Courses taken to satisfy the requirements shown in (a) and (b) below are in addition to and may not be used to satisfy any requirements in general education nor may they be used to satisfy requirements stated in (1) and (2) above.

(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, 5; Mathematics 50, 51, 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 Arts, and Physical Education). All upper division courses in the specified departments are suitable as well as the following lower division courses: Art 5, 50A-50B, 52A-52B, Music 52, Speech Communication 4, 60, 62, and 64. All courses in a foreign language are acceptable, but at least eight units must be taken in one language.

Marketing Major

With the B.S. Degree in Business Administration

Preparation for the major. Business Administration 1A-1B, 30A, 80, 83; Economics 1A-1B; Mathematics 20; and either Economics 2 or Mathematics 12 (25 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-seven upper division units to include Business Administration 126, 132, 149, 150, 151, 156, 157, 158, and 190; six units selected from Business Administration 152, 153, 154, 159, 161, 162, 163, 164, 165; and six units selected from Business Administration 102, 134, 135, 140, 145, 185, 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-1B, Economics 2 or Mathematics 12, and Mathematics 20 (28 units).

Students who expect to use Economics 1A or Business Administration 30A 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, 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 (twelve of which must be upper division) and 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: 15 units required of which 11 must be upper division, including Business Administration 100.

Business management: 19 units required, including Economics 1A-1B; nine units must be upper division, including Business Administration 132.

Employee relations: 19 units required, including Economics 1A-1B; nine units must be upper division, including Business Administration 132 and 140.

Finance: 16 units required, including Economics 1A-1B and 135, and Business Administration 132.

Information systems: 19 units required, including Business Administration 83, 84, 185, 186, 187; and Mathematics 20.

Insurance: 19 units required, including Business Administration 30A-30B; 120; 121 or 124; and three additional upper division units in business administration.

Marketing: 19 units required, including Economics 1A-1B, Business Administration 150, and six additional upper division units in business administration.

Production and operations management: 19 units required, including Economics 1A-1B, Business Administration 132 and 135, and three additional upper division units in business administration.

Real estate: 19 units required, including Business Administration 30A-30B, 170, and six additional upper division units in business administration.

Business Major

For the Standard Teaching Credential

Specialization in Secondary Teaching

All candidates for the Standard Seconday teaching credential must complete all requirements for the applicable specialization as outlined in the section of this 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 secondary credential requirements.

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Business Minor

For the Standard Teaching Credential

A teaching minor in business is offered to students who are not majors in the School of Business Administration. The minor consists of 21 units, exclusive of course equivalents, to be selected in consultation with the Coordinator of Teacher Education in the School of Business Administration.

School of Education

Accreditation

The School is a member of the Americian 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 Services and Research

The Bureau of Educational Services 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, Introducing San Diego State.

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

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

Bachelor of Education Degree. The bachelor of education degree is currently offered with the elementary or kindergarten-primary credential to teachers holding a provisional credential in either of these areas.

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.

School of Education

Credentials

The credential law has been changed considerably. The credentials described below do not apply to students who have not completed two years of college work by July 1972 and have been enrolled in a teacher education program. The new requirements are being developed at this time. Students should contact the advisers in the Admissions and Counseling Office of the School of Education for information.

Those coming under the provisions of the current credentials have until September 15, 1974 to complete requirements.

Anyone wishing to teach or provide other types of professional service in the public schools of California must hold a credential issued by the State Department of Education. Credentials which are currently available are listed below with an indication of the school service authorized by each. A student who completes the prescribed program at San Diego State will be recommended by the college to the State Department of Education for the credential.

List of Credentials

Credential

(1) A standard teaching credential

with specialization in:

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

(b) Secondary teachingTeach 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.

(2) The Community College

Instructor CredentialTeach in grades thirteen and fourteen, any course in a subject matter area which appears on the credential document.

School Service Authorized

(3) †A standard designated subjects credential......Teach trade or technical courses at grade levels specified on the credential

(4) A standard designated services credential......Perform pupil personnel services or health

services as specified on the credential

+ These programs are not offered at San Diego State.

 (5) A standard supervision credentialServe as supervisor, consultant, or other intermediate administrative position including school principal
 (6) A standard administration credentialServe as a district superintendent or in inter-

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

(7) A restricted

credentialServe as a speech and hearing specialist at all grade levels.

Admission To Teacher Education

Application for Admission

Students who plan to earn a credential for elementary teaching should apply for admission to Teacher Education after completing forty-five units. For secondary teaching, application for admission should be made during the junior year. For other credentials, see the appropriate coordinator for details. Application for elementary, secondary and special education may be made at a special meeting held each semester. (For date and place of this meeting, refer to the calendar in this catalog.) No courses in credential programs may be taken until admission is granted; any exception to this rule must have the approval of the appropriate department coordinator.

Standards for Admission

The standards for admission to Teacher Education are different from those for admission to the college; therefore, admission to the college does not guarantee that the student will be admitted to Teacher Education. The committees on admission to Teacher Education will base their decision upon the following factors:

- 1. A satisfactory score on the college aptitude test taken at the college.
- 2. Competence in handwriting, reading and spelling as indicated by scores on fundamentals tests for those applying for elementary education. (See the college calendar for dates of these tests which should be taken in the second semester of the freshman year.)
- 3. Satisfactory scores on The Comprehensive College test for secondary and junior college teaching. (See the college calendar for dates of these tests, which should not be taken prior to the junior year.)
- 4. Satisfactory quality of speech and voice control.
- 5. Results of the college health examination given for teaching credential candidates.
- 6. Interviews with representatives of the Admissions Committee and, for secondary education only, with a representative of the department in which the student is a major. The Admissions Committee will base its evaluation upon the following factors established by the Board of Trustees: intelligence, scholarship, professional aptitude, personality and character, speech and language usage, many-sided interests and other compensating factors.
- 7. Satisfactory grade point averages on the first two years or more of a given curriculum and on all subsequent work taken for the credential. Minimum grade point averages are indicated below:
 - a. Elementary teaching, 2.20
 - b. Health and development credential, 2.20
 - c. Secondary teaching, all subjects, 2.50, and major field, 2.75.
 - d. Junior college teaching, 2.50.
- 8. For administration, supervision, and pupil personnel services credential candidates, a satisfactory grade point average (minimum 2.75) on all work applicable to that credential, exclusive of the work applied to the basic credential.
- 9. For secondary teaching candidates, an official evaluation and program

School of Education

approved by the authorized departmental representative in the student's major field and by a representative in secondary education. For elementary teaching candidates, a planned program should be developed with an elementary education adviser. Students planning a combined special education-elementary, special education-secondary should also seek program advising with a special education advisor.

10. A transcript of all work completed at other institutions must be filed with the secondary education department

Transfer Students With Provisional Credentials

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. For an evaluation of college credit completed to date, make formal application at the Evaluations Office, Administration Building, San Diego State. For additional details, see the Coordinator of Elementary Education or the Coordinator of Secondary Education.

Advanced Standing in Teacher Education

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

Evaluation of Credits

After an interval of five years, courses in education are re-evaluated and subject to reduction in credit, in light of such new requirements as may have been put into effect and changes in educational procedures. All courses taken either at this college or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

Standard Teaching Credential—Elementary

General Requirements

To be recommended by San Diego State for the Standard Teaching Credential with specialization in elementary teaching, an applicant shall have completed successfully a program including the following requirements:

I. Four years, or the equivalent, of college or university education with a baccalaureate or higher degree from an approved institution.

II. A fifth year of postgraduate education taken at the upper division or graduate level. (Under certain conditions, including the completion of a major and of the required undergraduate work in professional education, this fifth year may be postponed, and completed during the first seven years of teaching. Further details on this option are available in the office of the Coordinator of Elementary Education.)

III. Forty-five semester hours in general education.

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School of Education

IV. One of the majors specified for elementary teaching. If the major is not in an academic subject, the completion of one or two minors is an additional requirement. For further information, see the Coordinator of Elementary Education.

V. The following professional courses in education are scheduled in blocks: Education 111, 112, 130, 131, 132, 101 or 202 (30–31 units). See advising brochure for further information. This sequence of professional courses may begin in the second semester of the junior year.

VI. The following courses (unless taken as part of the major, minor, or general education): Art 2A, Geography 1, 2, Health Science and Safety 150, Mathematics 10A, Music 2, Physical Education 53. All are prerequisite to admission to the professional education blocks. (See advising brochure).

Majors for Elementary Teaching

Majors for elementary teaching available at this college are listed below. A description of each departmental major will be found in the section of this catalog on Courses and Curricula, under the heading of the department offering the major. Interdepartmental majors, not limited to a single department, are described below.

Students in Teacher Education at the time of graduation who complete the teaching major in the undergraduate program, including prerequisites, will normally meet the requirements for the corresponding major for a bachelor's degree. Any exceptions are noted in the description of the teaching major. (See page 133 and 136). Students with majors other than those listed below should see the Coordinator of Elementary Education to clarify credential requirements.

List of Majors

Majors will be selected from the following list:

Art Chemistry English Fine Arts Fine Arts and Humanities Fine Arts and Social Studies French German Mathematics Mexican-American Studies Physics Physical Science Social Science Spanish

Description of Interdepartmental Majors for Elementary Teaching

Fine Arts Major

For Elementary Teaching

Preparation for the major. Art 1A and 2A; Music 2, 10A, 10B, 40; Drama 5 and 40; Speech Communication 3. (20 units)

Teaching Major. A minimum of 26 upper division units to include six units selected from Art 110, 117A or 119A, 118, and 108 or 156A; Music 144, 145, 146; either one course selected from Art 106A, 111A, 117A, 120A or two units from Music 170 through 188; nine units selected from Drama 110, 120, 122, 132, 140A, 142 (maximum 3 units), 152A, 160A, Telecommunications and Film 180.

Degree Requirements. Students in Teacher Education who complete this teaching major, including prerequisites, in the undergraduate program may offer it as a major for the A.B. degree in applied arts and sciences. A minor is not required with this major for the degree.

Fine Arts and Humanities Major

For Elementary Teaching

Preparation for the major. Courses must be selected from the same two areas as those to be used for the upper division concentrations; Art 1A, 2A; or Music 2, 10A, 10B, 40; or Drama 5 and 40; plus six units in either English or Philosophy.

Teaching Major. A minimum of 24 upper division units to include nine units selected from Art 110, 118, 117A or 119A, 108 or 156A; Music 144, either 143 or 145, 146A, and two units selected from courses numbered 170 through 188; Drama 110, 120, 122, 127A, 132, 140A, 142 (maximum 3 units), 152A, 160A. At least 15 additional units as specified in one of the following areas: Philosophy 101, 103, 123, 127, either 128 or 135; English 175 or 180, six units selected from 103, 121A, 121B, or from courses numbered 111 through 118, six units selected from courses numbered 122A through 149 (except 103, 121A, 121B).

Degree Requirements. Students in Teacher Education who complete this teaching major, including prerequisites, in the undergraduate program may offer it as a major for the A.B. degree in applied arts and sciences. A minor is not required with this major for the degree.

School of Education

Fine Arts and Social Sciences Major

For Elementary Teaching

Preparation for the major. Courses must be selected from the same two areas as those to be used for the upper division concentrations: Art 1A, 2A; Music 2, 10A, 10B, 40; or Drama 5 and 40; plus six units in one of the following: an-thropology, economics, geography, history, political science, psychology, or sociology.

Teaching Major. A minimum of 24 upper division units to include nine units selected from Art 110, 118, 117A or 119A, 108 or 156A; Music 144, either 143 or 145, 146A, and two units selected from courses numbered 170 through 188; or nine units selected from Drama 110, 120, 122, 127A, 132, 140A, 142 (maximum 3 units), 152A, 160A. At least fifteen additional units as specified in one of the following areas:

Anthropology 100A, 100B, 102, 103, 120, 151, 152, 156, 163, and 165.

Economics 100A, 100B, 102, 103A, 103B, 110, 111, 131, 135, 150, 170, 195, and 196.

Geography. Six to nine units selected from Geography 120, 121, 122, 123, 124, 125, 126, 127, 129, 130, 131, 133, 134; six to nine units selected from Geography 100, 101, 105, 110, 150, 151, 152, 153, 155, 180, 181A, 181B, and 182.

History. Prerequisites: History 4A and 4B. History 131A, 131B, 143A, 143B, 144A, 144B, 171A, 171B, 189A, 189B, 191A, and 191B.

Political Science. Twelve units from Political Science 105, 111A, 111B, 112, 116, 117, 120, 125, 130, 138, 170A, 170B; and three units from Political Science 180, 181, 183, 184, 185, 186, 187, 188, 189, 190, and 194.

Psychology 105, 109, 131, 145, 150.

Sociology 102, 110, 114, 122, 125, 136, 140.

Degree Requirements. Students in Teacher Education who complete this teaching major, including prerequisites, in the undergraduate program may offer it as a major for the A.B. degree in applied arts and sciences. A minor is not required with this major for the degree.

Physical Sciences Major

For Elementary Teaching

Preparation for the major. A minimum of 18 units to include: three units of astronomy; three units of geology; six units of chemistry; six units of physics; and must include prerequisites for the upper division courses selected for the major. Adequate preparation in mathematics is essential.

Teaching Major. A minimum of 24 upper division units in any two or more of the academic subject areas of the physical sciences and mathematics, selected with approval of the adviser in the physical sciences for teaching programs.

Degree Requirements. Students in Teacher Education who complete this teaching major, including prerequisites, in the undergraduate program may offer it as a physical science major with the A.B. degree in applied arts and sciences. A minor is not required for the degree.

Social Sciences Major

For Elementary Teaching

Preparation for the major. A six-unit sequence in one of the following fields: (1) anthropology, (2) economics, (3) geography, (4) history, (5) political science, (6) sociology; and six additional units in one or two of the remaining fields.

Teaching Major. A minimum of 24 upper division units to include 12 units from any one field named above; and six units from each of two additional fields named above. (It is recommended that no less than six units of upper division or graduate work in the field selected for the 12-unit concentration be taken in the postgraduate year.)

Degree Requirements. Students in Teacher Education who complete this teaching major, including prerequisites, in the undergraduate program may offer it as a major for the A.B. degree in either applied arts and sciences or in liberal arts and sciences. A minor is not required with this degree.

Standard Teaching Credential—Secondary

General Requirements

To be recommended by San Diego State for the Standard Teaching Credential with specialization in secondary teaching, an applicant shall have completed successfully a program including the following requirements:

I. Four years, or the equivalent, of college or university education with a baccalaureate or higher degree from an approved institution.

II. A fifth year of postgraduate education taken at the upper division or graduate level.

III. Forty-five semester units in general education.

IV. One of the majors specified for secondary teaching.

V. One of the minors specified for secondary teaching, or specialized preparation to serve as (1) a librarian or a teacher of librarianship, or (2) a teacher of exceptional children. (When the major is in a nonacademic subject, the minor must be in an academic subject and must include at least twelve upper division or graduate units.)

VI. The following professional courses in education: Education 100, 110, 121, 180A-180B-180C-180D, and 252 (24 units). Also required is Health Science and Safety 151 (2 units).

Majors for Secondary Teaching

Candidates for the Standard Teaching Credential with specialization in secondary teaching must complete one major and one minor in addition to the required courses in professional education.

Majors for secondary teaching available at this college are listed below. A description of each departmental major will be found in the section of this catalog on Courses and Curricula, under the heading of the department offering the major. Interdepartmental majors, not limited to a single department, are described below. Although these teaching majors need not be completed until the end of the postgraduate year, most students will need to complete an undergraduate major applicable toward a bachelor's degree.

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School of Education

Students in Teacher Education at the time of graduation who complete the teaching major in the undergraduate program, including prerequisites, will normally meet the requirements for the corresponding major for a bachelor's degree. Any exceptions are noted in the description of the teaching major.

LIST OF MAJORS

Majors will be selected from the following list:

Art Biological Sciences Business Chemistry Drama Economics English French Geography German Health Science History Home Economics Industrial Arts Mathematics Mexican-American Studies Music Journalism Physical Education Physics Physical Science Psychology Russian Social Sciences Spanish Speech Communication

Description of Interdepartmental Majors For Secondary Teaching

Physical Sciences Major

For Secondary Teaching

Preparation for the major. A minimum of 18 units to include: three units of astronomy; three units of geology; six units of chemistry; six units of physics; and must include prerequisties for the upper division courses selected for the major. Adequate preparation in mathematics is essential

Teaching Major. A minimum of 24 upper division units to include 15 units in one of the following areas: astronomy, chemistry, geology or physics. The remaining nine units must be completed in two or more of the following areas: astronomy, chemistry, geology, mathematics, physics or physical science. The adviser is a member of the faculty of the Department of Physical Science.

Postgraduate Year. Six upper division or graduate units must be completed in one of the areas listed in the major in which a 15 unit concentration may be done with the approval of the adviser in physical science.

Degree Requirements. Students in Teacher Education using this teaching major for a bachelor's degree will be graduated with a major in physical science with the A.B. degree in applied arts and sciences. A minor is not required for the degree; however, a teaching minor, which may be completed in the undergraduate program, is required for the credential.

Social Sciences Major For Secondary Teaching

Preparation for the major. 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. Courses recommended for these sequences are as follows: Anthropology 1 and 2, Economics 1A-1B, Geography 1 and 2, History 4A-4B or 8A-8B, Political Science 1 and 2, Sociology 1 and 10. (18 units.)

Teaching Major (Undergraduate). Thirty upper division units to include 15 units from any field named above; six units from each of two additional fields named above; and three units of electives from any of the fields named above. The major must include six units in U.S. history in either lower or upper division and three units in a fourth field, selected from the social science fields named above.

Postgraduate Year. Six upper division or graduate units to be selected with approval of an adviser for the social sciences major.

Degree Requirements. Students in Teacher Education who complete this teaching major, including prerequisites, in the undergraduate program may offer it as a major for the A.B. degree either in applied arts and sciences or in liberal arts and sciences. A minor is not required with this degree; however a teaching minor, which may be completed in the undergraduate program, is required for the credential.

Minors for Secondary Teaching

Minors for secondary teaching available at this college are listed below. A description of each departmental minor will be found in the section of this catalog on Courses and Curricula, under the heading of the department offering the minor. An interdepartmental minor, not limited to a single department, is described below. Although these teaching minors need not be completed until the end of the postgraduate year, many students will need to complete an undergraduate minor applicable toward a bachelor's degree.

Students in Teacher Education at the time of graduation who complete the teaching minor in the undergraduate program will normally meet the requirements for the corresponding minor for a bachelor's degree. Any exceptions are noted in the description of the teaching minor, which will be found in the section of this catalog on Courses and Curricula, under the heading of the department offering the minor. Specialized preparation which may be substituted for a minor is described later in this section of the catalog under the title: Specialized Preparation.

Art Biology Business Chemistry Drama Economics English French Geography German

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Journalism Latin Mathematics Mexican-American Studies Music Physical Education Physical Education—Coaching Emphasis Physics Political Science

School of Education

Health Sciences History Home Economics Humanities 1. Emphasis in European Studies 2. Emphasis in Latin

Industrial Arts Italian Recreation Spanish Specialization in (a) Librarianship (b) Teaching of Exceptional Children—Mentally Retarded or Deaf and Severely Hard of Hearing Speech Communication

Psychology

Description of Interdepartmental Minors for Secondary Teaching

Humanities Minor

For Secondary Teaching

Emphasis in European Studies

The interdepartmental minor in Humanities with emphasis in European Studies for secondary teaching consists of 24 units to include Geography 2, History 4A-4B, Humanities 150-150B or 151A-151B; six units selected from Economics 110, History 101A-101B, 121A-121B, 131A-131B, 133A-133B, 135A-135B, 136A-136B, 137A-137B, and Political Science 185; and three units selected from Art 154A, 155A, 155B, 156A, 156B, Comparative Literature 125, 126, Education 104, Geography 126, Music 151A, 152A-152B.

Humanities Minor

For Secondary Teaching

Emphasis in Latin

The interdepartmental minor in humanities, with emphasis in Latin, for secondary teaching consists of 15 units of Latin, six of which must be in upper division courses. Eight units must be selected from Comparative Literature 102A-102B, General Language 20, Humanities 40, Philosophy 101, or upper division Latin courses.

The Community College Instructor Credential Specific Requirement

The sole requirement for obtaining the Community College Instructor Credential is the obtaining of a Master's degree in a subject matter area designated in Title 5, Section 5, 52210, (subjects taught in a Community College). Upon completion of requirements for the Master's degree, the candidate should then apply directly to the Office of the Chancellor, California Community Colleges, 825 15th Street, Sacramento, California 95814.

Suggested Professional Education

No formal courses in education are required under the current interpretation of the Education Code. 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 with the Community College Coordinator, Room 128, Education Building.

Most departments on the San Diego State 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 (2)

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 assignment.

Specialized Preparation

Applicable to Standard Teaching Credentials with Specialization in Elementary and Secondary Teaching.

School Librarianship

Specialized preparation to serve as a school librarian may be substituted for the minor in the Standard Teaching Credential in secondary teaching, when the major is in an academic subject matter area.

Although a minor is not required, candidates for the elementary specialization may fulfill the requirements for School Librarianship concurrently with the elementary certification. (See the Coordinator of Educational Technology and Librarianship for advising.)

Requirements consist of the following: Educational Technology and Librarianship 110, 118, 119, 136, 138, 184, 231, 232; Education 183 (4 units); two courses selected from Educational Technology and Librarianship 225, 226, 227.

Exceptional Children: Area of the Mentally Retarded

The program of specialized preparation to serve as a Teacher of Exceptional Children: Area of the Mentally Retarded, may be substituted for a minor for the Standard Teaching Credential in secondary teaching, when the major is in an academic subject matter area.

Although a minor is not required, candidates for the elementary specialization may fulfill the requirements for the area of Mentally Retarded concurrently with the elementary certification. (See the Coordinator of the Department of Special Education for advising.)

Requirements consist of the following: Education 167, 168 or 169, 171, 172, 173, 182, Psychology 109, Speech Pathology and Audiology 5, and two units of electives with approval of the adviser. (26 units.)

Exceptional Children: Area of Educationally Handicapped

The program of specialized preparation to serve as a Teacher of Exceptional Children: Area of Educationally Handicapped is an additional area of concentration which may accompany work in elementary and secondary teaching. The area includes preparation to teach pupils who by reason of marked learning or behavioral problems or a combination thereof, cannot receive the reasonable benefit of ordinary education. For further information, contact the Coordinator of Special Education.

Exceptional Children: Area of Deaf and

Severely Hard of Hearing

The program of specialized preparation to serve as a Teacher of Exceptional Children: Area of the Deaf and Severely Hard of Hearing may be substituted for a minor for the Standard Teaching Credential in secondary teaching, when the major is in an academic subject matter area.

Requirements consist of the following: Education 167, 179 and 185; Speech Pathology and Audiology 127 or Education 172; Speech Pathology and Audiology 102, 120, 123, 140, 141, 143, 150, 151, 152, 153, 156 and 256.

Although a teaching minor is not required, candidates for the elementary specialization may fulfill the requirements for certification in the area of Deaf and Severely Hard of Hearing concurrently with the elementary certification. (See Chairman, Department of Speech Pathology and Audiology for advising.)

Standard Designated Services Credential

Pupil Personnel Services Specialization

A recent change in the regulations for the Standard Designated Services Credential with a specialization in Pupil Personnel Services now provides for the issuance of this credential with the satisfactory completion of the approved program at this institution.

The approved program designated for pupil counseling is the 36-unit Master of Science in Counseling degree program as formulated in the Graduate Bulletin provided that the program include within or in addition to the Master of Science program, Education 226 (Guidance Services in Public Education), Education 233 laboratory (a pre-practicum laboratory related to the course Theory and Process of Counseling and Education 332 (Practicum in Counseling.) For those without two years of full-time public school experience, Education 331 (Field Work in Counseling) for 3 units to include a minimum of 120 clock hours of pupil personnel service in a school setting will be required.

Transfer students who hold a master's degree and who desire to qualify for this approved program need to verify (1) a master's degree from an accredited institution, (2) course work in the master's program equivalent to courses in this approved program, and (3) satisfactory completion of a minimum of 12 units at San Diego State to include Education 332 (Practicum in Counseling).

This credential can be issued on partial fulfillment of requirements to appli-

cants with two years of public or private school experience upon satisfactory completion of one-third (12) units of the program.

Applicants desiring the Standard Designated Services Credential with an endorsement authorizing service as school psychologist and/or school psychometrist need additional coursework to that required in the above program. These requirements are specified in a special bulletin available from the Coordinator of Counselor Education.

Health Specialization

To be recommended by San Diego State for the Standard Designated Services Credential with a specialization in Health, authorizing service as a school nurse, an applicant shall have completed successfully a program including the following requirements:

I. Possession of a valid certificate of public health nursing issued by the California State Board of Public Health. Registration as an R.N. in the State of California. (Waived for applications filed prior to September 1, 1970.)

II. Five years of college or university education, including a baccalaureate degree.

III. The following professional courses: Education 111 or 113, 115 or 230, 167, 121P; Health Science and Safety 153; Nursing X-160; Nursing 125-126 or Health Science and Safety 160. (20 units.)

IV. One hundred and eighty clock hours of supervised field experience, or the authorized equivalent in terms of actual experience. (For details, see the Coordinator of the Health and Development program.)

Standard Supervision Credential

The Standard Supervision Credential authorizes the holder to serve as a supervisor, consultant, coordinator, or in an equivalent supervisorial or intermediate administrative position at all grade levels in all areas that his credential (basic) authorizes him to teach or serve. However, to serve as a principal, his college or university preparation must include a major in an academic subject area, or a diversified major as provided for by law.

NOTE: By State interpretation, department heads do not need to possess the Standard Supervision Credential.

To be recommended by San Diego State for the Standard Supervision Credential, an applicant shall have completed successfully a program including the following requirements:

I. Six years of college or university education including:

(a) Two years of acceptable postgraduate education in an approved institution.

(b) A master's degree requiring not less than five years of education earned in an approved institution.

II. The possession of a valid basic credential.

III. Five years of successful full-time classroom teaching experience.

IV. Admission to the program for school supervision and administration. (For details, see the Coordinator of the Department of Educational Administration.)

V. The following professional courses:

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(a) For the elementary school concentration, Standard Supervision Credential: Education 260, 261, 262, 240 or 263, 264A-B-C, and 266A-B-C.

(b) For the secondary school concentration, Standard Supervision Creden-

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School of Education

tial: Education 260, 261, 262, 250 or 263, 265A-B-C, and 267A-B-C.
(c) For service as a supervisor of Pupil Personnel Services, Special Education, School Health Services, or Library Services special programs are provided. For details see the Coordinator of the Department of Educational Administration.

Standard Administration Credential

The Standard Administration Credential is required for service as superintendent or assistant, associate, or deputy superintendent.

The rules and regulations of the State Board of Education prescribe either (a) a doctorate or (b) an academic master's degree.

At the present time, San Diego State is not recommending for this credential. Courses required for this credential will be offered, for the present at least, on an irregular basis as demand for them occurs.

Bachelor of Education Degree

This degree is intended for teachers holding provisional kindergarten-primary or elementary credentials.

In addition to the requirements listed in "Graduation Requirements" in the catalog section Degrees and Programs, the candidate must complete at least two units in each of four of the following fields: art, English and speech, health science and physical education, mathematics, music, natural science, and social science (including geography). He must complete a major of 24 units in elementary education, including courses from each of the following areas: methods of teaching in the elementary school, principles of elementary education, child psychology, and instructional media. He may receive four units for each year of verified successful teaching to a maximum of eight units applicable on the degree. Up to 30 units may be earned by examination in lieu of the courses in the areas listed.

Bachelor of Vocational Education Degree

This degree is available only to vocational teachers 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.

School of Engineering

Accreditation

The undergraduate curriculum in Engineering, with options in aerospace, civil, electrical and electronic, 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 level. 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 college, 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 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 upon the mastery or a strong core of subject matter in the physical sciences, mathematics, and the engineering sciences of broad applicability. Woven throughout the pattern is a continuing study of the socio-humanistic facets of our civilization, because the engineering graduate must expect to find his best expression as a leader of men, conscious of the social and economic implications of his decisions.

Although the profession of engineering presents in practice a variety of specialties, the undergraduate student confines his attention during the first two years of the four-year program to a common pattern of course work in fundamentals. During his junior and senior years he may give outlet to his interest in a broad field of engineering by electing course work in aerospace.

School of Engineering

School of Engineering

civil, electrical and electronic, 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 upon 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 college.
- 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 college.
- 8. American institutions, to include competence in American history, institutions, and ideals; U.S. Constitution; and California state and local government.
- 40 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.

Major in Engineering

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

Lower Division Requirements

Fall semester Chem. 1A, General Math. 50, Anal. Geom. and Calc Engr. 20, Engr. Graphics Engl. 5 or Phil. 20 P.E. Activity	Freshman Units 5 5 2 3 1/2 151/2	Year Spring semester Chem. 1B, Gen., or 1E, Chem. for Engrs	Units 3 4 4 3 3 1/2
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	Sophome	ore Yec
ath. 52, Diff. and Integ. Calc	4	Phys
hys. 4B, Principles	4	Eng
ngr. 30, Engr. Meas. Anal.	2	Eng
ngr. 50A, Engr. Mech. I	3	Eng
merican Institutions	3	Ame
E. Activity	1/2	Sp. (
and a support of the second second		P.E.
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P.E. Activity	1/
p. Communication 3	2
merican Institutions	3
Engr. 60, Electr. Circuits	3
Engr. 50B, Engr. Mech. II	3
Engr. 40, Engr. Prob. Anal. I	2
Phys. 4C, Principles	4
Tear	

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

All students in the Aerospace Engineering option pursue a common program of aerospace engineering fundamentals; however, some elective opportunity is provided through a choice of upper division courses in engineering, mathematics, or physics, subject to approval of the adviser and the department chairman. The recommended pattern for upper division aerospace engineering courses follows:

	Junio	r Year	
Fall Semester	Units	Spring Semester	Units
Engr. 115 Fluid Mechanics	3	Engr. 150B, High Speed	
Engr. 115L Fluid Mechs Lab	1	Aerodynamics	. 3
Engr. 116 Int. to Solid Mechs	3	Engr. 151A Aero. Struct. Anal. I	. 3
Core Laboratory	1	Engr. 153A Aero. Flight Mechs	. 3
Engr. 150A Low Speed		Engr. 154 Exp. Aerodynamics	. 2
Aerodynamics	3	Engr. 187B Methods of Analysis	. 3
Engr. 187A Methods of Analysis	3	General Education	. 3
General Education	3		
	17		17
	Senior	r Year	
Fall Semester	Units	Spring Semester	Units
Engr. 151B Aero Struct.		Engr. 159 Aircraft	
Analysis II	3	Stab. and Cont	. 3
Engr. 190G Aero. Engr. Appl	2	Engr. 190H Aero. Engr. Appl	2
Core Elective	3	* Electives within major	7
Electives within Major	5	General Education	. 3
General Education	3		
	-		
	16		15

* Approved as part of the student's master plan

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School of Engineering

School of Engineering

Civil Engineering

All students in the Civil Engineering option pursue a common program of civil engineering fundamentals; however, some elective opportunity is provided through a choice of upper division engineering courses, subject to approval of the adviser and the department chairman. The recommended pattern for upper division Civil Engineering courses follows:

	Junior)	fear	
Fall Semester Engr. 116, Introd. to Solid	Units	Spring Semester Engr. 115, Fluid Mechanics	Units 3 1
Engr. 116L, Solid Mechanics Lab Engr. 187A, Methods of Analysis	1 3	Engr. 120A, Struc. Anal. I Engr. 128A, Surveying	4 3
Engr. 110, Thermodynamics and Heat Transfer General Education	3 6	Instrumentation and Electrical Energy Conversion	3
	16	Geol. 53, Gen. Geol. for Engrs	$\frac{1}{15}$
	Senior	year	

	Jeino	i yeui	Contraction of the second
Fall Semester	Units	Spring Semester	Units
Engr. 122, Soil Mech.	3		
Engr. 123, Appl. Hydraul	3		
Engr. 126, Transportation Engr	3	Engr. 121, Reinf. Concrete	3
* Electives within major	5	* Electives within major	11
General Education	3	General Education	3
	-		- 11 C
	17		17

Electrical and Electronic Engineering

All students with the option in Electrical-Electronic Engineering include in their program a sequence of courses designed to develop an understanding of the basic principles, laws, and methodology of Electrical-Electronic Engineering. The student, through the proper selection of electives, has the opportunity to develop proficiency in his area of special interest. Typical areas include communications, control systems, microwave circuits, digital systems and solid state electronics. The recommended pattern of courses for upper division electrical-electronic engineering majors is tabulated below.

	Junior '	Year	
Fall Semester Eng. 100, Elect. Ener. Conv. Engr. 100L, Elect. Ener. Conv. Lab. Engr. 101, Funds. Electronics Engr. 101L, Electronics Lab. Engr. 111, Network Analysis Engr. 187A, Methods of Analysis General Education	Units 3 1 3 1 3 3 3 3 17	Spring Semester *Engr. 102, Electr. and Mag. Fields or †Elective within major Engr. 112, Adv. Network Anal Engr. 114, Electronic Circuits Engr. 114L, Electronic Circ. Lab Core Elective General Education	Units

and the second	Senio	r Year	
Fall Semester *Engr. 102 Electr. and Mag. Fields or †Elective within major Elective within major Core Elective	Units 3 6 3	Spring Semester †Electives within major Core Elective General Education	Units 10 3 3
Core Laboratory General Education	1 3		
	-		-
The "-1	16		16

The "electives within major" for each of the areas of special interest will include the following courses:

的现在分词 化合同分子 医子宫内的 化分子	6th Sem.	7th Sem.	8th Sem.
Communications	102	133, 134,	135, 139,
Service States		134L, 137	139L, 191
Control Systems	167	102, 113L,	169, 169L
A A A A A A A A A A A A A A A A A A A		168	
Digital Engineering	176	102, 174	175, 177,
			177L
Electronics	102	134, 134L,	135, 162,
		174	164 175

Mechanical Engineering

All students with the option in Mechanical Engineering follow a common program of mechanical engineering fundamentals. Opportunity to pursue areas of interest is provided through the choice of technical electives. This opportunity is afforded in the general areas of design and energy conversion. The recommended pattern for required upper division courses in mechanical engineering is as follows:

	Junio	r Year	
Fall Semester	Units	Spring Semester	Units
Engr. 103. Elect. Energy	3	Engr. 115. Fluid Mech	. 3
Engr. 107. Materials and		Engr. 115L. Fluids Lab., or	
Processes	4	Engr. 103L. Elect. Engr. Lab.	1
Engr. 108. Thermodynamics	3	Engr. 140. Heat Transf., or	
Engr. 108L. Thermal Sci. Lab	1	Engr. 146A. Machine Des.	3
Engr. 116. Intro. to Solid		Engr. 148. Engr. Thermo.	4
Mech.	3	Engr. 183. Simul. Engr. Sys.	3
Engr. 187A. Methods of		General Education	3
Analysis	3		_
	-		17
	17		

100c is a required course.
* Recommended general education course.
† Approved as part of student's master plan by the department chairman.

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School of Engineering

	Senior	Year	-
Fall Semester Engr. 140. Heat Transfer, or	Units	Spring Semester Engr. 190D. Engr.	Units
Engr 146A Machine Design	3	Applications	2
Engr 145 Mech of Mach	3	*Electives within major	6
Engr. 190C. Engr. Applications	2	General Education	6
*Electives within major	6		-
General education	3		14
	-		
	17		

Minor in Engineering

The minor in engineering, intended for students in other academic areas of the university, consists of 15 units in engineering, nine of which must be upper division. 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 Colleges in May, 1963. The School also offers a program of professional education which commences in the undergraduate curriculum and continues through one calendar year of graduate work, leading to the Master of Science in Social Work degree. The curriculum was approved in January, 1969, on an experimental basis for a four-year period effective in September, 1970, by the Accreditation Commission of the Council on Social Work Education. Only students completing the undergraduate major in social welfare at San Diego State or its equivalent can be considered for this program.

The objectives of the School of Social Work at San Diego State are to equip students with the essential knowledge, philosophy and basic skills for their responsible entry into 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 beginning professional practice; 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.

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 of 18 weeks.

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 a general prerequisite, competence in the specific 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 Graduate Studies before they may enroll in a graduate level 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 is offered in the summer.

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

(3) I	Three is or is all
(3) II	Three units. Offered in fall semester.
(3-3)	Three units. Offered in spring semester.
(0-0)	Three units each semester. Year course

normally beginning in the fall semester.

Although the college 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 applicable to the minor or to preparation for the major only by special action of the department.

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 committee or a faculty adviser for an on-campus organization which sponsors such activities and obtain his written consent to supervise his work and evaluate it for credit purposes.

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

Honors Courses (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 may earn up to six units of credit through it. 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.

Aerospace Studies

Aerospace Studies In the College of Professional Studies

Faculty

Professor: French (Chairman) Assistant Professors: Brandt, 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.

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

Flight Instruction and Pay

The Flight Instruction Program (FIP) is offered to qualified senior cadets who have elected to enter pilot training when reporting for active duty. The cost of the flight training is paid by the Air Force. Instuction 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 twenty months of the program. Cadets receive approximately \$35 during the Field Training Unit and are reimbursed for the cost of travel to and from the unit.

Aerospace Studies Minor

The minor 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; and 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.

Prerequisites: Air Science 131A and 131B.

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) 1

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 certificate.

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

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Individual study. Six units maximum credit. Prerequisite: Consent of Aerospace Studies Department chairman.

Afro-American Studies Administered under the direction of the Dean of

Undergraduate Studies

Faculty

Instructors: Anderson, Briscoe, Bryant, Foster Lecturer: Waymon

Offered by Afro-American Studies

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

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 requirments listed on page 85 of this catalog. A minor is not required with this major.

Preparation for the major. Sociology 1, English 5, and 12 additional units in courses prerequisite to upper division courses to be taken in the major. Economics 1A-1B and Political Science 1 and 2 are recommended.

Major. A minimum of 30 upper division units, to be selected from the list below and from other suitable courses, in a program approved by the adviser in Afro-American studies. Required courses, nine units: Comparative Literature 180; History 183; Sociology 124 or 125; 15 units selected from the following: Economics 150, 185; History 173A-173B; Music 151D; Political Science 118, 130; Social Welfare 100A-100B; Sociology 157, 124 or 125; and six units of electives as approved by the adviser.

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.

Lower Division Course

4. Urban Law (3) I, II

Legal problems of residents of urban societies, especially the urban poor. Social burdens, including juvenile and criminal processes. Social benefits and welfare. Private law, including employment, rental and purchase agreements, debt and consumer problems.

Anthropology In the College of Arts and Letters

Faculty

Emeritus: Rogers

Professors: Anderson, Ezell, Goldkind

Associate Professors: Leach, Shutler (chairman), Watson, Whitney

Assistant Professors: Dubbs, Greenfeld, Himes, Jones, Lippold, Pendleton, Rohrl, Sonek, Staniford, Wagner, Young

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

Preparation for the major. Anthropology 1, 2 (six units)

Major. A minimum of 24 upper division units to include three units selected from Anthropology 102 or Biology 158; three units selected from 103, 170 or 174; six units selected from 152, 162, 171, 175, 178, 191 or 192; six units selected from 150, 154, 156, 165, or 167; three units from 120, 122, or General Language 196; three units of Anthropology 197. (Anthropology 197 should be taken during senior year; 100A or 100B may not be counted in the upper division requirements for graduation.)

Anthropology Minor

The minor consists of a minimum of 15 units in anthropology, nine 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; systems of social organization, politics, economics, religion, and language. Not open to

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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 archeology through excavation, laboratory analysis, and preparation of reports. (Formerly numbered Anthropology 173A.)

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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. 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 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. Human Paleontology (3) II

Prerequisite: Anthropology 1 or 100A.

Comparative anatomy of fossil man and other primates; evolutionary relationships and cultural associations.

102. Physical Anthropology (3) |

Prerequisite: Anthropology 2 or 100A.

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 medico-legal problems.

103. Principles of Archaeology (3) II

Prerequisite: Anthropology 1 or 100B.

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.

115. Primatology (3) |

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

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Anthropology

of prehistoric human behavior. Extensive use of the primate collections of the San Diego Zoo.

120. Introduction to Anthropological Linguistics (3) I

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

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.

122. Language in Culture (3) II

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

124. Descriptive Linguistics (3) II

Prerequisite: Anthropology 120.

Principles and techniques of descriptive linguistics. Problems and methods in the phonetic transcription and analysis of unwritten, non-Indo-European languages. Emphasis on articulatory phonetics, field techniques, and work with informants.

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 of European sociocultural regions.

149. Kinship and Social Organization (3) |

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 emphasis on non-Western societies.

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.

1515. 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) |

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 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.

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) |

Prerequisite: Anthropology 2.

Examination and comparison of the relationships which exist between the natural environment and the socio-cultural processes in non-literate 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 non-industrial peoples.

161. The California Indian (3) |

Prerequisite: Anthropology 2.

Native California Indian cultures with stress on the Indian groups of Southern California. The industries, arts, social organization, folklore and religion will be Anthropology

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 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) |

Prerequisite: Anthropology 2.

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.

164. Urban Anthropology (3) I

Prerequisite: Anthropology 2 or 100B.

Cultural roles of urban centers and processes of urbanization in non-Western, non-industrial, 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 individul 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.

169-5. 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.

Anthropology

170. Archaeology of North America (3) |

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 100B. Native cultures and the role of environmental and historical factors in North America.

172A. Southwestern Prehistory (3) |

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. (Formerly numbered Anthropology 173B.)

174. Prehistoric Archaeology of Europe (3) II

Prerequisite: Anthropology 1 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) |

Prerequisite: Anthropology 1.

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 pre-historic, 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.

180. Preclassic Cultures of Mesoamerica (3) II

Prerequisite: Anthropology 1 or 100B.

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) |

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) |

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) |

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.

Anthropology

188A-188B. Archaeological Laboratory Methods (3-3) I, II

Two lectures and three hours of laboratory.

Prerequisites: 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 in Arctic Archaeology (3) |

Prerequisites: Anthropology 1 and 103.

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.

A chronological review of prehistoric cultural development and human ecology in East Asia.

191. Chinese Society (3) II

Prerequisite: Anthropology 2.

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.

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.

197. Investigation and Report (3) I, II

Prerequisite: Consent of instructor.

Analysis of special topics in anthropology and preparation of reports on the results of the study.

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

Individual Study. Six units maximum credit. 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)

Prerequisites: 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 socio-cultural change.

204. Seminar in Linguistics (3)

Prerequisites: Anthropology 120 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)

Prerequisites: Twelve units of upper division credit 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)

Prerequisites: Twelve units of upper division credit 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 120 and 124.

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 units of upper division credit 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 integraton of a wide variety of human societies.

255. Culture and Society in the Nahua Area (3)

Prerequisites: Anthropology 1 or 2 and 12 units of upper division credit 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.

Anthropology

256. Cultures and Societies in Southern Meso-America and Central America (3)

Prerequisites: Anthropology 1 or 2 and 12 units of upper division credit 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 units of upper division credit 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)

Prerequisities: Twelve units of upper division credit in anthropology. Analysis and comparison of native categories, classifications, and bodies of systematic knowledge as demonstrated in preliterate and literate societies.

267. Contemporary Theory in Cultural Anthropology (3)

Prerequisite: Twelve units of upper division credit in anthropology.

Contemporary theoretical developments in cultural anthropology: an examination of proposed conceptual frameworks, methodologies, hypotheses, and theories. An analysis of recent literature, with evaluation oriented toward significance for research.

286. South Asian Society (3)

Prerequisite: Anthropology 186 or substantial background in upper division courses in the social sciences dealing with South Asia.

The structure and dynamics of both rural and urban aspects of contemporary South Asian society and culture. Examination of their constituent elements and process, e.g., social organization, religion, acculturation, and rural-urban differences.

297. Research (3)

Prerequisite: Advancement to candidacy. Independent investigation in the general field of the thesis.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study directed toward the preparation of a paper upon a specific problem. Six units maximum credit.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Emphasis in Art History

Preparation for the major. Anthropology 1; Art 50A-50B, 52A-52B; French or German, or a reading knowledge of either language (13 units).

Major. A minimum of 24 upper division units to include Art 151, 153, 154, 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 85 of this catalog.

The major in art may be planned with an emphasis on art education, crafts, environmental design, graphic communication, painting and printmaking or sculpture. The programs in environmental design and in graphic communication have a preprofessional orientation supplemented by a strong liberal arts background. Environmental design can lead to interior design or city planning. Graphic communication prepares the student for the areas of environmental graphics, art direction, visual design for the contemporary media of advertising, fashion illustration or editorial illustration. The areas of painting and printmaking, and sculpture prepare students for professional attitudes toward the fine arts and the continuance of their educational experience in graduate schools with the goal of teaching at institutions of higher learning. The preprofessional program in art education prepares the student for teaching in either elementary or secondary schools. The crafts program can be developed to specialize in ceramics, furniture or industrial design, jewelry, textile design and weaving.

A minor is not required with this major. However, in graphic communication an English minor is recommended.

Emphasis in Crafts

Preparation for the major. Art 1A, 1B, 2A, 2B, 50A, 50B, 61, and six units of art electives. (25 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. (25 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, 193A-193B, 194A-194B, 196A-196B, and 197.

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: Bigelow, Dirks, Fisch, Higgins, Hopkins, Lingren (Chairman), Longenecker, Swiggett, Tanzer, Wallace

Associate Professors: Baker, K., Baxter, R., Berg, Covington, Hunter, Miller, A., Rogers, J.

Assistant Professors: Austin, Bowne, Childress, Frick, Groover, Hodge, L., Moaney, Orth, Papworth, Peterson, T., Ray

Lecturers: Gondek

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, with specialization in both elementary and secondary teaching. Teaching majors in fine arts, fine arts and humanities, and fine arts and social sciences, requiring a concentration in art, are also offered. See "School of Education" in the catalog section Professional Schools: Courses and Curricula.

Teaching minor in art, with specialization in secondary teaching.

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 85 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 1A. (31 units.)

Major. A minimum of 24 upper division units 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, 120A–120B, 153, 154, 155A, 155B, and 199.

Emphasis in Environmental Design

Preparation for the major. Art 1A, 1B, 2A, 2B, 8, 13, 33A, 33B, 50A, 50B, 95A. (31 units.) Recommended: Art 14A, 17A, 18A, 19A, 61, 80A.

Major. A minimum of 24 upper division units in art to include Art 156A; three additional units of art history; and 18 units selected from 135A-135B, 156B, 195A, 195B, 195C, 195D; and three units of electives.

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. (25 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, 136A, 136B.

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. (25 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.

Emphasis in Art Education

This emphasis is available only to students who have been admitted to and continue in Teacher Education to time of graduation.

Elementary Teaching

Preparation for the major. Art 1A, 1B, 2A, 2B, 50A, 50B, 61; and six units of art electives. (25 units.)

Major. A minimum of 24 upper division units in art to include 15 units selected from one emphasis area in consultation with the art education adviser; Art 105 or 175; 156A, and three units of art history.

Secondary Teaching

Preparation for the major. Art 1A, 1B, 2A, 2B, 50A, 50B, 61; and six units of electives. (25 units.)

Major. A minimum of 24 upper division units in art to include Art 156A; three units of art history; and eighteen units from Group I or Group II in consultation with the art education adviser.

Group I. Fifteen units of one major emphasis area, including Art 175 and three units of one other major emphasis area. (18 units.)

Group II. Six units of drawing and painting; six units of crafts or sculpture; and three units of graphic communication or environmental design; and Art 175. (18 units.)

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 Standard 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.

Specialization in Elementary Teaching

Requirements are the same as the requirements for the degree with an emphasis in art education for elementary teaching as outlined above.

Specialization in Secondary Teaching

Requirements are the same as the requirements for the degree with an emphasis in art education for secondary teaching as outlined above. In addition, students must complete, in their postgraduate year, a minimum of six units of upper division or graduate art electives including Art 222.

Art Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

The teaching minor in art for secondary teaching consists of the following: In the lower division, Art 1A, 1B, 2A, 2B, 50A, 50B; and in the upper division twelve units in one emphasis area including Art 156A. (28 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.

170

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

One lecture and six hours of laboratory.

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.

7. Visual Design (3) I, II

Six hours.

Prerequisites: Art 2B and 14A.

The organizational concepts of design applied to environmental graphics and merchandising display.

8. The House and Its Environment (3) I, II

Architecture, interior design, landscape and city planning for forming man's physical and aesthetic environment.

13. Furniture Design (3) I, II

Six hours.

Prerequisite: Art 2A. Recommended: Industrial Arts 5. Study of the principles of design through the making of furniture.

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

Six hours.

Prerequisites: Art 1A and 2B.

Creative projects exploring the inter-relation 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.

Prerequisites: Art 1A and 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-build 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

Prerequisite: Art 17A. Creative experimentation with sculptural forms from the human figure.

33A-33B. Visual Presentation (3-3) I, II

Six hours.

Prerequisites: Art 1B, 2A; 33A is prerequisite to 33B, and Art 18A 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 (2) 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 (2) I, II

The period from the Renaissance through the modern school treated in the same manner as in 50A.

52A. Survey of Japanese Art (3) II

A study of the arts of Japan.

Art

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

61. Design in Crafts (3) I, II

Six hours. Prerequisite: Art 2A. Visual and structural form in crafts.

70. Beginning Jewelry Design (3) I, II

Six hours. Prerequisites: Art 2B and 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. General Interior Design Theory (3) I, II

Six hours.

Prerequisite: Art 95A.

Concepts of space in architecture, landscape and interior design. Relationship of furniture, fabrics, light, color and art.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 kinaesthetic 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; 106A is prerequisite to 106B. Woodcut, wood engraving, gesso cut and linoleum.

107. Contemporary Environmental Graphics (3) I, II

Six hours.

Prerequisites: Arts 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.

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.

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Prerequisites: Art 1A, 1B, 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.

175

113A-113B. Advanced Furniture Design (3-3) I, II

Six hours. Total credit in Art 13, 113A, 113B, 113C, and 113D limited to nine units.

Prerequisite: Art 13. Recommended: Industrial Arts 5. Art 113A is prerequisite to 113B.

Principles of design through the making of furniture.

113C-113D. Advanced Furniture Design (3-3) I, II

Six hours. Total credit in Art 13, 113A, 113B, 113C, and 113D limited to nine units.

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.

Prerequisites: 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 or 16B. 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.

117C. Advanced Sculpture (3) I, II

Six hours.

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. Prerequisites: 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. Re-examination 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.

Art

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.

126D-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 upon 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, 50B; Art 135A is prerequisite to 135B and 135B to 135C. Environmental arts. Semester I: From earliest times to the 15th Century. Semester II: 15th to the 19th Century. Semester III: 19th and 20th Centuries.

136A. Lithography Printmaking (3) I, II

Six hours.

Prerequisites: Art 2A, 15A. Art 100A and 115A are recommended. Creative lithography—stone and plate planographic process. Emphasis upon fine print quality and technical development.

136B. Lithography Printmaking (3)

Six hours.

Prerequisite: Art 136A.

Advanced creative lithography-emphasis upon 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 upon fine print quality, in color process, and color technology unique to this medium.

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.

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.



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Art

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.

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.

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. Prerequisites: 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 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.

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.

Prerequisites: Art 80A and 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. Non Woven Textile Construction (3) I, II

Six hours. Prerequisites: Art 2B and 61. Textile structures with an emphasis on non loom techniques.

182. Textile Design (3)

Six hours.

Prerequisites: Art 2B and 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.

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 1B, 2A, 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 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. Interior Design (3) I, II

Six hours.

Prerequisites: Art 95A and 95B.

Survey, analysis and design methods concerning problems of interior design of moderate scope, stressing the visual concept as part of the total planning process.

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. Economics of Interior Design (3) I, II

Six hours.

Prerequisite: Art 195B,

Techniques and analyses of specification writing, supervision and budget studies of interior design and its application to various projects.

195D. Advanced Interior Design (3) I, II

Six hours.

Prerequisite: Art 195C.

The complete conception and execution of all stages of a full-scale interior design project.

196A-196B. Visual Communication Media (3-3) I, II

Six hours.

Prerequisite: Art 14B. 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.

197. Exploration in Visual Imagery (3)

Six hours.

Prerequisite: Fifteen units of art. Investigation of experimental and technical reproductive media.

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 units in upper division 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. Six units maximum credit. Prerequisite: Consent of instructor.

Graduate Courses

206A-206B. Printmaking (1-3)

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)

Prerequisite: Art 114D

Advanced individual study in graphic design. Maximum credit six units applicable on a master's degree.

216A-216B. Painting (1-3)

Prerequisites: Art 112A, 112B, 116A, and 116B

Aesthetic organization of selected visual subject matter in the medium of colors in oils. Maximum credit six units applicable on a master's degree.

217A-217B. Sculpture (1-3)

Prerequisites: Art 117A, 117B, 117C, 117D.

Aesthetic organization of selected subject matter in the media of sculpture. Maximum credit six units applicable on a master's degree.

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219A-219B. Crafts (1-3)

Prerequisites: Six units completed in upper division courses in sculpture or ceramics or printmaking or a combination of these courses.

Advanced creative work in selected craft media. Maximum credit six units applicable on a master's degree.

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 units of upper division 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 degree.

290. Bibliography and Research Methods (2)

Introduction to research methods and materials, compiling of a specialized bibliography, preparatory to writing a master's thesis.

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. No more than six units of 291 are applicable to a master's degree.

- A. Seminar in Painting
- B. Seminar in Sculpture
- C. Seminar in Printmaking
- D. Seminar in Ceramics
- E. Seminar in Crafts
- F. Seminar in Graphic Communication
- G. Seminar in Environmental Design

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 50A 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)

Prerequisites: Art 50A, 50B and 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 units of upper division work 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)

Individual study. Six units maximum credit.

Prerequisite: Consent of the staff; to be arranged with department chairman and the instructor.

299. Thesis or Project (3)

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Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.



Astronomy

Astronomy In the College of Sciences

Faculty

Emeritus: Huffer, Smith, C. Professors: Nelson, B. (Chairman), Schopp Associate Professors: Daub, Young, A. Assistant Professors: Angione, Talbert

Offered by the Department

Master of Science degree in astronomy.

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

Astronomy Major

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

All candidates for a degree in liberal arts and sciences must complete graduation requirements listed on page 85 of this catalog.

Preparation for the major. Astronomy 1, 9; and 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, 110, 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 85 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, 110, 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. Recommended: Mathematics 7, 135A, 135B, Engineering 188.

Astronomy Minor

The minor in astronomy consists of a minimum of 15 units in astronomy, nine of which must be upper division.

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 co-ordinates, and descriptive observations of celestial objects with telescope,

12. Elementary Navigation (3) |

Three hours of laboratory.

Recommended prerequisites: Astronomy 1 and 9.

Compass corrections, time, line of position, use of celestial co-ordinates, 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.

50. Physics of the Solar System (3) |

Prerequisites: Credit or concurrent registration in Mathematics 50 and Physics 4A.

A mathematical treatment of the structure and composition of the Solar System. The physical nature of the sun, planets, satellites, comets, and meteors. Not open to students with credit in Astronomy 1.

51. Physics of the Stellar System (3) II

Prerequisites: Mathematics 50 and Physics 4A.

Application of mathematical and physical principles to stellar astronomy and the universe.

99. Experimental Topics (2-4)

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Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

Astronomy

Upper Division Courses

103. Astronomical Optics (3) II

Two lectures and three hours of laboratory.

Prerequisites: Astronomy 50, or 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) |

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: Physics 4C and Astronomy 1. 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.

150. Introduction to Variable Stars and Peculiar Stars (3) II

Prerequisite: Astronomy 104A or 112A.

A study of variable stars: classification, periods, relation to other stars, methods of observation, and results; also a study of stars with unusual features in their spectra.

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

Refer to Honors Program.

170. Astrophysical Spectroscopy (3)

Prerequisite: 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.

Astronomy

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 material for a total of six units, upon approval of instructor.

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. Six units maximum credit. 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.

Astronomy

240. Interstellar Matter (3)

Prerequisites: Mathematics 119, Astronomy 112B.

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)

Prerequisites: Astronomy 112A, Physics 101 and 112.

Emission and absorption of radiation, continuous spectra, spectral lines, modal stellar atmosphere calculations, and non-L.T.E. problems.

280. Orbit Theory and Computation (3)

Prerequisite: Astronomy 180.

A study of the derivation of the methods of determining orbits of comets, asteroids, and planets. The computation of an orbit will be required.

297. Research (1-3)

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)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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

Faculty

Professors: Coryell, Karr (Chairman)

Associate Professors: Baldock, Davis R.

Assistant Professors: Dietz, J., Dowhower, Gilbert, C., Templeton, Zampese Instructor Vezie

Offered by the Department

Courses in Athletics. Major or minor work is not offered.

Lower Division Courses

99. Experimental Topics (2-4) I, II

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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:

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

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.

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Athletics

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) I Golf (2) J Rowing (2) K Tennis (2) L Track (3) M Volleyball (2)

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

Individual study. Six units maximum credit. Prerequisite: Consent of instructor.

Biology

In the College of Sciences

Faculty

Professors: Baer, Brandt, Brookes, Cooper, Cox, G., Farris, Flittner, Ford, Hazen (Chairman), Johnson, McBlair, Miller, Neel, Parsons, Ratty, Rinehard, Shepard, Sloan, Taylor, K.

Associate Professors: Awbrey, Clark, M. E., Collier, B., Daugherty, Schapiro, Thwaites

Assistant Professors: Barnett, Coulombe, Davis, C., Diehl, Ebert, Futch, Hurlbert, Kleinbergs, Melchior, Paolini, Timin, Zedler

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.

Teaching major in the biological sciences, with specialization in secondary teaching, requiring an undergraduate major in one of the biological sciences.

Teaching minor in biology, with specialization in both elementary and secondary teaching.

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 85 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. (35 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, 191 or 195; and electives from natural science selected with the approval of the adviser.

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Biology

Biology Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 85 of this catalog. In addition students must complete twelve 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 consultation with the Department of Biology.

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 Physics 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, 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 85 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 Physics 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, 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.

Biological Sciences Major

For the Standard Teaching Credential

Specialization in Secondary Teaching

The teaching major for secondary teaching requires an undergraduate major in one of the biological sciences: biology, botany, microbiology, or zoology. All elective courses in the major must have prior approval by one of the biological sciences advisers for teaching programs in the biological sciences. **Postgraduate year.** A minimum of six units from courses acceptable for graduate credit on a master's degree program in the biological sciences or the teaching minor.

Biology Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in biology for elementary teaching consists of Chemistry 1A-1B or 2A-2B plus at least 20 units in the biological sciences to include Biology 1 and 2. Electives in the biological sciences must be chosen in consultation with the departmental adviser for teaching programs.

Specialization in Secondary Teaching

The minor in biology for secondary teaching consists of Chemistry 1A–1B, and 11 or 12, plus at least 20 units in the biological sciences to include, in the lower division, Biology 1, 2, and 15; In the upper division, Biology 101, 110, and 155.

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-2B.

Functions of the human body; emphasis on the circulatory, muscular, and nervous systems. Not open for credit to students with credit for Biology 22.

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.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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. Cellular Physiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1, 2, and 15; Chemistry 1A, 1B, and 11 or 12; Physics 2A, 2B, 3A, 3B or 4A-4B-4C.

Physiological processes at the cellular level.

103. General Cytology (4) II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1, 2, and 15; and Chemistry 1A and 1B.

The structure and function of cells and cell inclusions of plants and animals, including the chemical and physical properties of protoplasm and cytological methods.

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 intructor.

Extended field studies of the flora, fauna, and biotic communities of major natural regions of western North America. May be repeated with new content to a maximum of six units.

110. Ecology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1, 2, and 15; and Chemistry 1A and 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 1, 2, and 15; and Chemistry 1A and 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, Chemistry 1B, Physics 2.

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 theory and techniques necessary for a systems approach to ecology, including computer programming and topics in applied mathematics useful in systems analysis.

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.)

Biology

142A-142B. Comparative Animal Physiology (4-4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 101 and consent of instructor.

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

Prerequisites: 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 enrollment 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 and Physics 2A-2B, 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 1, 2, and 15; Chemistry 1A and 1B; Physics 2A, 2B, 3A and 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.

Prerequisites: Biology 1, 2, and 15.

Prinicples 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) |

Two lectures and six hours of laboratory.

Prerequisites: 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) 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.

159. Human Heredity (3) I, II

Prerequisite: Biology 1.

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.

160. Experimental Evolution (3) |

Two lectures and three hours of laboratory.

Prerequisite: Biology 155.

The theories of evolution and speciation and the methods of study of modern problems.

161. History of Biology (3) I, II

Prerequisite: A college course in biology.

Lectures and reports tracing biological scientific development, with emphasis on the influence of personalities and trends of the times. Not nore 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. Microbiology 101 is recommended. 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.

167A-167B. Biology for Teachers (4-4)

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. Population Genetics (3) II

Two lectures and three hours of laboratory. Prerequisites: Biology 15 and 155, Mathematics 22 or 50. Discontinuous and continuous variation in natural populations.

170. Contemporary Problems in Biology (1) S

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. May be repeated for a total of 3 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.

175. Statistical Methods in Biology (3) |

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 enrollment in Biology 182. The characterization of the immunoglobulins and the measurement of the antigen-antibody reaction.

190. Senior Investigation and Report in Physiology (2) I, II

Prerequisites: Biology 101, senior standing and consent of instructor. Investigation and reports 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 reports 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 reports 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 Division of the Life Sciences. Individual and original investigations in biology; class reports. Four units maximum credit for Biology 198 or a combination of this course with Microbiology or Zoology 198.

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

Individual study. Six units maximum credit.

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 Biology 156. Regulation of genetic information in developing systems.

222. Morphogenesis (3)

Prerequisites: Biology 101 and Biology 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.

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 labotory.

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.

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 or Botany 107.

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 Biology 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 on physiological measurements. Maximum credit four units applicable on a master's degree.

265. Molecular Biophysics (3)

Prerequisites: Biology 101, Mathematics 21 and 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)

Research in one of the fields of biology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis or Project (3)

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: Gaelup, Wedberg (Chairman) Associate Professors: Alexander, Preston Assistant Professors: Barilotti, Carmichael, Rayle

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.

Teaching major in the biological sciences, with specialization in secondary teaching, requiring an undergraduate major in one of the biological sciences.

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 85 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 101, 110, and 155; Botany 100 or 101 or 102 or 103, and 190A–190B. Botany 114, 130, and 140 and Microbiology 101 are recommended.

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 85 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 ør 12; Mathematics 21 or 40; and Physics 1A–1B or 2A–2B and 3A–3B. (32 units.)

Recommended: German or French or Spanish; Geology 1A-1B or 2 and 3.

Major. A minimum of 36 upper division units in the biological sciences to include Biology 101, 110, and 155; Botany 100 or 101 or 102 or 103, 114, and

Botany

190A-190B; Microbiology 101; and nine units of electives. Botany 130 and 140 are recommended as electives.

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.

Biological Sciences Major

For the Standard Teaching Credential

Specialization in Secondary Teaching

The teaching major for secondary teaching requires an undergraduate major in one of the biological sciences: biology, botany, microbiology, or zoology. All elective courses in the major must have prior approval by the departmental adviser for biological sciences teaching programs.

Postgraduate Year. A minimum of six units from courses acceptable for graduate credit on a master's degree program in the biological sciences. Courses must have approval of the adviser for biology teaching programs. (Six units of graduate course work toward completion of a minor may be substituted for this requirement.)

Lower Division Courses

1. Plants and Man (3) I, II

Basic structure and function of plants with emphasis on the interrelationships of plants and man.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153 Limit of nine units applicable 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

Two lectures and six hours of laboratory. Prerequisite: Biology 1 and 2.

Primarily for majors in the biological sciences. Structure, physiology, reproduction and 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.

112. Cultivated Trees and Shrubs (3) |

One lecture and six hours of laboratory and field work.

Prerequisites: Biology 1 and 2. Botany 114 is recommended.

Identification of the common cultivated trees and shrubs of the San Diego region. Trips to local parks and private gardens.

114. Systematic Botany (4) II

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2; and either 110 or 155. Botany 103 recommended.

Kinds, relationships, systematic arrangement, and geographical distribution of vascular plants; collection and identification.

118. Plant Study of the California Deserts (3)

Formerly X-119. Offered in Extension only. One lecture and six hours laboratory. Field trips arranged. Flowering plants of the desert region.

119. 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) |

Two lectures and six hours of laboratory.

Prerequisites: Biology 1 and 2. Botany 102 recommended.

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, 15, 101; and Chemistry 1A and 1B.

The activities of plants, including food manufacture, absorption, conduction, transportation, respiration, growth and movement.

Botany

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.

Prerequisite: 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. Botany 100 recommended.

The arrangement of structural elements within plant organs, with emphasis on cell and tissue types.

162. Agricultural Botany (2) |

Field trips to be arranged.

Prerequisites: Biology 1 and 2. Botany 100 or Zoology 121 recommended. 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) |

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) |

One discussion peiod 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.

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

Individual study. Six units maximum credit.

Prerequisites: Fifteen units in botany 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 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.

214. Seminar in Systematic Botany (2)

Prerequisite: Botany 114.

Current problems in the systematics of 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.

240. Seminar in Plant Anatomy (2)

Prerequisite: Botany 140.

Study of recent advances in the anatomy of vascular plants. Maximum credit four units applicable on a master's degree.

272. Seminar in Palynology (2)

Prerequisite: Botany 172.

Study of recent advances in palynology. Maximum credit four units applicable on a master's degree.

297. Research (1-3)

Research in one of the fields of botany. Maximum credit six units applicable on a master's degree.

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Botany

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis or Project (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.



Business Administration

In The School of Business Administration A member of the American Association of Collegiate **Schools of Business**

Accounting Department

Emeritus: Brown, E. P., Wright

Professors: Brodshatzer, Ferrel, Harned (Chairman), Odmark, Snudden Associate Professors: Bailey, Dodds, Lightner, Williamson

Finance Department

Professors: Chapman, Hippaka, Hungate (Dean), Nye, Reznikoff, Wijnholds Associate Professors: Block, Fisher, H., Neuberger, Reints (Chairman) Assistant Professors: Fisher, R., Hird, Hutchins, Potter, Schmier, Shutt, Smith, C., Vandenberg

Lecturer: Cowan

Information Systems Department

Emeritus: Gibson

Professors: Archer, Crawford (Associate Dean), Langenbach (Chairman) LeBarron, Straub

Assistant Professors: Harriff, Mahoney, Spaulding, Sponseller, Stenvall, Tilaro Lecturer: Richardson

Management Department

Emeritus: Torbert

Professors: Atchison (Chairman), Belcher, Hampton, Peters, Pierson, Srbich Associate Professors: Galbraith, Ghorpade, Mitton, Sherrard

Assistant Professors: Lamm, Price, Steinhorst

Marketing Department

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Emeritus: De Julien

Professors: Barber (Asst. Dean for Graduate Studies), Darley (Chairman), Hale, Sharkey, Wotruba

Associate Professors: Akers, Haas, Lindgren, McFall

Assistant Professors: Brooks, Soldner, Vanier

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.)

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 with specialization in secondary teaching. (Described in the section on the School of Business Administration.)
- Teaching minor in business with specialization in secondary teaching. (Described in the section on the School of Business Administration.)

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) I, II

Four hours.

Fundamentals of typewriting. Development of personal-use skills. Not open to students with credit for high school typewriting.

72. Advanced Typewriting (2) I, II

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) I, II

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) I

Prerequisites: Business Administration 75A and 75B. Development of speed in writing and transcription.

80. Written Communications in Business (3) I, II

Prerequisite: English 5.

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

Two lectures and three hours of laboratory.

Introduction to concepts of information processing and computer programming.

84. Systems Programming (3)

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 153. Limit of nine units applicable 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

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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.

106. Income Tax Accounting (4) I, II

Prerequisites: Business Administration 1A and 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; procedues for verification of financial statements; auditor's reports.

114. Accounting Systems (3) I, II

Prerequisite: 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 9 units in upper division 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.

121. Property and Casualty Insurance (3) II

Prerequisite: Business Administration 120.

All standard forms of insurance except life; includes automobile, liability, workmen's compensation and disability, fire, marine, and inland marine. Legal interpretation of contract coverages; underwriting problems, marketing of insurance, government supervision and control.

122. Social Insurance (3) II

Prerequisites: Economics 1A and 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.

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 upon 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. Fundmentals 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.

128. Investments (3) I, II

Prerequisite: Business Administration 126.

Investment principles and practices with emphasis upon 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.

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) |, ||

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.

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. Analvsis of case studies.

Production and Inventory Control (3) 138.

Prerequisites: Business Administration 135 and 190.

Objectives and problems of production and inventory control systems. Methodology for the control of production-inventory systems where demand is assumed known over the planning horizon, and systems where demand is assumed known only statistically.

Employee Relations (3) I, II 140.

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.

Employee Relations Laboratory (1) I, II 141.

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Business Administration 140 or Political Science 144, or consent of instructor.

Investigation of employee relations practices and policies. Practice in interviewing, role playing, or in conducting field studies and related personnel research.

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; impacts of technology on management and workers, resistance to change; human needs and the imperatives of management.

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 over-all management viewpoint.

150. Marketing Principles (3) I, II

Prerequisites: Economics 1A and 1B.

Marketing functions, activities of producers, wholesalers, retailers and other middlemen; chanels of distribution; integration of marketing activities; price policies; government regulation.

151. Marketing Management (3) I, II

Prerequisites: Business Administration 150 and 190.

The managerial aspects of marketing. The development of marketing strategy and plans with the aid of social science concepts. Integrates the specific elements of the marketing function.

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 under changing conditions.

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; advertising campaigns.

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.

Prerequisites: 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.

161. Traffic Management (3) |

Prerequisites: Economics 1A and 1B or 103A and 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

Prerequisites: 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.

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170. Real Estate Principles and Practices (3) I, II

Prerequisites: Economics 1A and 1B or 103A and 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 30A, 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.

173. Real Estate Finance (3) I, II

Prerequisites: Economics 1A, 1B, (or 103A, 103B), Business Administration 30A, 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. 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 subject matter to a total of 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) II

Prerequisites: Business Administration 72, 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 12. 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: Required lower division courses of any business administration major or minor.

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

Prerequisites: Business Administration 84 and 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 Administration 186.)

189. Scope and Function of Business Education (3) |

Philosophy, scope, and functions of business education; analysis and development of curricula; instructional foundations of basic business subjects.

190. Quantitative Analysis for Business (3) I, II

Prerequisites: Mathematics 20; Mathematics 12 or Economics 2. Quantitative methods applied to business decision making.

191. Quantitative Methods (3)

Prerequisite: Business Administration 190.

A study of various management science techniques such as simulation, transportation and simpler 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 and nonlinear programs.

Business Administration

197. Business Forecasting (3) I, II

Prerequisite: Business Administration 126.

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 to a maximum of six units.

A comprehensive and an 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. Six units maximum credit. 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 accountings; accounting as a data processing system; measuremment 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.

2018. 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: Measures of central tendency and variation, sampling and various statistical tests such as analysis of variance, F, t, and X² 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 upon 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 decisions. 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: B.A. 202A.

Fundamentals of computers, problem-oriented computer language, flowcharting logic and techniques, analysis of the synthesis of computer-based systems.

210. Theory and Analysis of Financial Statements (3)

Prerequisite: Bursiness 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 affilated companies; concepts of fund accouting; 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 investment decisions.

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, boycotts and injunctions.

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.

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.

227. Seminar in Quantitative Analysis for Financial Decisions (3)

Prerequisites: Business Administration 202B, 205 and 209.

Ouantitative 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. Production and Inventory Control (3)

Prerequisite: Business Administration 230.

The design and analysis of single and multi-product control systems. Methods for the control of production-inventory systems where demand is assumed known either over the planning horizon or only statistically.

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 Models (3)

Prerequisites: Business Administration 202B and 209.

Decision-making under conditions of certainty. Applications of algebra (Boolean, ordinary, and matrix), analytic geometry, trigonometry, and calculus to business problems. The use of network analysis; linear, integer, and dynamic

Business Administration

programming; sequencing and scheduling models, and sensitivity analysis in decision-making.

237. Operations Research: Probabilistic Models (3)

Prerequisites: Business Administration 202B and 209.

Decision-making under conditions of uncertainty. The application of queuing theory, Markov chains, conditional and joint probability, Bayes' formula, and gaming theory to decision making.

238. Computer Implemented Optimum-Seeking Methods (3)

Prerequisite: Business Administration 236.

Programming and simulation techniques for analysis of interlocking decision problems with the use of the computer. Derivation of man, machine, and system models. Design of steady state and dynamic stochastic models.

239. Seminar in Management Science (3)

Prerequisite: Business Administration 236.

Analysis by quantitive techniques for managerial planning and decision-making. Applications of operations research and other concepts to industrial situations. (Formerly numbered and entitled Business Administration 239B.)

240. Seminar in Manpower Planning and Staffing (3)

Prerequisites: 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)

Prerequisites: BA 201-B, or any one of Public Administration 241, Economics 250, Psychology 220, Sociology 220.

Interaction of unions and business organizations with particular emphasis upon collective bargaining. Effects upon management and society. Trends in collective bargaining and in the organization of employees.

242. Seminar in Compensation (3)

Prerequisites: Business Administration 201-B, or any one of 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 upon organizations and individuals.

243. Seminar in Organizational Development (3)

Prerequisites: BA 201-B, or any one of 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)

Prerequisites: BA 201-B or any 6 units of courses 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 Marketing Theory (3)

Prerequisite: Business Administration 203.

Marketing theory and contributions of economics and behavioral sciences to marketing thought.

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 upon international marketing systems and the decision-making process of multinational marketing operations.

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.

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.

Business Administration

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 222.

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 social policy.

263. Seminar in Real Estate Finance (3)

Prerequisite: Business Administration 260.

Theories and factors governing the financial functions of lenders, borrowers, govermental 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. Seminar in Information Storage and Retrieval (3)

Prerequisites: Business Administration 202A and 209.

Study of the theory and techniques of information storage and retrieval, to include the study of optimization and randomization of data storage.

274. Seminar in Advanced Computer Application (3)

Prerequisites: Business Administration 202A and 209.

Analysis, design, and coding of control and executive routines. Analysis of methods for using library routines.

278. Seminar in Management of Information Systems (3)

Prerequisite: Business Administration 273.

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, 273 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)

Prerequisite: Advancement to candidacy and consent of instructor.

Building and maintaining enterprises in our society; determining objectives; developing policies and plans for achievement; measuring and controlling organizational activities; reappraising objectives and policies on the basis of new developments.

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.

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.

297. Research (3)

Prerequisite: Advancement to candidacy. Research in one of the fields of Business Administration.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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, Rowe

Professors: Abbott, Grubbs, Harrington, Hellberg, Isensee, Jensen, Jones, Landis, Malik, O'Neal, Richardson, Ring, Robinson, Sharts, Spangler, Stewart, Wadsworth (Chairman), Walba, Wick, Woodson

Associate Professors: Bennett, Mathewson, Roeder

Assistant Professors: Coffey, Malley

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.

Teaching major in chemistry, with specialization in both elementary and secondary teaching.

Teaching minor in chemistry, with specialization in both elementary and secondary teaching.

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 Pre-medical, Pre-dental, or Teacher Education curriculum.

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Chemistry

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, 111, 112, 113, 116A, 127A, 155, one unit of 198, and 11 units of upper division electives in chemistry or in related subjects with approval of the department.

Foreign language requirement. German 8A or Russian 8A.

OUTLINE FOR THE B.S. DEGREE AND CERTIFICATE

	Un	its		Un	uits
	1st	2nd		1st	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	1/2	1/2	German 1 or Russian 1		4
			*Physical Activities	1/2	1/2
	161/2	171/2			
				171/2	171/2
	Units			U	nits
	1st	2nd		Ist	2nd
Third year	Sem	Sem.	Fourth year	Sem.	Sem.
Chemistry 110A-110B	. 3	3	Chemistry 111	3	-
Chemistry 155	-	4	Chemistry 111	3	-
German 2, 8A, or			Chemistry 198	. 1	-
Russian 2, 8A	. 4	2	Chemistry 127A	. 3	11- 11
‡American Institutions	. 3	3	Chemistry Electives	. 5	6
The second second second second			STAR SHARES SHARES		

•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.

If this requirement is met by examination the appropriate number of units should be added general electives. Premedical and predental students will also take Biology 2 and decrease general elective units by 1.

§Biology 1 *Humanities	3	- General Electives		-	7
	3	3	15	13	
	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, 111, 112, 113, 127A, 155, one unit of 198; and two units of upper division electives in chemistry to be chosen from Chemistry 116A, 118, 127B, 131, 154.

Foreign language requirement. German 8A or Russian 8A.

OUTLINE FOR A.B. DEGREE AND CERTIFICATE

	Un	its		UI	nts	
	Ist	2nd		1st	2nd	
First year	Sem.	Sem.	Second year	Sem.	Sem.	
Chemistry 14-1B	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	1/2	1/2	German 1 or Russian 1	-	4	
Thysical recurriconnin			*Physical Activities	1/2	2 1/2	
	161/2	171/2			1 1 1 1	
				17%	2 17/2	
	Units			Units		
	let	2nd		Ist	2nd	
Thind was	Sem	Sem.F	ourth vear	Sem.	Sem.	
Chamistry 110A 110B	3	3	Chemistry 111	3	-	
Chemistry 110A-110D	_	4	Chemistry 198	1	-	
Common 2 84 or			Chemistry 127A	3	11'- L	
German 2, 8A, or	4	2	Chemistry Electives	2	-	
Russian 2, 6A	3	3	General Electives	-	15	
Pielery 1	3	_		3		
*Uumanities	3	3		9	15	
numanities						
	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. 11f this requirement is met by examination the appropriate number of units should be added to general electives. \$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 and predental curriculum or for secondary school teaching. 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 junior colleges. Application for admission to the plan must be made to the department chairman upon achieving junior class standing. All transfer students with upper division standing must apply before the second semester of work at San Diego State College. With an appropriate choice of electives, graduates can meet the requirements for admission to medical, dental, and pharmaceutical schools. With a fifth year of graduate work, requirements for the secondary teaching credential can be met.

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. (45 units.)

Major. A minimum of 24 upper division units in chemistry to include Chemistry 109A, B, C (or 110A-110B, 111), 112, 155 (or 150), and eight units of upper division electives in chemistry. Chemistry 127A is recommended for all teaching majors. Chemistry 115A-115B or 116A-116B is recommended for all pre-medical students.

Minor. A minor in biology or zoology is expected for pre-professional students. The minor required for a secondary school credential may be completed in the fifth year for teaching credential candidates.

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 85 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 on 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. (32 units.)

Major. A minimum of 24 upper division units in Chemistry to include Chemistry 109A-109B, 109C, 112, 150; and eight units of upper division electives in chemistry.

Chemistry Minor

The minor in chemistry consists of Chemistry 1A-1B, 4 or 5, 12, and six upper division units in chemistry (24 units).

Chemistry Major

For the Standard Teaching Credential

All candidates for a credential must complete all other requirements for the credential, as outlined in the section of this catalog on the School of Education.

The major in chemistry for the standard teaching credential, with specialization in either elementary or secondary teaching, requires an undergraduate major in chemistry. All courses for the teaching major must be approved by the chemistry adviser for teaching programs. In addition, candidates for the credential with a specialization in secondary teaching must complete, in the postgraduate year, a minimum of six units of graduate work in chemistry.

Chemistry Minor

For the Standard Teaching Credential

The minor in chemistry for the standard teaching credential, with specialization in either elementary or secondary teaching, consists of not less than 20 units in chemistry, six units of which must be in upper division courses. If the major for secondary teaching is non-academic, at least 12 upper division units of chemistry must be taken. All courses must be approved by the chemistry adviser for teaching programs.

Lower Division Courses

1A-1B. General Chemistry (5-5) I, II

Three lectures and six hours of laboratory.

Prerequisites: High school chemistry and two years of college preparatory mathematics. Recommended: High school physics and two years additional mathematics.

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.

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 2A or 1A.

Introduction to the compounds of carbon including both aliphatic and aromatic substances. Not open to students with credit in Chemistry 1B or 1E. 235

3. Introductory Biochemistry (3) I, II

Formerly Chemistry of Nutrition.

Three lectures with demonstrations. Prerequisites: Chemistry 2A-2B.

Fundamental principles of the chemistry of living processes. This course intended primarily for majors in home economics, nursing, and related fields.

4. Elementary Quantitative Analysis (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Chemistry 1B or 2B.

Fundamentals of volumetric and gravimetric analysis. Not applicable to the B.S. and the A.B. degree and certificate 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, echosphere, energy balances, chemical pollution, biodegradation, water purification, and sewage.

Semester II: Natural products such as steriods, alkaloids, and terpenes; biochemistry; catalysis and enzymes; thermochemistry and metals. Environments 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: An outstanding record in high school chemistry, physics, and mathematics, accompanied by superior achievement on the College Aptitude Test and the college Mathematics Placement Examinations.

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.

22. Glass Blowing (1) I, II

Three hours of laboratory. Prerequisite: Chemistry 1B. Elementary training in the manipulation of glass.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 and credit or concurrent registration in Chemistry 150. 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: Concurrent registration or credit in Chemistry 109B. Not open to students with credit or concurrent registration in Chemistry 111.

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.

111. Physical Chemistry Laboratory (3) I, II

Nine hours of laboratory.

Prerequisite: Credit in Chemistry 110B or concurrent registration with consent of instructor. Not open to students with credit or concurrent registration in Chemistry 109C.

Physico-chemical apparatus and measurements, with emphasis on technical report writing.

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 115B or 116B.

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.

Chemical statistics, solid state theory, transport phenomena, chemical kinetics in solution and additional selected topics in modern physical chemistry.

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.

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.

Prerequisites: 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.

150. Analytical Chemistry (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Chemistry 4 or 5, 12, and 109A or 110A.

Advanced theory and practice of quantitative analysis and an introduction to instrumental methods of analysis.

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 (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Chemistry 5, 112, and credit or concurrent registration in 110B. Not open to students with credit for Chemistry 150.

Advanced theory and practice of chemical instrumentation.

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. Radiochemistry (3) I, II

One lecture and six hours of laboratory.

Prerequisite: Chemistry 4 or 5.

Laboratory principles and techniques of radioactivity applied to the various fields of chemistry. Experimental methods used in tracer applications, activa-

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tion analysis, chemical investigation of the actinides, study of 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 Liaterature (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 for additional credit with new subject matter for a total of six units.

198. Senior Project (1-3) I, II

Prerequisites: Three one-year courses in chemistry and senior standing. An individual investigation and report on a problem. May be repeated to a maximum of six units.

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

Individual study. Six units maximum credit.

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 to 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 to a master's degree.

211. Chemical Thermodynamics (3)

Prerequisites: Mathematics 52 and Chemistry 110B. Chemical thermodynamics and an introduction to statistical thermodynamics.

212. Chemical Kinetics (3)

Prerequisites: Mathematics 52 and Chemistry 110B. Theory of rate processes; applications of kinetics to the study of reaction mechanisms.

213. Quantum Chemistry (3)

Prerequisites: Mathematics 52 and Chemistry 110B. Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory.

214. Molecular Structure (3)

Prerequisites: Mathematics 52 and Chemistry 110B. Theory and techniques used in the determination of molecular structure.

215. Chemical Statistical Mechanics (3)

Prerequisite: Chemistry 211. Statistical mechanics as applied to chemical systems.

216. Physical Chemistry of Electrolytic Solutions (2)

Prerequisite: Chemistry 211.

Theory of ionic solutions: electrode potentials, activity coefficients, partial molal quantities, conductance and ion association.

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 (2)

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)

Prerequisite: Consent of instructor.

Research in one of the fields of chemistry. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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

Faculty assigned to teach courses in Chinese are members of the Department of Clasical and Oriental Languages.

Offered by the Department of Classical and Oriental Languages

Courses in Chinese. Major or minor work in Chinese is not offered.

Lower Division Courses

(see also courses in Oriental Languages)

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.

3. Intermediate (4)

Prerequisite: Chinese 2.

A practical application of the fundamental principles of grammar. Reading in Chinese of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports.

4. Intermediate (4)

Prerequisite: Chinese 3. Continuation of Chinese 3. Reading of selections from Chinese literature.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

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

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Individual study. Maximum credit six units. Prerequisite: Consent of instructor.



Classical and Oriental Languages

Classical and Oriental Languages In the College of Arts and Letters

Faculty

Emeritus: Burnett

Professor: Warren

Associate Professor: Schaber (Chairman) Assistant Professors: Eisner, Gefter, Genovese, Woo, Yun Lecturer: McCullough

Offered by the Department

Major in Classics with the A.B. Degree in liberal arts and sciences. Minor in Classics.

Teaching minor in Humanities. (Refer to the section in this catalog on the School of Education.)

Teaching minor in Latin. (Refer to this section of the catalog under Latin.) Courses in Chinese. (Refer to this section of the catalog under Chinese.) Courses in Greek. (Refer to this section of the catalog under Greek.)

Courses in Hebrew. (Refer to the section of the catalog under Hebrew.)

Courses in Japanese. (Refer to the section of the catalog under Japanese.) Courses in Latin. (Refer to the section of the catalog under Latin.)

Courses in Oriental Languages. (Refer to this section of the catalog under **Oriental Languages.**)

(For courses in translation see comparative literature, history and philosophy).

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 85 of this catalog.

A minor is not required with this major.

Concentration in One Language

Preparation for the major. Greek 1 and 2; or Latin 1, 2, and 3 (8 or 12 units).

Major. Thirty or 33 upper division units to include Comparative Literature 102A-102B; History 111A-111B; Philosophy 101; 18 units of Greek or 15 units of Latin.

Concentration in Two Languages

Preparation for the major. Greek 1 and 2; or Latin 1, 2, and 3 (8 or 12 units).

Major. Thirty-six upper division units to include Comparative Literature 102A-102B; History 111A-111B; Philosophy 101; 12 units of Greek; and 9 units of Latin.

Classics Minor

The minor in classics consists of a minimum of 18 units, of which nine units must be chosen from the following: Greek 103, 104, 105, 106, 199; Latin 104, 105, 106, 107, 199; Classics 185; Art 153; History 111A, 111B; Philosophy 101; Comparative Literature 102A, 102B. The student must have 12 units of Greek or of Latin; he may fulfill part of this requirement in high school.

Lower Division Courses in Classics

(See also courses in Greek and Latin)

40. Life in Ancient Greece and Rome (3)

Aspects of life in classical times as drawn from literary and artifactual sources.

50. Scientific Terminology (2)

Etymological and grammatical analysis of scientific terminology of Greek and Latin derivation.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

Upper Division Courses in Classics

185. Topics in Classical Studies (1-4)

Topics in classical languages, literatures, cultures, and linguistics. May be repeated with new content. Maximum credit six 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 85 of this catalog.

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 at least 12 units in comparative literature courses, at least six units in a foreign literature (in original language), at least six units to be chosen, with adviser approval, from one of the following: comparative literature courses, foreign literature courses, and courses in related fields.

Comparative Literature Minor

The comparative literature minor consists of a minimum of 15 units in comparative literature, nine of which must be upper division.

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. Introduction to Oriental Literature (3-3)

Major writings in translation, with emphasis each semester on the literature of one oriental country.

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 once with different material.

Upper Division Courses

102A-102B. Classical Western Literature (3-3)

Semester I. Prose and the long poem. Semester II: Drama and the short poem.

105. The Bible as Literature (3) |

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.)

126. Modern Continental Fiction (3)

Selected works by novelists and short story writers of continental Europe since 1900. (Formerly numbered Comparative Literature 101B.)

138. Introduction to Aesthetic Appreciation (1) I

(Same course as Humanities 138)

Major forms of expression and aesthetic experience in art, music, and literature, presented by an interdepartmental staff through lectures, demonstrations, and panel discussions.

Comparative Literature

Comparative Literature

140A-140B. Masterpieces of French Literature (3)

A cultural course designed to be given in introduction to the great French works from the Song of Roland through Cyrano de Bergerac, with emphasis on the sixteenth, seventeenth, eighteenth and nineteenth century authors. The contributions to world thinking of Rabelais, Montaigne, Molière, Racine, Descartes, Pascal, Montesquieu, Voltaire, Rousseau, Hugo, Balzac, Flaubert, Maupassant, Zola, will be studied through lectures and outside readings.

142. The Golden Age of German Literature (3) I, II

Masterpieces of German literature from the eighteenth and early nineteenth centuries.

143. Masterpieces of Modern German Literature (3) I, II

Selected works in English translation by outstanding German writers, poets, and thinkers of the 19th and 20th centuries. Included are contributions by Hölderlin, E.T.A. Hoffmann, Heine, Keller, Hebbel, Nietzsche, Hauptmann, Rilke, Hesse, Th. Mann, Kafka, Werfel, Benn, Brecht, and others.

144. Masterpieces of Spanish Literature (3) I, II

Reading selections from major Spanish authors.

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.

152. Drama (3)

Forms and themes in drama. Focus of course to be set by instructor. May be repeated once with different content. (Formerly numbered and entitled: Comparative Literature 152A–152B, World Drama.)

153A-153B. World Poetry (3-3)

Selected lyric poets from world literature; first semester: prior to 19th century; second semester: 19th and 20th centuries.

160. Proseminar (3)

An intensive study of a topic to be selected by the instructor. May be repeated once with different content.

170. Studies in Modern Oriental Literature (3)

Types of recent literature in translation, with emphasis on the writing of one oriental country. May be repeated once for additional credit with new material.

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)

A movement or theme in world literature—such as Symbolism, Realism, Existentialism, alienation, or revolution. May be repeated for a maximum of six units credit.

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)

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 once with different content.

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 once with different content.

196. Folk Literature (3)

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Studies in the ballad, bardic poetry, oral and popular literature and folklore. May be repeated once with different content.

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

Individual study. Six units maximum credit. Prerequisite: Consent of instructor.

Criminal Justice Administration

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

Preparation for the major. Political Science 2, Sociology 1, Public Administration 99 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 and 197 or 198, Criminal Justice Administration 146; nine units selected from Criminal Justice Administration 116, Sociology 110, 113, 114, 125, 140, Mexican-American Studies 103, 104, Political Science 132, 135, 138, 139; and eighteen additional units selected from: any of the above courses not taken to satisfy the nine unit requirement, and Criminal Justice Administration 110, 111, 112, Public Administration 136, 141, 145, 148, 152, 161, 162, 199; Sociology 111, 112, 122, 146, 147, 148; Psychology 106, 145, 150, 152, 153; Mexican-American Studies 102, 105; Social Welfare 100, 180; Anthropology 150.

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.

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) |

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.

216. Seminar in Correctional Administration (3)

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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: Povenomire, Sellman

Professors: Amble, Powell (Chairman), Stephenson

Associate Professor: Howard, G.

Assistant Professors: Annas, Harvey, M., Lessley, McKerrow, Owen

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.

Teaching major in drama with specialization in secondary teaching.

Teaching minor in drama with specialization in both elementary and secondary teaching.

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 85 of this catalog.

A minor is not required with this major.

Preparation for the major. Drama 30, 31, 40, 50, and Telecommunications and Film 1 or 70. (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 120, 127A, 128, 132, 140A, 160A, 160B, and five 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 30 or 31, 40, 50, and Telecommunications and Film 3. (12 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 127A, 140A, 140B, 145A, 148, 152A, 160A, 160B. In addition to course requirements the student must participate in a minimum of five Major Theatre performances and three Studio or Experimental Theater activities.

Emphasis in Design for Television

Preparation for the major. Drama 40, 50, or Telecommunications and Film 20, Telecommunications and Film 3, 56, and 83. (15 units.)

Major. A minimum of 24 upper division units to include Drama 101, 140A, 140B, 148, 152A or Telecommunications and Film 180, Telecommunications and Film 150, 156, and 162 or 184.

Drama Minor

The minor in drama consists of a minimum of 21 units in drama to include Drama 5, 30 or 31, 40, 50 and nine units of upper division electives in drama.

Drama Major

For the Standard 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, with specialization in secondary teaching, may be used by students in Teacher Education as an undergraduate major for the A.B. degree in applied arts and sciences.

Specialization in Secondary Teaching

Preparation for the major. Drama 30, 31, 40, 50, and Telecommunications and Film 1 or 70. (15 units.)

Note: Drama 5 and 10 should be taken as part of the General Education requirements.

Teaching major (undergraduate). A minimum of 24 upper division units to include Drama 120, 127A, 128, 132, 140A, 160A, 160B, and five units of electives in drama (except Drama 142 and 199) selected with the approval of the adviser.

Postgraduate Year. Six upper division or graduate units selected from the following: Drama 109, 121, 122, 131, 145A–145B, 148, 152A, or any 200-numbered course in drama with the approval of the adviser.

Drama Minor

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For The Standard Teaching Credential

Specialization in Elementary Teaching

The minor in drama for elementary teaching consists of not less than 21 units in drama to include Drama 5, 30 or 31, 40, 50, and nine units of upper division electives in drama.

Specialization in Secondary Teaching

The minor in drama for secondary teaching consists of not less than 21 units in drama to include Drama 5, 30 or 31, 40, 50, and nine units of upper division electives in drama.

Lower Division Courses

5. Introduction to the Theatre (3) I, II

Three lectures per week and fifteen 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.

8. Verse Choir (2) I, II

Three hours.

Participation in verse speaking chorus to develop quality, range of tone, and ability in dramatic visualization of poetry. Lectures and readings on the nature, artistic function and history of the Verse Choir. Maximum credit four units, including lower division and upper division courses 8 and 108. (Formerly numbered Speech Arts 63.)

10. Voice and Diction (3) I, II

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. (Formerly numbered Speech Arts 1.)

30. Elementary Acting (3) I, II

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. (Formerly numbered Speech Arts 55A.)

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. (Formerly numbered Speech Arts 55B.)

32. Movement and Mime for the Theatre (3) I

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. (Formerly numbered Speech Arts 32.)

40. Dramatic Production (3) I, II

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. (Formerly numbered Speech Arts 56.)

47. Sound in the Theatre (2) |

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One lecture and three hours of laboratory.

Techniques, theory, and procedures necessary to develop sound, music, and effects integrated into theatre production. (Formerly numbered Speech Arts 57.)

50. Elementary Stage Costume and Makeup (3) |

Two lecture-demonstrations and three hours of laboratory.

Principles and application of makeup for stage, film, and television. Pattern drafting, draping, color harmony and use of fabrics for stage costuming. Practical training in the construction of stage costumes and application of makeup for departmental productions. (Formerly numbered Speech Arts 8.)

55. Children's Theatre (3) |

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 college-sponsored productions.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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. (Formerly numbered Speech Arts 101.)

108. Advanced Verse Choir (2) I, II

Three hours.

Participation in verse speaking chorus to develop quality, range of tone, and ability in dramatic visualization of poetry. Lectures and reading on the nature, artistic function and history of the Verse Choir, with a written report or project. Maximum credit four units, including lower division and upper division courses, 8 and 108. (Formerly numbered Speech Arts 163.)

109. Verse Choir Directing (2 or 3)

Organizing a given group as a Verse Choir, considering age, voice quality, background, selection and arrangement of material, and techniques of directing. Demonstration and practice of techniques to improve speech through the Verse Choir. (Formerly numbered Speech Arts 164.)

110. Creative Dramatics (2) I, II

Practical 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. (Formerly numbered Speech Arts 110.)

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Drama

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 college-sponsored productions.

120. Play Analysis (3) I, II

The structure and style of drama. Several short plays and one full-length play are read, discussed and analyzed. (Formerly numbered Speech Arts 118A.)

121. Theatre Criticism (3) |

Prerequisites: Drama 5 and 120.

A consideration of the problems and practices of dramatic criticism as applied to theatrical production in the past and present. (Formerly numbered Speech Arts 116.)

122. Playwriting, the One-Act Play (3) I, II

Lectures, discussion and reading of one-act plays written by the students. (Formerly numbered Speech Arts 118B.)

123. Playwriting, the Long Play (3) II

Prerequisite: Drama 122.

Lectures and analytical discussions of full-length plays written by students. (Formerly numbered Speech Arts 128.)

124. Script Writing for the Musical Theatre (3) I

Prerequisite: Drama 122.

Lectures, analytical discussions, and readings of one-act and full-length scripts written for the musical stage by students.

125. Original Dramatic Works: Production Laboratory (3) II

Nine hours of laboratory.

Prerequisites: Drama 30, 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. (Formerly numbered Speech Arts 126.)

126. Theory of Production for the Musical Stage (3) |

Prerequisites: Drama 31 and consent of instructor. Theory and principles of production of modern musicals. (Formerly numbered Speech Arts 125.)

127A-127B. Stage Direction (3-3) I, II

Prerequisite: Drama 127A is prerequisite to 127B.

Planned for prospective directors of plays in schools, colleges and community theatres.

- A. Composition, picturization and movement for the stage director.
- B. Advanced problems of composition and motivations for movement. (Formerly numbered Speech Arts 159A-159B.)

128. Stage Direction Laboratory (1) I, II

Prerequisites: Credit or current registration in Drama 127A or 127B. Experience in directing a one-act play before a departmental or public audience. Maximum credit two units. (Formerly numbered Speech Arts 160.)

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 college-sponsored productions.

130. Accents and Dialects for the Stage (3) II

Prerequisite: Drama 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. (Formerly numbered Speech Arts 153.)

132. Advanced Acting (3) I, II

Prerequisite: Drama 31.

Problems in characterization: Acting styles of the great periods in theatre history. (Formerly numbered Speech Arts 155.)

137. High School Play Directing (2)

Two hours of laboratory.

Prerequisites: Drama 40 and 127A.

Theory and practice of selecting, directing, and producing dramatic presentations in high school, with emphasis upon low-budget and creative methods and techniques most practicable and effective in the high school drama program.

140A. Scenic Design (3) |

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. (Formerly numbered Speech Arts 140A.)

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. (Formerly numbered Speech Arts 140B.)

142. Theatre Workshop (2) I, II S (3 or 6)

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. (Formerly numbered Speech Arts 142.)

Drama

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. (Formerly numbered Speech Arts 145A-145B.)

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. (Formerly numbered Speech Arts 156.)

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. (Formerly numbered Speech Arts 151.)

152A-152B. History of Costume (3-3) I, II

Two lectures and three hours of laboratory.

Costume from primitive times to the present; use of historical costumes on the stage. (Speech Arts 152B may be taken without 152A.)

A. From primitive times to 16th century.

B. 16th century to 20th century.

(Formerly numbered Speech Arts 152A-152B.)

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. (Formerly numbered Speech Arts 154A-154B.)

165. History of American Theatre (3) I, II

Prerequisites: Drama 160A or 160B, and consent of instructor.

American theatre and drama from Colonial times to the present day. Readings of plays and primary documents. Social and cultural background. (Formerly numbered Speech Arts 158.)

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 and university theatre; principles of organization, programming, production, budgets, box office, and promotional procedures.

177. Management of Children's Theatre (3)

Prerequisite: Drama 115.

History and objectives of theatre for the child audience in the United States and England. Survey of existing educational, community, and professional children's theatre programs. Managing theatre for children. Practical experience through participation in college-sponsored productions.

178. Directing the Period Play (3) II

Two lectures and three hours of laboratory.

Prerequisite: Drama 127B.

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.

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. Six units maximum credit. 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.

237. Projects in Children's Theatre (3)

Prerequisites: Drama 110 and 115.

Special individual problems and projects related to all areas of dramatic production for children's theatre.

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 electro-mechanical devices to the scenic arts for theatre and television. (Formerly numbered Speech Arts 243.)

244. Seminar in Stage Direction (3)

Prerequisite: Drama 127A.

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Projects in the aesthetic principles and the practices of stage direction with an emphasis on styles and historic periods.

Drama

245. Seminar in Lighting for Stage and Television (3)

Prerequisite: Drama 145A or 145B.

Projects concerned with the aesthetic and the technical problems of lighting in stage. (Formerly numbered Speech Arts 245.)

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, 140B, or 148. (Formerly numbered Speech Arts 246.)

247. Seminar in History of Theatre and Drama (3)

Prerequisites: Drama 120, 160A, and 160B.

A. British and Continental Theatre

B. American Theatre

(Formerly numbered Speech Arts 247.)

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. May be repeated once with new content for a maximum of six units. Maximum credit six units applicable on a master's degree. (Formerly numbered Speech Arts 248.)

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3)

Prerequisite: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Economics

In the College of Arts and Letters

Faculty

Emeritus: Ryan

Professors: Anderson, Babilot, Barckley (Chairman), Bridenstine, Flagg, Gifford, Jencks, Leasure, McClintic, Neuner, Turner, M. S.

Associate Professors: Chadwick, Clement, Madhavan, Nam, Poroy, Venieris Assistant Professors: Bohmer, Hambleton, Hardesty, Kartman, Popp, Sebold Lecturers: Ayanian, Ellsworth, 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.

Teaching major in economics, with specialization in secondary teaching. Teaching minor in economics, with specialization in secondary teaching.

Economics Major

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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 85 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 pre-legal education or a combined economics-business program.

Plan A

Preparation for the major. Economics 1A-1B and 2. (9 units.) Recommended courses in related fields: Mathematics 40 and 50.

Major. A minimum of 24 upper division units in economics to include Economics 104A-104B, 107, and 141. Economics 103A-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) pre-law majors; (b) a broad-ranging liberal arts interest; and (c) a combined economics and business interest.

Preparation for the major. Economics 1A-1B (or 103A-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. 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-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 of which must be upper division; Economics 103A-103B is not acceptable.

Economics Major

For the Standard 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.

Specialization in Secondary Teaching

Preparation for the major. Economics 1A-1B or 103A-103B, and 2. (9 units.)

Teaching Major (Undergraduate). A minimum of 24 upper division units in economics to include Economics 100A-100B. Economics 103A-103B may not be used to fulfill minimal upper division requirements in the major.

Postgraduate Year. Six units of graduate courses in economics to be selected with the approval of the department adviser.

Economics Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

The minor in economics for secondary teaching consists of not less than 21 units to include Economics 1A-1B or 103A-103B and 15 upper division units in economics courses except 103A-103B selected with approval of the departmental adviser.

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 macro-analysis 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 (micro-analysis); 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) |

A non-technical 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 153. Limit of nine units applicable 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

Prerequisites: Economics 1A and 1B or 103A and 103B.

Economic theory with special reference to the theory of the firm and the industry; value and distribution.

100B. Intermediate Economic Theory (3) I, II

Prerequisites: Economics 1A and 1B or 103A and 103B.

Economic theory with special reference to national income analysis and the theory of investment.

101. History of Economic Thought (3) I, II

Prerequisites: Economics 1A and 1B or 103A and 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

Prerequisites: Economics 1A and 1B or 103A and 103B.

The economic aspects of laissez-faire and regulated capitalism, co-operatives, socialism, communism, nazism, fascism. Experience in Russia, Germany, United States, Great Britain. 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 divsion requirements in the economics major or minor or special major.

103B. Economic Principles, Institutions, and Policies (3) I, II

Prerequisite: Economics 103A or 1A.

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. Micro-Economic Analysis (3) I

Prerequisites: Economics 1A-1B (or 103A-103B) and Math 50. Mathematical interpretation of micro-economic theory. Credit will not be given for both 100A and 104A.

104B. Macro-Economic Analysis (3) II

Prerequisites: Economics 1A-1B (or 103A-103B) and Math 50. Mathematical interpretation of macro-economic theory. Credit will not be given for both 100B and 104B.

105. Welfare Economics (3) II

Prerequisites: Economics 1A and 1B, or 103A and 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, II

Prerequisites: Math 50 and Economics 1A-1B (or 103A-103B).

The quantitative approach to economic problems. The use of mathematics in economic analysis.

109. Advanced Economic Theory (3) II

Prerequisites: Economics 107, and either 100A-100B or 104A-104B. Recent contributions to the advanced theory of the firm, consumer demand, employment and growth.

110. Economic History of Europe (3) |

Prerequisites: Economics 1A and 1B or 103A and 103B.

Economic development from the Middle Ages to the present. Particular attention is given to the impact of the Industrial Revolution on national economics, especially on England's commerce and industry.

111A-111B. Economic History of the United States (3-3)

Prerequisites: Economics 1A and 1B or 103A and 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) |

Prerequisites: Economics 1A and 1B or 103A and 103B. Economic development, institutions, and problems of Latin America.

115. Economic Problems of South and East Asia (3) |

Prerequisites: Economics 1A and 1B or 103A and 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)

Prerequisites: Economics 1A and 1B, or 103A and 103B.

The development, institutions, and problems of the Soviet and East European economies.

119. Economic Problems of Africa and the Middle East. (3) II

Prerequisites: Economics 1A and 1B or 103A and 103B.

Economic development, institutions, and problems of Africa and the Middle East.

131. Public Finance (3) I, II

Prerequisites: Economics 1A and 1B or 103A and 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)

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Prerequisites: Economics 100A or 131.

General equilibrium. Externalties 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

Prerequisites: Economics 1A and 1B or 103A and 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-Keynsian, Chicago, radical, and ecological views. Topics include GNP forecasting, dynamic models, monetary vs. fiscal tools, economic surplus, and zero GNP growth.

138. Urban and Regional Economics (3) I, II

Prerequisites: Economics 1A and 1B or 103A and 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)

Prerequisites: Economics 2 and 107.

Measurement in economics. The construction and testing of simple economic hy-

potheses. Use of economic models involving multiple-regression analyis.

142. Business Cycles (3) I

Prerequisites: Economics 1A and 1B or 103A and 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

Prerequisites: Economics 1A and 1B or 103A and 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

Prerequisites: Economics 1A and 1B or 103A and 103B.

Structures of labor relations; management and union problems; public policy and collective bargaining; conditions of successful collective bargaining.

153. Comparative Labor Problems (3) |

Prerequisite: Economics 1A and 1B or 103A and 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

Prerequisites: Economics 1A and 1B, or 103A and 103B.

A theoretical 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

Prerequisites: Economics 1A and 1B or 103A and 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) |

Prerequisites: Economics 1A and 1B or 103A and 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

Prerequisites: Economics 1A and 1B or 103A and 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) II

Prerequisites: Economics 1A and 1B, or 103A and 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

Prerequisites: Economics 1A and 1B or 103A and 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

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Prerequisites: Economics 1A and 1B or 103A and 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

Prerequisites: Economics 1A and 1B, or 103A and 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.

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189. Population and Economic Growth (3)

Prerequisites: Economics 1A-1B or 103A-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)

Prerequisites: Economics 1A-1B or 103A-103B. Not open to students with credit in Economics 191 or 192.

International problems, economic communities, organizations, and other selected topics. (Formerly numbered Economics 192.)

191. International Trade Theory (3)

Prerequisites: Economics 100A-100B or 104A-104B.

The pure theory of iinternational trade and commercial policy. (Formerly numbered Economics 190.)

192. International Monetary Theory and Policy (3)

Prerequisites: Economics 100B or 104B or 135.

Balance of payments, international capital movements and foreign exchange in relation to current theories and policies. (Formerly numbered Economics 191.)

194. Capital and Growth Theory (3)

Prerequisites: Economics 100A-100B or 104A-104B.

Factors affecting the capital supply and the rate of growth of a developed economy.

195. Economics of Underdeveloped Areas (3) II

Prerequisites: Economics 1A and 1B or 103A and 103B.

The nature and causes of economic underdevelopment. Problems of and policies for the economic development of underdeveloped areas of the world. (Formerly numbered Economics 196.)

197. Research Design and Method (3) II

Prerequisites: Economics 2 and 107.

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. Six units maximum credit. Prerequisite: Consent of Instructor.

Graduate Courses

200A. Seminar in Advanced Economic Theory (3)

Prerequisites: Economics 104A and 104B, or 100A, 100B, and 107. Theory of consumer and producer behavior. Determination of prices and resource allocation patterns in a market economy; partial and general equilibrium.

200B. Seminar in Advanced Economic Theory (3)

Prerequisites: Economics 104A and 104B, or 100A, 100B, and 107.

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)

Prerequisites: Twelve units in economics. A critical study of the development of economic thought.

202. Seminar in Comparative Economic Systems (3)

Prerequisites: 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-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 decisionmaking 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 196.

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)

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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

Prerequisite: Economics 135.

Analysis of theoretical issues associated with 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 151 or 152. Individual study and group discussion of selected topics in labor economics.

253. Comparative Labor Seminar (3)

Prerequisites: 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 Economics 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 both Economics 170 and 100A. 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.

Resource allocation, income distribution, commercial policies, capital movements, balance of payments, and international monetary institutions. (Formerly numbered 295.)

Economics

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)

Prerequisites: Classified graduate standing and consent of instructor. Independent research project in an area of economics.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Upper Division Courses

Social Foundation

100. 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, the philosophies, issues, and social forces that influence the school. Not open to students with credit in Education 101 or 102.

101. History and Philosophy of Education (2) I, II, S

Prerequisites: Senior standing and a minimum of 12 units in education. 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 100.

102. Secondary Education (3) Irregular

An introduction to understanding the development of secondary education and its present status as a social institution. Not open to students with credit in Education 100.

104. European Education and Cultural Change (3) II

Tradition and change in contemporary European education with special reference to England, France, Germany, and the U.S.S.R.

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 and educational technology laboratory.

The nature of growth and development, principles and theories of learning. guidance practices, test and measurements. Not open to students with credit in Education 112 or 113.

111. The Learner in the Elementary School (3) I, II, Summer

Prerequisites: Psychology 1 and admission to Elementary Education. Intellectual, emotional, social, and physical development during childhood and early adolescence, including basic principles of child guidance and counseling. Directed observation required.

112. The Learning Process in the Elementary School (3) I, II, Summer

Prerequisite: Education 111.

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Psychological principles for effective classroom teaching; techniques of measurement and evaluation for the diagnosis and improvement of learning.

Education

In the School of Education

Member of the American Association of **Colleges for Teacher Education**

Faculty

Emeritus: Alcorn, Bacon, Corbett, Hammack, E., Hammach, I., Hunter, Kinder, Linley, Madden, White

Professors: Anderson, E., Anderson, P. S., Apple, Baker, Ballantine (Associate Dean), Briggs, Bruce, Brydegaard, Charles, Crum, Erickson, Fishburn, Fisher, J., Friedrich, Fulkerson, Gast, Gates, Gega, Gjerde, Gray, Groff, Halfaker, Hill, W., Holt, Huls, Inskeep, Kendall, Koester, La Pray, Lienert, LuPone, Malcolm, Miller, Mitchell, Nardelli, Pearson, Pettys, Platz, Prouty, Rixman, Ross, Rowland, Schrupp (Dean), Schunert, Sarvey, Singer, Smith, H., Smith, R. D., Strand, Tossas, Trimmer, Wetherill, Wilding

Associate Professors: Anthony, Becklund, Blanc, Burian, Burnside, Clark, Cummins, Duckworth, Elliott, Fearn, Forbing, Ford, Goodson, Retson, Shaw, Stautland, Steckbauer, Strom, Walsh, Warburton, Yesselman

Assistant Professors: Becker, Bee, Berg, Birch, Botkin, Carnevale, Chamley, Cochran, Doorlag, Hill, P., Kaatz, Klann, Manjos, McLevie, Moreno, Morris, J., Morris, W., Murphy, Nagel, Pherson, Richman, Sanner, Thompson, Treadway

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.E. degree (Described in the section 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.

Lower Division Courses

A. Review of Arithmetic (0) I, II

H. Review of Handwriting (0) I, II

R. Review of Reading (0) I, II

S. Review of Spelling (0) I, II

Noncredit courses designed to increase competence in the skill subjects. For students who do not qualify on the respective sections of the Fundamentals Test required of all applicants to elementary teacher education.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153.

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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

114. Interpretation of Early Childhood Behavior (3) Irregular in Summer

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

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

Prerequisite: 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. Offered only in Extension.

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

118. Supervision of Child Welfare and Attendance (3) Irregular

Content includes laws relating to children, guidance principles, social casework, agency relationships, conference techniques, home visitation methods, employment supervision, attendance work, child accounting, familiarity with

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

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.

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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; in general methods and materials; in planning for teaching; and in evaluating learning activities.

121. Methods and Materials of Instruction: Major (2) Minor (2) except Education 121E (3) and Education 121Q (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:

Offered in the Fall Semester

A. Methods in Art

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
- O. Methods in Drama
- **O.** Methods in Business Skills
- R. Methods in Choral Music
- S. Methods in Instrumental Music
 - - J. Methods in Phys. Ed. (Women)

Offered Irregularly

Offered in the Spring Semester

C. Methods in Home Economics

E. Methods in Foreign Languages

K. Methods in Physical Science

V. Methods in General Science

S. Methods in Instrumental Music

P. Methods in Health Education

H. Methods in Phys. Ed. (Men)

M. Methods in Social Science N. Methods in Life Science

R. Methods in Choral Music

D. Methods in Industrial Arts

F. Methods in Mathematics

A. Methods in Art

B. Methods in English

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.

123. Organization and Operation of the Reading Laboratory (3) I, II

Lectures and laboratory to eight hours per week.

Prerequisite: Education 122.

Problems and techniques in organizing and operating the reading laboratory in secondary schools and colleges; current research and laboratory experiences.

123_NN 230

- N. Methods in Life Science

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 college staff and the San Diego County Curriculum Staff.

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.

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.

157. Vocational-Technical Education in the Community College (4)

Three lectures and three hours of laboratory in a community college.

Prerequisite: Two years of occupational experience in a community college subject-matter area.

Principles, practice, scope, and functions of vocational-technical education in the community college. Methods and materials of instruction, curricular development, and evaluation.

158. The Vocational-Technical Student (4)

Three lectures and three hours of laboratory in a community college. The learning process and individual differences, behavioral characteristics of

youth, race and ethnic relations in the community college.

159. Directed Teaching (2 or 4)

Prerequisite: Education 157 or 158.

Systematic observation, participation, and teaching under supervision in a vocational-technical area in a community college.

Methods-Elementary

130. First Elementary Education Practicum (2) | II, (3) 5

Four hours of activity for 130A; four hours of activity for 130B; six or more hours of activity and educational technology laboratory for 130C. Prerequisite: Concurrent registration in Education 111, or consent of CoordiEducation

nator 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 for 131C or 131D or 131E; and instructional educational technology laboratory.

Prerequisite: Education 111 and 130; concurrent registration in Education 112 or consent of Coordinator of Elementary Education.

Curriculum, principles, methods, and materials of instruction, including instructional educational technology and participation in elementary education, in the areas listed in A through E below.

Α.	Reading	C, D, or E. Student Teaching (not
Β.	Social Studies	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, for 132B, and 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 in A through E below.

A. Science B. Art

D or E. Student Teaching (not offered in the summer)

C. Music

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. 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.

135. Workshop in Elementary Education (3 or 6) Irregular

To meet the needs of individual 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 College.

136. Modern Foreign Languages in Elementary Education (3) Irregular

Prerequisites: French or German or Spanish: (1964-1965) courses 1, 2, 10, 11, or equivalents; (1965-1966) courses 1, 2, 3, 10, 11, or equivalents; (1966-1967) courses 1, 2, 3, 4, 10, 11, or equivalents.

Methods of teaching modern foreign languages in the elementary school, emphasizing the audio lingual approach. Students will produce materials and learn to use tapes, film strips, records, films, language laboratories, and written materials.

138A. Curriculum in Elementary Education (3) Irregular

Formerly Education 138.

Emphasis upon 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.

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 kindergar-

Educational Technology

140. Techniques of Media Utilization (3) I, II, S

Three lectures and two hours of laboratory. Use in the teaching-learning process, including laboratory.

141. Producing Instructional Materials (3) Irregular

Prerequisite: Education 140.

Production and evaluation of instructional materials.

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. Application of Programmed Instruction (3) Irregular

Prerequisite: Education 112 or 110, or Psychology 175.

Application of programmed instructional materials to the teaching process, i.e., punch and strip devices, programmed texts, teaching machines. Selection, evaluation, and utilization of programmed materials in team-teaching and other new instructional systems. Individual preparation of instructional pro-

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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 3 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 psycho-educational 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 deviates; 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

117-8810

Characteristics and adjustment problems of mental, physical, and emotional deviates.

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 of 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 of the public schools. Concentration will be on the secondary level. (Recommended for students with specialization in Secondary Teaching.)

Education

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. Not more than six units may be used for any degree.

171. Practicum in Mental Retardation (2) I, II

One lecture and two hours of laboratory.

Prerequisites: Admission to Special Education, and Psychology 109 or concurrent registration.

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.

174. Methods of Speech Therapy (3) I

(Same course as Speech Pathology and Audiology 124)

Prerequisites: Speech Pathology and Audiology 6 and 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.

176. Stuttering and Neurological Disorders (3) |

Prerequisites: Speech Pathology and Audiology 120 and 121.

Clinical survey of newest methods of speech correction. Special emphasis given to causes and treatment of stuttering, cerebral palsy speech problems and aphasia in adults and children. Study of child or adult who presents multiple

177. Audiometry: Principles (3) |

Prerequisite: Psychology 50.

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.

178A. Speech Reading and Auditory Training (3) I, II

(Same course as Speech Pathology and Audiology 151.) Prerequisites: Speech Pathology and Auditory 121 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.

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 to deaf children including reading. Twenty-six hours observation in programs for the deaf.

Student Teaching

180A-180B. Directed Participation, Secondary (1-1) I, II

Prerequisite: To be taken concurrently with Education 100 and Education 110.

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

181B. Directed Teaching, Elementary (2) I, II

181C. Directed Teaching, Elementary (3) I, II

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—Library Practice (2-4) I, II

142-88345

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. During each semester of student library work a weekly conference period is required as indicated in the time schedule.

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. Conference on the Teaching of Mathematics (1) S

May be taken three times for credit.

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.

191. Guidance Conference (1) S

Prerequisite: Consent of the director of the conference. Course may be taken three times for credit.

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.

192. Audiovisual Conference (1) S

May be taken three times for credit. 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 develop-

197. Problems in Education (Credit to be arranged) Extension

Prerequisite: Consent of instructor.

Class study of specially selected problems in education. Does not apply to pattern requirements for credentials. Offered only in extension.

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

Individual study. Six units maximum credit.

Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently.

Graduate Courses

Students with undergraduate standing are not admitted to 200-numbered courses in Education. For other requirements refer to the statement of

prerequisites for graduate courses at the beginning of Part Four of this bulletin. In addition to these general requirements, 12 units of professional education are prerequisite for enrollment in all graduate courses, except Education 201,

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Education

223, and 251, which require special clearance from the Coordinator of Community College Programs; and courses in Counselor Education.

Sociological Foundations

201. The Community College (2)

Overview of philosophy, history, aims, scope, function, outcomes, principles and problems of the community college. Relation of the community college to elementary and secondary schools and to four-year colleges. Fieldwork, including observation and audiovisual experiences, required.

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 upon our culture and education.

205. History of Education (3)

Prerequisite: Education 100 or 101. Advanced study of the history of education with emphasis on educational

practices as related to present-day problems.

206. Philosopy of Education (3)

Prerequisite: Education 100 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)

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Prerequisite: Education 100 or 101.

A study of the social, economic, political and moral setting in which presentday American education functions.

208. Workshop in Community Influences on Learning and Curriculum Planning (3 or 6)

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.

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 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.

213. Advanced Quantitative Methods in Educational Research (3)

Prerequisite: Education 153.

Application of correlation and tests of significance, including nonparametric and multivariate techniques, to research designs in such areas as curriculum, human development, student learning, counseling, and administration.

Educational Psychology

220. Advanced Educational Psychology (3)

Prerequisite: Education 110 or 112.

Advanced study of the research and its application to learning and human growth.

221. Seminar in Educational Measurement (3)

Prerequisite, one of the following: Education 120, 151, 152.

Problems in educational testing. Emphasis upon construction, administration, and validation of teacher-made tests.

223. Educational Psychology: Community College (2)

Fieldwork required.

Prerequisite: Credit for 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.

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 the pupil personnel services; staff

roles and relationships in a variety of organizational patterns.

229. Workshop in Counseling (3)

Prerequisite: Consent of instructor of workshop.

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.
Education

235A-235B-235C. Specialized Areas in Rehabilitation Counseling (2-2-2)

Prerequisite: Admission to Counselor Education.

Education 235A deals with the psychological aspects of disability, 235B with the medical aspects of disability, and 235C with placement of the disabled.

237. Appraisal and Vocational Choice (6)

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. Offered only during summer sessions.

238. Counseling: Individual and Group (6)

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. Offered only during summer sessions.

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 scientific research in the field.

245. Seminar in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 211.

A study of the methodology of research with particular reference to the basic research in the psychology and teaching of the elementary school subjects.

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.

249A. Seminar in Art in Elmentary Education (3)

Prerequisite: Education 132B, credit or concurrent registration in Education 211.

Curriculum, materials, and techniques of instruction, including supervision.

249B. Seminar in Music in Elementary Education (3)

Prerequisite: Education 132C, credit or concurrent registration in Education 211.

Methods, materials, and curriculum. For elementary classroom teachers.

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)

167-88.470

Prerequisite: Student teaching or teaching experience.

Present status and development of the secondary school curriculum with emphasis upon 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 plan-

ning, utilization of audiovisual and other instructional materials and procedures of evaluation.

252. Seminar for Student Teachers (3)

Prerequisites: Education 110 and 100. 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.

253. Supervision of Student Teaching (2)

Open to experienced teachers interested in the teacher education program. Study of selection, orientation, induction, counseling and evaluation of credential candidates and student teachers; helping student teachers plan lessons, conduct classroom learning, analyze pupils' difficulties and achievement.

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.

255A. Advanced Curriculum and Intruction in Mathematics (3)

Prerequisite: Education 121F and teaching experience.

Factors directing the changing mathematics curriculum; recent trends and current research in the teaching of secondary mathematics.

255B. Advanced Curriculum and Instruction in Social Science (3)

Prerequisite: Education 121M and teaching experience.

Theories of content selection; social pressures which affect curriculum design; current research in curriculum development; trends in teaching techniques and materials.

255C. Advanced Curriculum and Instruction in English Language and Composition (3)

Prerequisites: English 191, 192, 193, Education 121B, and teaching experience. Problems in the teaching of English language structure and composition skills in secondary schools; recent trends and current research.

255D. Advanced Curriculum and Instruction in Literature (3)

Prerequisites: Education 121B, 12 units of literature, and teaching experience.

Problems of selection, presentation, motivation, and evaluation in the teaching of literature in secondary schools, techniques of reading in the genres; recent trends and current research in the teaching of literature.

256. Recent Trends in Secondary Curriculum (3)

288

170_A 8 455

Prerequisites: 12 units in secondary education and consent of the 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)

Enrollment only by application to the Chairman of the Department of Education.

A co-operative workshop sponsored by the college 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)

Admission by consent of the Coordinator of Secondary Education and instructor.

Individual study by graduate students who have demonstrated exceptional ability and a need for such work.

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)

Prerequisites: Standard Teaching Credential and consent of instructor.

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: Standard 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)

Prerequisites: Standard Teaching Credential and consent of instructor.

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, consent of instructor, and admission to Program of Educational Administration.

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, consent of instructor, and admission to Program of Educational Administration.

Analysis of theories and practices in the administration and supervision of the secondary school.

266A-266B-266C. Field Experience in Elementary School Administration and Supervision (1-1-1)

Prerequisite: Concurrent registration required in Education 264A, 264B, 264C.

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 (1-1-1)

Prerequisite: Concurrent registration required in Education 265A, 265B, 265C.

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: Standard 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 junior 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: Standard Teaching Credential, Eduation 260, 261, 262, 263, and consent of instructor.

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: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.

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: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.

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: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.

School district curricular development from kindergarten through junior 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: Standard Teaching Credential, Education 280, 281, 282, 283, and consent of instructor.

An intensive study of a selected area in school administration and supervision. May be repeated with new content for additional credit to a maximum of nine units. Typical courses in this area are School Law, School Finance, School Supervision, Personnel Procedures.

286A-286B. Seminar in School Building Construction and Utilization (3-3)

Prerequisite: Possession of Standard Administration or Supervision Credential, or consent of instructor. Completion of 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 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

274A. Seminar in Instructional Media Utilization (3)

Prerequisite: Education 140. Review of research in instructional media utilization.

275. Seminar in the Administration of Instructional Media Centers (3)

Prerequisite: Education 140.

Organization, supervision, and coordination of instructional media centers.

276. Seminar in Programmed Instruction (3 to 6)

Prerequisite: Education 144.

Theories of programmed instruction, with emphasis on construction of programs; application to teaching situations. Analysis and revision of programmed projects.

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)

Individual Study. Six units maximum credit. Prerequisite: consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

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 Community College program coordinator. 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)

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)

Application of concepts and procedures of counseling services in appropriate school of agency setting. Daily observation and practice. Weekly seminar sessions with college staff.

Application to take course must be made early during the preceding semes-

ter. May be repeated with new content. Maximum credit six units applicable on a master's degree.

332. Practicum in Counseling (3)

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)

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 to 6)

Prerequisites: Standard 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)

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.

374. Directed Internship—Speech Correction (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 speech correction.

375. Directed Internship for the Instructional Media Specialist (2–6)

Supervised internship in an instructional media center (application must be made during preceding semester.)

Education

Educational Technology and Librarianship

138. Organizing and Processing of Curriculum and Special Materials (3) II

Educational Technology and Librarianship

In the School of Education

Faculty

Assistant Professors: McAllister, Reid

Offered by the School of Education

Minor in library science.

Program for the school librarian. (Described in the section on the School of Education.)

Library Science Minor

The minor in library science is offered by the School of Education. The minor consists of a minimum of 15 units in Educational Technology and Librarianship, six units of which must be in upper division courses.

Lower Division Courses

1. Use of the Library (1) I, II

Introduction to use of the library. Includes classification, card catalog, periodical indexes, selected reference books, and preparation of bibliographies.

Upper Division Courses

110. Bibliography and Reference Materials (3) I, II

Prerequisite: Educational Technology and Librarianship 1.

A comprehensive course dealing with reference books, bibliographies, and source materials, with emphasis upon their use in research. A course of general interest and utility.

118. Selection and Acquisition of Library Materials (3) |

Study of all types of book and nonbook materials, including sources of information, selection, and evaluation. Attention is given to book and film reviews, standard lists, trade publications and bibliographies, publishers' and producers' announcements.

119. Technical Processes (3) I

Theory and methods of organizing library materials; a study of classification, cataloging, and choice of subject headings.

136. School Library Administration (3) |

Objectives, standards, and activities involved in operating the school materials program. Planning, organizing, administering, and coordinating the school library with the instructional program of the school.

Prerequisite: Library Science 119. Methods of purchasing, processing, classifying, cataloging and servicing spe-

cial curriculum and audio-visual materials.

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

Refer to Honors Program.

184. History of Books and Libraries (3) II

The historical development of the book and of the library from the earliest times to the present day; examines their influence upon our schools and culture. Open to all upper division students.

191. Workshop in Library Science (1-3)

Prerequisite: 12 units of library science or employment as a school librarian. Designed to meet the needs of school librarians and others who wish to develop or continue the study of selected library problems. Maximum credit six units.

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

Individual study. Maximum credit six units. Prerequisite: Consent of instructor.

Graduate Courses

225. Bibliography of the Humanities (2)

Prerequisite: Library Science 110.

Survey and evaluation of bibliographical and reference materials in the humanities, with training and practice in their use in solving questions arising in reference service.

226. Bibliography of the Social Sciences (2)

Prerequisite: Library Science 110.

Survey and evaluation of bibliographical and reference materials in the subject fields of the social sciences, with study of typical problems arising in reference service in these subjects.

227. Bibliography of the Sciences (2)

Prerequisite: Library Science 110.

Survey and evaluation of respresentative reference sources in the pure and applied sciences. Study of typical problems encountered in providing and servicing scientific reference materials.

231. Literature for Children (3)

193-SNNR

Prerequisite: Library Science 118.

Survey and evaluation of literature and other library materials particularly suited to the use of the elementary school student. A critical study of standard, classic, and current books for children, together with aids and criteria for selection.

Educational Technology and Librarianship

232. Literature for Adolescents (3)

Prerequisite: Library Science 118.

Survey and evaluation of literature and other library materials particularly suited to the use of the high school student. A critical study of standard, classic, and current books for the adolescent, together with aids and criteria for selection.

Engineering

In the School of Engineering

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

Faculty

Emeritus: Stone, H., Walling

- Professors: Bauer, Bedore, Capp (Dean), Chan, Conly, Dharmarajan, Fitz, Johnson, Learned, Lodge, Morgan, Murphy, Noorany, Quiett (Associate Dean), Rao, Shutts, Stone, S.
- Associate Professors: Agarwal, Chang, Chou, Craig (Assistant Dean), Eggleston, Krishnamoorthy, Lin, Mann, McGhie, Narang, Ohnysty, Skaar, Stratton
- Assistant Professors: Bearnson, Bilterman, Brown, Crooker, Harris, Hussain, Mansfield, McElmury, Panos, Stuart

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 electronic, and mechanical engineering. (Described in this section on the School of Engineering.)
- Minor in engineering. (Described in the section on the School of Engineering.)

Lower Division Courses

A. Introduction to Engineering (1)

A survey of the fields of engineering, designed to familiarize the student with the nature, the requirements, the responsibilities, and the opportunities of the profession.

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.

2. Plane Surveying (3)

110-55610

One lecture and six hours of laboratory.

Prerequisite: Mathematics 21 or 40.

Use, care, and adjustment of surveying equipment. Introduction to standard procedures, techniques of plane surveying, and plane table mapping.

Engineering

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: Physics 4A and credit or concurrent registration in 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 50A 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 4B and Mathematics 51.

Direct-current circuits, magnetic circuits, induced voltages, single-phase alternating-current circuits, coupled circuits, the transformer and introduction to network analysis. Not open to students with credit in Engineering 100A.

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education re-

quirements.

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 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 emplifiers. 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.)

Engineering

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

Prerequisite: Mathematics 52.

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) |

Two lectures and three hours of laboratory.

Prerequisite: Engineering 107.

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

Prerequisite: Mathematics 52.

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 modal 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) J. 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 Engineering 112.

Use of the analog computer in the solution of typical electrical engineering problems.

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) |

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.

123. Applied Hydraulics (3) I

Prerequisite: Engineering 115.

Application of principles of fluid mechanics in the fields of hydrology, water supply, hydraulic machinery, drainage, and waste disposal.

124. Foundation Engineering (2) 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 123.

Unit processes used in water treatment and waste-water disposal; physical and chemical tests used in the analysis of water and waste-water.

126. Transportation Engineering (3) |

Two lectures and three hours of laboratory.

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. 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 (2) II

One lecture and three hours of laboratory.

Prerequisite: Credit or registration in Engineering 127 or Engineering 122. Selection, design, and control of mixes of various materials used in highway engineering 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 Circuits (3) I

Prerequisite: Engineering 114.

A continuation of Engineering 114, to include regulated power supplies, oscillators; theoretical analysis of amplitude, frequency, and phase modulation; modulator and detector circuits; switching circuits and transient response of amplifiers. (Formerly numbered and entitled Engineering 134B, Analysis and Design of Electronic Circuits.)

134L. Communications Circuits Laboratory (1) |

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) |

213-897

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.)



Engineering

137. Communication Networks (3) |

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; impedancematching 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 134L and 139. Experimental study of frequency generation including klystrons, magnetrons and signal generators. Impedance, attenuation, phase, frequency, and power measurements; coaxial lines and waveguides; propagation in air, resonant cavities and antennas. (Formerly numbered Engineering 139B.)

140. Principles of Heat Transfer (3) I, II

Prerequisites: Engineering 108 or 100; and 187A.

Heat transfer by conduction, convection, radiation, and combinations thereof; introduction to aerodynamic heating and heat transfer by phase

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

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) |

Prerequisites: Engineering 50B, 116, and 187A.

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) |

Prerequisite: Engineering 148.

Cyclic and analytical methods of thermodynamic analysis. Development of general thermodynamic equations and methods of solution. Introduction to microscopic thermodynamics with application to the study of transport properties.

150A. Low Speed Aerodynamics (3) |

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

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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, turbo-jets, ram-jets, 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) |

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.

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)

Prerequisites: Engineering 50B, 60, and Engineering 187A or Mathematics

Kinematics and kinetics of systems of particles and rigid bodies. Dynamic analysis procedures for studying mechanical, electrical, and electromechanical systems. Variational methods.

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 150A, 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. Semiconductor Devices (3) II

Formerly Engineering 192.

Prerequisite: Engineering 114.

Tunnel diodes and backward diodes, breakdown diodes, multilayer diodes, varactor diodes, silicon controlled rectifiers and switches, unijunction transistors, field effect transistors, and hot electron devices.

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

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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 servo-motors. Derivation of component transfer functions. (Formerly numbered and entitled Engineering 131, Electromechanical Control Devices.)

167L. Control Systems Components Laboratory (1) ||

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) |

Prerequisites: Engineering 112 and 114.

Analysis of regulatory systems including servomechanisms by the Laplace transform method. System performance and stability; Nyquist, Bode, and rootlocus 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 non-linear 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.

173. Electronic Analog Systems (3)

Prerequisite: Engineering 114.

Modern analog computers using electronic and electro-mechanical elements. Operational amplifiers, integrators, summing devices and non-linear elements. (Formerly numbered Engineering 193.

174. Pulse and Digital Circuits (3) I, II

Prerequisite: Engineering 114.

Linear waveshaping, diode and transistor switching characteristics, clipping and clamping circuits, comparators, microcircuit logic elements, multivibrators, and field effect transistor switching characteristics and circuits. (Formerly numbered Engineering 194.)

175. Advanced Pulse and Digital Circuits (3) II

Prerequisite: Engineering 174.

Introduction to linear integrated circuits; linear voltage and current sweep circuits, blocking oscillators, negative resistance switching devices and circuits, analog-to-digital and digital-to-analog conversion techniques, digital storage devices and circuits.

Engineering

176. Logic Design and Switching Circuits (3) I, II

Prerequisite: Engineering 101.

Switching algebra, Karnaugh map and Quine-McCluskey tabular methods of minimization; multiple output functions; coding and decoding; economical NAND and NOR element implementation; asynchronous sequential circuit analysis and design. (Formerly numbered Engineering 195.)

177. Advanced Logic Design and Switching Circuits (3) I, II

Prerequisite: Engineering 176.

Synchronous sequential circuit design: counters, shift registers, memory element properties, state assignment methods. Introduction to threshold logic.

177L. Switching Circuits Laboratory (1) II

Prerequisites: Engineering 174 and concurrent registration in Engineering 177.

Experiements involving switching applications of diodes, bipolar transistors, field effect transistors, and integrated circuits. Implementation of logic design of combinational and sequential switching systems.

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.

180. Principles of Engineering Economy (3) I, II

Prerequisite: Engineering 115.

Analysis of the costs of development and promotion, construction, operation, depreciation and depletion. Capital recovery, income, return and yield. Valuations and appraisals, cost analysis and financial analysis. Application to engineering problems.

181. Hydrodynamics (3)

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Prerequisites: Engineering 50B or Physics 105, and Engineering 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 twodimensional 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 dynnamic 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.

186. Intermediate Solid Mechanics (3) II

Prerequisite: Engineering 116.

Shear center, curved flexural members, beams on elastic foundation, flat plates, torsion of non-circular sections, thick-walled cylinders, stress concentrations, energy methods.

187A-187B. Methods of Analysis (3-3) I, II

Prerequisite: Mathematics 52; Engineering 187A is a prerequisite for Engineering 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 engineeering problems. Application of numberical methods with consideration of limitations imposed by computer and programming language characteristics.

189. Automatic Control Systems (3) II

Prerequisites: Engineering 50B, 100B, and 187A.

Not open to students filing an electrical engineering master plan.

Analysis of the output-input 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 106, 108, and 116.

Prerequisites for 190D: Engineering 145, 146A, 148, and 190C.

Applications of engineering principles to design of machinery and energy conversion systems. Individuals student projects.

190G-190H. Aerospace Engineering Applications (2-2) I, II

Six hours of laboratory. Prerequisites for 190G: Engineering 150B, 151A, and 154. Prerequisite for 190H: Engineering 190G. Student projects in aerospace design.

191. Microwave Devices (3) II

Prerequiste: 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.

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. Six units maximum credit 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. Six units maximum credit for any combination of Engineering 196 and 199.

Graduate Courses in Aerospace Engineering

AE 200. Seminar (1-3)

Prerquisite: Consent of the graduate adviser and instructor.

Intensive study of selected topics in aerospace engineering, topic to be announced in class schedule. Maximum credit 6 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)

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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 246. Rarefied and Real Gas Flows (3)

Prerequisite: Engineering 187B.

Kinetic theory, the Boltzmann equation, the hydrodynamic equations, Chapman-Enskog Theory. Real gases and chemical reactions. Approximations: applications to shock structure, ultrasonics, heat transfer, and hypersonics. Free molecule flow.

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)

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 120B.

Fundamental concepts of prestressed concrete theory. Design applications to various types of structures.

CE 206. Matrix Analysis of Structures (3)

Prerequisite: Engineering 120B.

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 120B.

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 alogrithm 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 120B.

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 221. Airport Engineering (3)

Prerequisite: Engineering 127.

Problems in airport planning and design. Site selection, general airport layout; safety, economy a community compatibility. Functional design of buildings. Lighting, navigational aids, approach protection.

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 123.

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 123.

Measurement and interpetation of precipitation, evapotranspiration, stream flow and groundwater flow; hydrologic methodology and applications.

CE 232. Fluvial Hydraulics (3)

Prerequisite: Engineering 123.

Characteristics of rivers; mechanics of sediment transport; hydraulics and design of alluvial channels; channel stability; model studies.

CE 235. Water Quality Engineering (3)

Prerequisites: Engineering 123 and 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: Civil Engineering 235 or concurrent registration with consent of instructor.

Engineering

Theoretical and laboratory study of the chemical and microbiological processes which govern modern water and wastewater treatment.

CE 240. Advanced Soil Mechancis (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: Civil Engineering 240.

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: Civil Engineering 240.

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)

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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 Mechancis and Foundation Engineering (2 or 3)

Prerequiste: 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)

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units applicable on a master's degree.

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 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, fourterminal network theory using matrices. Fourier integral transform theory as applied to linear system analysis. Positive real functions and associated testing methods.

EE 211. Linear System Synthesis (3)

Prerequisite: Electrical Engineering 210.

Frequency-domain synthesis of driving point and transfer impedances in passive and active networks. Canonical forms and network equivalents. Timedomain synthesis and considerations of pulsed-data systems.

EE 212. Synthesis of Linear Active Networks (3)

Prerequisite: Electrical Engineering 211.

Synthesis of linear networks using active elements such as controlled sources, negative-impedance converters, gyrators and operational amplifiers.

EE 214. Computer-aided Network Analysis and Design (3)

Prerequisites: Electrical Engineering 210 and Fortran Programming. Elements of approximation theory, device modeling, topological analysis of networks, applications of general purpose computer programs, design of passive and active filters, circuit optimization and other related topics.

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 Sytems (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 control systems.

EE 230. Topics in Logic Design (3)

Prerequisite: Engineering 177.

Threshold logic, adaptive logic networks, magnetic core logic synthesis, functional decomposition, Turing machines, negative radix arithmetic. Solution of logic design algorithms by digital computer. (Not same course as EE 230, Advanced Logic Design and Switching Circuits.)

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. Transistor 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 236. Electronic Digital Systems (3)

Prerequisite: Engineering 177 and 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.

EE 240. Radiation 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)

Quantum mechanics for engineers concerned with its application to solidstate devices and optical communication systems.

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 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)

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 non-linear 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 used.

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)

320

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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)

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 201. Seminar in Thermodynamics and Fluid Flow (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in thermodynamics and fluid flow. Maximum credit six units applicable on a master's degree.

ME 202. Seminar in Cryogenics (2 or 3)

Prerequisites: Consent of the graduate adviser and instructor.

An intensive study in cryogenics. Maximum credit six units applicable on a master's degree.

ME 203. Seminar in Engineering Materials (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in engineering materials. Maximum credit six units applicable on a master's degree.

ME 204. Seminar in Engineering Systems (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in engineering systems. Maximum credit six units applicable on a master's degree.

ME 205. Seminar in Operations Research in Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in operations research in engineering. Maximum credit six units applicable on a master's degree.

ME 206. Seminar in Nuclear Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in nuclear engineering. Maximum credit six units applicable on a master's degree.

ME 207. Seminar in Mechanical Design (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.

An intensive study in mechanical design. 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 non-linear 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. (Formerly numbered and entitled: ME 231B, Advanced Science of Materials II.)

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: Engineer 187A.

Advanced concepts of macroscopic thermodynamics. Application of thermodynamics to special systems. (Formerly numbered ME 214.)

ME 260. Conduction Heat Transfer (3)

Prerequisites: Engineering 140 and 187B.

Conduction heat transfer, multidimensional conduction processes, transient analysis. (Formerly numbered ME 215A.)

ME 262. Convection Heat Transfer (3)

Prerequisites: Engineering 140 and 187B. Convection heat transfer. Advanced theories of forced and free convection.

(Formerly numbered ME 215B.)

ME 264. Radiation Heat Transfer (3)

Prerequisites: Engineering 140 and 187B.

Radiation heat transfer. Solid body and gaseous radiation. (Formerly numbered ME 215C.)

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. (Formerly numbered ME 210.)

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. (Formerly numbered ME 212.)

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 resistance. (Formerly numbered ME 213.)

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 non air-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. (Formerly numbered ME 216.)

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)

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 298. Special Study (1-3)

Individual study. Three units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

E 299. Thesis or Project (3)

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, Burnett, Dickhaut, Gulick, Haskell, Johnson, F., Keeney, Kennedy, Marchand, Shouse, Theobald.
- Professors: Baker, J., Dickinson, Frey, Gellens, Gross, Monteverde, Perkins, Phillips, Sanderlin, Sandstrom, Tidwell, Tozer (Acting Chairman), Vanderbilt, Wanlass, Widmer
- Associate Professors: Benson, Brashers, Henig, Ingham, Keller, McLeod, Moramarco, Nelson, Patterson, Redding, M., Santangelo, Seright, Taylor
- Assistant Professors: Adams, E., Aninger, Barry, Boe, Brown, Bumpus, Butler, Chater, Cooper, Crane, Davis, DeMarinis, Donahue, Drake, Farber, Forrey, Gervais, Hinkle, Karnath, Kehler, D., Kehler, H., Kohler, McCoy, Nichols, Redding, R., Rogers, Rother, J., Rush, Sarfatt, Savvas, Shojai, Stiehl, Sullivan, Taft, Thrane, Tunberg, Wall, Wheeler
- Lecturers: Crafts, Denman, Dirks, Doeblin, Hallahan, Horrigan, Johnson, M., McFall, McLevie, Prenn, Rother, C., Sykes, Tonsfeldt, Zimmerman

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, with specialization in both elementary and secondary teaching.
- Teaching minor in English, with specialization in both elementary and secondary teaching.

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 85 of this catalog. To satisfy the requirement in foreign language, students may not use courses in conversation. A minor is not required with this major.

Preparation for the major. English 6, 51A–51B; six units selected from English 52A, 52B, 53A, and 53B; 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 170, 171, and 172.

English Linguistics: English 175, 180, 181, 182, 183, 184, and General Language 196.

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 college regulations (see "Credit for Upper Division Courses" in the section of the 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 of which must be upper division.

English Major

For the Standard 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, with specialization in either elementary or secondary teaching, may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Specialization in Elementary Teaching

Preparation for the major. English 6, 51A–51B; six units selected from English 52A, 52B, 53A, and 53B; and three units of electives in English excluding 1X, 1Y, or 1Z. (18 units.)

Teaching 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 one course from English 102, 103, 104, 111, 112, 113A, 113B, 121A, 122A, 122B, and

Comparative Literature 155; (c) at least one course from English 114A, 114B, 115, 116, 117, 118 and 121B; (d) at least one course from English 130, 131, 133, 134, 135, and 136; (e) at least one course from English 175, 180, 181; (f) at least three courses (which may include courses taken under b, c, d, and e above) in one of the seven areas of study listed above for the English Major with the A.B. degree in Liberal Arts and Sciences.

Education 133 is required in addition to the major.

Specialization in Secondary Teaching

Preparation for the major. English 6, 51A–51B; six units selected from English 52A, 52B, 53A, and 53B; and three units of electives in English excluding 1X, 1Y, or 1Z. (18 units.)

Teaching Major. (Undergraduate). A minimum of 24 upper division units in English selected with the approval of the adviser, to include (a) English 101; (b) at least one course from English 102, 103, 104, 111, 112, 113A, 113B, 121A, 122A, 122B, and Comparative Literature 155; (c) at least one course from English 114A, 114B, 115, 116, 117, 118, and 121B; (d) at least one course from English 130, 131, 133, 134, 135, and 136; (e) at least one course from English 175, 180, 181; (f) at least three courses (which may include courses taken under b, c, d, and e above) in one of the seven areas of study listed above for the English Major with the A.B. degree in Liberal Arts and Sciences.

In addition to the major, Education 122 and a second course selected from English 175, 180, or 181 must be taken before graduation as requirements for the credential but not for the degree.

Postgraduate year. Six units of upper division or graduate courses in English.

English Minor

For the Standard Teaching Credential

The minor in English for elementary teaching consists of 20 units in English, nine of which must be upper division. The minor in English for secondary teaching consists of 21 units, to include: six units from English 51A-51B, 52A-52B, 53A-53B, 54, and 65; and six units selected from English 175, 180, or 181; and nine units in literature courses (English 101-153). Education 122 is also required.

Course Sequences

All year courses in comparative literature and 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 sev-

eral of its courses as special, limited-enrollment proseminars. These proseminars are designed to give English majors (or any one 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 college general education requirements, but unit credit is granted for these courses.

Study Skills Courses

(Offered by the Study Skills Center)

R. Reading Laboratory (0) I, II

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

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

A semitutorial service for students wishing assistance in composition, either remedial or advanced. Open to students at any level of college work.

Lower Division Courses in English

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.

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.)

52A-52B. World Literature (3-3) I, II

Major works from Homer to modern times. Semester I: Classical and medieval literature. Semester II: The Renaissance to modern times. Not open to students with credit in Comparative Literature 52A-52B.

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.)

54. Literary Theory and Criticism (3) I, II

Introduction to the various theories of literature and approaches to literary creation and criticism.

65. Language Study (3) II

Introduction to the principles and practice of modern linguistics as applied to the study of English.

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.)

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 153. Limit of nine units applicable 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. 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.)

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.)

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 neo-classical 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; English 119B, Victorian Poetry.)

115. Nineteenth Century British Prose (3) I, II

Non-fictional 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 re-opening 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, and Major Movements in Contemporary English Fiction, and the like. May be repeated with new content. Maximum credit six units.

130. Early American Literature (3) |

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.

140. Poetry (3) I, II

The study of poetry as a genre; theory and practical criticism. (Formerly numbered English 149.)

142. Fiction (3) I, II

The study of fiction as a genre; theory and practical criticism. (Formerly numbered English 148.)

144. Drama (3) |

The study of drama as a genre; theory and practical criticism.

149. Topics in the Study of Literary Genres (3) I, II

The study of particular aspects, techniques, or themes in one or more literary genres, such as Myth and Symbol in Poetry, The Nature of Tragedy, The Theater of the Absurd, The Hero in Fiction, Ideas and Forms in Modern Non-Fictional Prose, and the like. May be repeated with new content. Maximum credit six units.

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.

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.

172. The Writing of Non-Fiction (3) |

Prerequisite: English 70.

A writing workshop in non-fictional prose. May be repeated with new content. Maximum credit six units.

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.)

180. The English Language (3) I, II

The history of English and its present-day use. (Formerly numbered English 192.)

181. The Structure of English (3) I, II

The structure of modern English, including the various approaches to linguistic analysis (Formerly numbered English 193.)

182. American English (3) |

The development of American English; regional and cultural differences in pronunciation, grammar, and vocabulary. (Formerly numbered English 113.)

183. English Linguistics (3) II

Prerequisite: Open only to seniors and graduate students who have had English 180, or 181, or General Language 196.

Advanced study of linguistic theory and its application to the analysis of English. (Formerly numbered English 197.)

184. Phonemics and Morphemics (3) I, II

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.

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.

190. Selected Topics in English (2-3) I, II

Specialized study of a selected topic in literature or linguistics. May be repeated with new content. Maximum credit six units.

194. Individual Reading (1) I, II

316-89377

Selected works by a major author. May be repeated with new content. Maximum credit two units. (Formerly numbered English 110.)

English

198. Comprehensive Reading and Survey (3) II

Prerequisite: Nine units of upper division work in English.

A study of major movements in English literature through a review of important writers and key works. Individual programs of readings to fill the needs of each student.

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

Individual study. Six units maximum credit. Prerequisite: Consent of Instructor.

Graduate Courses

220. Indo-European (3)

Prerequisite: Anthropology 120 or English 183.

Phonology, morphology, and syntax of the Indo-European language community, with special attention to "Centum" and "Satem" relationships.

223. Old English (3)

Prerequisites: Twelve units of upper division work in English. Elementary grammar and readings in Old English prose and poetry; introduction to *Beowulf*.

224. Middle English (3)

Modern linguistic analyses of the Middle English language; emphasis on the development of historical English dialects.

233. American Literature (3)

Prerequisite: Twelve units of upper division work 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 units of upper division work 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 units of upper division work in English. Selected works in the literature of the Renaissance.

236. Restoration and Eighteenth Century Literature (3)

Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the late seventeenth and the eighteenth centuries.

237. Earlier Nineteenth Century Literature (3)

Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the early nineteenth century.

238. Later Nineteenth Century Literature (3)

Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the later nineteenth century.

239. Twentieth Century Literature (3)

Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the twentieth century.

243. Poetry (3)

Prerequisite: Twelve units of upper division work in English. Poetry as a literary form.

244. Fiction (3)

Prerequisite: Twelve units of upper division work in English. Fiction as a literary form.

245. Drama (3)

Prerequisite: Twelve units of upper division work 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.

290. Bibliography and Methods of Literary Research (3)

Prerequisite: Twelve units of upper division 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.

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 to a master's degree.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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, Thiel (Director), Thomas
Associate Professors: Anderson, Campbell, Gunning, Price, Somerville
Assistant Professors: Boggs, Breeden, Dickerson, Hambleton, Kwallek, Martin, J., Martin, M., Milne, Runnels, Schupp
Lecturers: Sorenson, Van Scoyoc, Warner

Offered by Family Studies and Consumer Sciences

Master of Science degree in home economics.

Major in home economics with the A.B. degree in applied arts and sciences. Major in child development with the B.S. degree in applied arts and sciences.

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

Minor in home economics.

Teaching major in home economics with specialization in secondary teaching.

Teaching minor in home economics with specialization in secondary teaching.

Home Economics Major

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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 85 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) Food 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 Food 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 three-year 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 food and nutrition careers include extensive 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, 4A; Family Studies and Consumer Sciences (Family Studies and Child Development) 70; three units of biology; Business Administration 1A; Chemistry 2A–2B, 3; Economics 1A, Physics 5; Sociology 1; and Microbiology 1. (50 units.)

Major. A minimum of 36 upper division units to include Family Studies and Consumer Sciences (Foods and Nutrition) 100, 102, 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 of which must be upper division.

Home Economics Major

For the Standard 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.

Specialization in Secondary Teaching

Requirements are the same as for the degree with an emphasis in general home economics. In addition, in their postgraduate year students must complete six units in home economics selected with approval of the adviser.

Home Economics Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

For specialization in secondary teaching, the minor consists of 20 units of Family Studies and Consumer Sciences, six of which must be upper division. The courses must be approved by the adviser.

Lower Division Courses

1. Fundamentals of Home and Family Life (3) Irregular

General concepts of family relationships and effective use of family resources. General Education course open to men and women. Not open to Home Economics majors.

2. Orientation to Home Economics as a Profession (1) |

Introduction to the opportunities and requirements in various professional fields for home economists.

99. Experimental Topics (2-4) |

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

111_4 10.2

One lecture and six hours of laboratory.

Fibers, yarn, fabric construction, and finishes as related to selection, use, and care.

23. Fabric Structure and Design Processes (3) Irregular

Six hours of activity.

Prerequisite: Art 2A.

A study of stitchery, knitting, crocheting, weaving, macramé, and textile decoration.

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 35.

70. Principles of Child Development and Guidance (3) I, II

Three lectures and one hour of observation.

Prerequisite: Sociology 1.

Growth and development of the child from conception through adolescence; his relationships with his family and peers; and implications for guidance. 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

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 4A and Chemistry 2B. Fundamental principles of human nutrition; planning, calculating and evaluating dietaries to meet human requirements; animal feeding experiments.

Family Studies and Consumer Sciences

103. Quantity Cookery (3) |

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.

Prerequisites: 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.

106. Diet Therapy (3) |

341-810.6

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.

Prerequisites: Family Studies and Consumer Sciences 103 and 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 4A. 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 courses. 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, em-

phasizing fundamental principles of handling.

116. Advanced Clothing Design (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. Clothing Selection (3) I, II

Appropriate clothing for the individual and the family. Basic art principles, fashion trends, history of costume, buying practices; current legislation in textiles and clothing.

118. Flat Pattern Design (3) I, II

One lecture and six hours of laboratory.

Prerequisites: 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 trend 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.

Socio-economic 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) |

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.

Family Studies and Consumer Sciences

123. Fabric Structure and Design Processes (3)

One lecture and six hours of laboratory.

Prerequisite: Art 2A.

A study of stitchery, knitting, crocheting, weaving, macramé, and textile decoration.

140. Family Financial Problems and Practices (3) |

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.

143. Household Equipment and Processes (3) I, II

One lecture and six hours of laboratory.

Prerequisite: 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 socio-economic levels.

150. Principles of Home Management (3) I, II

Open to both men and women, but not open to home economics majors. Efficient management of the home, family cooperation, establishment of goals, and productive use of money, time, and energy. Not open 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

LIS N 10 M

Five weeks' residence in a family-size unit.

Prerequisites: Family Studies and Consumer Sciences 40, 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

Prerequisites: Family Studies and Consumer Sciences 3, 40, 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: Education 121C or concurrent registration. Development and use of audio-visual and other instructional materials.

182. Educational Practices and Instructional Resources (3) I

Prerequisite: Fifteen units of 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

Prerequisite: Family Studies and Consumer Sciences 35 and Sociology I. 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 hours of laboratory prearranged.

Prerequisite: Family Studies and Consumer Sciences 70.

Development, behavior, and guidance of the preschool child. Observing, recording and interpreting behavior.

175. The Nursery School Program (3) |

Two lectures and three hours of participation.

Prerequisite: Family Studies and Consumer Sciences 171.

Types of programs for the nursery school with consideration of methods and materials evaluated in terms of needs of young children.

176. Creative Experiences for Young Children (3) II

Prerequisite: Family Studies and Consumer Sciences 175.

Exploration of spontaneous creativity at the preschool age; evaluation of materials best suited for use in art, music, dance, and language for the young child.

Family Studies and Consumer Sciences

177. Administration and Supervision in Nursery Schools (3) Irregular

Prerequisites: Family Studies and Consumer Sciences 175 and 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. Methods and Materials in Parent Education (3) II

Prerequisite: Consent of instructor.

An investigation of philosophy, curriculum instruction, current trends, and issues in the teaching of child guidance to parents.

179. Advanced Child Study (3) I, II

Prerequisites: Nine units in child development.

Readings and interpretations of scientific literature which contribute to an understanding of child behavior. Physical, social, and psychological factors which determine the direction 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. Six units maximum credit. 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)

151. 8 10 105

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. Determinations 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)

Prerequisites: Nine units in the area of clothing. Selected problems in the field of clothing.

216. Seminar: Textiles (3)

Prerequisites: Family Studies and Consumer Sciences 119 and consent of instructor.

Current literature and experimental research in fiber and fabric technology related to consumer use.

219. History of Textiles and Clothing (3)

Prerequisite: Six units in art, anthropology, sociology, or psychology. Textile and clothing development from ancient times to the present as related to socio-economic and political influences.

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 Consumer Sciences

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.

251. Seminar in Home Management (3)

Prerequisite: Upper division course in home management and related areas. Recent research in home 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)

Prerequisite: Consent of staff; to be arranged with the director and instructor. Individual study. Six units maximum credit.

299. Thesis (3)

300-8 10 155

Prerequisite: 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: Brown, E. M.

Professors: Max, Messier, Piffard

Associate Professors: Glasgow (Chairman), Nelson, H.

Assistant Professors: Branan, Dunhouse, Ghilbert, Hanchett, E., Palmer, Woodle

Lecturer: Marcuse

Offered by the Department

Master of Arts degree in French.

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

Teaching major in French with specialization in both elementary and secondary teaching.

Teaching minor in French with specialization in both elementary and secondary teaching.

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 85 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 consists of a minimum of 15 units in French, six of which must be upper division.

For the Standard 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, with specialization in either elementary or secondary teaching, may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Specialization in Elementary Teaching

Preparation for the major. French 1, 2, 3, 4, 10, 11. (20 units.)

Teaching Major. Twenty-four upper division units to include French 101A, 101B, 102A, 102B, 122, 140, 141, 150, and three upper division units of electives in French. In addition to the major, credential candidates must complete Education 136.

Proficiency Examination: Before taking a student teaching assignment in the language, the candidate for the credential must pass an oral examination in the language administered by the Department of French and Italian. The candidate must consult with the chairman of the Department of French and Italian for permission to take this examination.

Specialization in Secondary Teaching

Preparation for the major. French 1, 2, 3, 4, 10, and 11. (20 units.)

Teaching Major (Undergraduate). A minimum of 24 upper division units in French to include French 101A, 101B, 102A, 102B, 122, 140, 141, and six upper division units of French in the period literature of the language.

Postgraduate Year. Six units of graduate courses in French.

Proficiency Examinations: Before taking a student teaching assignment in the language, the candidate for the credential must pass proficiency examinations, oral and written, administered by the Department of French and Italian, in the language and its area civilization. (French 40-41 or 140-141 prepare for this latter examination in the area civilization.) The candidate must consult with the chairman of the Department of French and Italian for permission to take these examinations.

French Minor

365-8 10 185

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in French for elementary teaching consists of not less than 20 units in French, six units of which must be in upper division courses.

Proficiency Examination: Before taking a student teaching assignment in

the language, the candidate for the credential must pass an oral examination in the language administered by the Department of French and Italian. The candidate must consult with the chairman of the Department of French and Italian for permission to take this examination.

Specialization in Secondary Teaching

The minor in French for secondary teaching consists of not less than 20 units in French, exclusive of course equivalents, to include in the lower division, 349

French 1, 2, 3, 4, 10, and 11 (or equivalents); and in the upper division, French 101A, 101B, 102A, 102B, and 122.

Proficiency Examinations: Before taking a student teaching assignment in the language, the candidate for the credential must pass proficiency examinations. oral and written, administered by the Department of French and Italian, in the language and its area civilization. (French 40-41 or 140-141 prepare for this latter examination in the area civilization.) The candidate must consult with the chairman of the Department of French and Italian for permission to take these examinations.

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.

Lower Division Courses

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.

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.

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 153. Limit of nine units applicable 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: French 4 and 11.

Translation into French from moderately difficult English prose. Outside reading of modern French prose, with written reports in French monthly. Readings and oral discussions in French of various facets of French life and culture.

102A-102B. Survey of French Literature (3-3)

Prerequisite: French 4.

Important movements, authors, and works in French literature from the Middle Ages to the present. French 10 and 11 strongly recommended for liberal arts minor.

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 theater 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 Croneille, 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.

370-8 10 205

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.

140. French Civilization (3)

Prerequisites: French 4 and 11.

French culture of the past and present, with emphasis on the arts, philosophy and literature.

141. French Civilization (3)

Prerequisites: French 4 and 11. Continuation of French 140.

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

Prerequisistes: French 1, 2, 3, 4, or equivalents, 10 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.

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. Six units maximum credit. 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: 18 units of upper division French.

The history of the French language from the beginnings through the sixteenth century.

202. Medieval French Literature (3)

Prerequisite: 18 units of upper division French and French 201. Readings in the principal monuments, trends and genres of medieval French literature from the beginnings through François Villon.

203. Literature of the French Renaissance (3)

Prerequisites: 18 units of upper division French and French 201.

Literature and thought of the 16th century as represented in the works of Rabelais, Montaigne, Ronsard, Du Bellay, etc.

220. Explication de Textes (3)

Prerequisite: 18 units of upper division French.

An introduction to the analytical French approach to the detailed study of literature. Demonstrations by instructor and students. This course aims to give teachers of French a greater mastery of French language and literature.

230. Methods of Literary Criticism (3)

Prerequisite: 18 units of upper division French.

Theory and practice of various traditional and modern critical approaches to specific literary texts.

250. Seminar in Seventeenth-Century Literature (3)

Prerequisite: 18 units of upper division French.

Directed research in the works of a representative author or in a genre or movement.

Maximum credit six units applicable on a master's degree.

260. Seminar in Eighteenth-Century Literature (3)

Prerequisite: 18 units of upper division French.

Directed research in the works of a representative author, or in a genre or movement.

Maximum credit of six units applicable on a master's degree.

270. Seminar in Nineteenth-Century Literature (3)

Directed research in the works of a representative author, or in a 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 units of upper division 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.

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290. Research and Bibliography (3)

Prerequisite: Eighteen units of upper division 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)

Prerequisite: Eighteen units of upper division 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)

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)

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)

THE N 10 255

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.

General Language

Administered by the Dean of the College of Arts and Letters

Faculty

Faculty assigned to teach courses in general language are drawn from departments in the College of Arts and Letters.

Major or minor work is not offered in general language.

Lower Division Courses

20. Latin and Greek Word Derivation (3) I, II

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.

Upper Division Courses

196. General Linguistics (3) |

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.

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

Individual study. Maximum credit six units. Prerequisite: Consent of instructor.



Geography

In the College of Arts and Letters

Faculty

Emeritus: Molitor, Post, Storm

Professors: Eidemiller, Finch, Kiewiet de Jonge, Richardson, R., Taylor, J., Yahr

Associate Professors: Blick (Chairman), Greenwood, Heiges, Johnson, W. A., Keen, O'Brien, Pryde, B., Wright

Assistant Professors: Colombo, Ford, L., Quastler, Stutz, van Beek

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.

Teaching major in geography with specialization in secondary teaching.

Teaching minor in geography with specialization in both elementary and secondary teaching.

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 85 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, 54, and 60 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 110-111 and 150-159 and 170-179, three additional units from either of the above groups, three units from courses numbered 119-139, three units from 180, 182 or 185, three units from 181A or 183, three units from 198 taken from three different instructors, and three units of electives.

Geography Minor

The minor consists of a minimum of 15 units in geography, nine of which must be upper division.
Geography Major

For the Standard 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.

Specialization in Secondary Teaching

Preparation for the major. Geography 1 and 2 (6 units). Four to six units selected from Geography 3, 4, 5, 7, 54, and 60 are strongly recommended.

Teaching major. A minimum of 24 upper division units in geography to include nine units in courses numbered 100-111 and 150-179, six units in courses numbered 119-139, six units in courses numbered 180-189, and three units of electives.

Postgraduate Year. Six upper division or graduate units acceptable toward the credential, to be selected with the help of the departmental adviser.

Geography Minor

For the Standard Teaching Credential

The minor in geography for the standard teaching credential with specialization in either elementary or secondary teaching consists of not less than 20 units in geography to include Geography 1 and 2, and a minimum of 9 units of upper division courses (12 units if major is a non-academic major) in geography. Additional geography electives must be taken to complete the minimum of 20 units.

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)

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)

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)

Man's impact upon and interaction with the natural environment, including suggested alternatives to existing abuses. Not open to students with credit in Geography 170.

54. Urban Geography (3)

Prerequisite: Geography 1 or 2.

The principles and concepts in urban geography, the origin and development of cities, urbanization, and urban problems. Not open to students with credit in Geography 154.

60. Economic Geography (3) I, II

Prerequisite: Geography 1 or 2.

Man's economic activities over the earth's surface. Principles of agricultural production, extractive industries, manufacturing regions, industrial location, and transportation and trade.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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)

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)

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; 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, and loess.

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 relaated to empirical phenomena through laboratory experimentation and observation. Best suited to concurrent enrollment in Geography 105.

107. Geography of Natural Vegetation (3)

Prerequisite: Geography 1.

The natural vegetation associations of the world their distribution, classification and development, including relationship to human activities.

110. Historical Geography (3) 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. A maximum of six units will be allowed for Geography 2, and 112A or 112B.

119. Geography of San Diego County (3) II

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, 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) 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, economics, and trade of the region.

124. South America (3) |

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) 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.

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.

Geography

127. Soviet Union (3) I, II

Prerequisite: Geography 1 or 2.

Natural resources, agricultural production, industrial growth, and transportation.

129. Oceania (3) II

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 people 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) |

Geography as it relates to the strength of nations and international relations.

151. Economic Geography: Primary Production (3) |

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)

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.

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)

Prerequisite: Geography 1 or 2.

Quality of man's habitat in a changing human and natural environment; water, air and soil pollution, urban crowding, disappearance of open space, and decreasing opportunities for outdoor recreation. Not open to students with credit in Geography 7.





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

Prerequisite: 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)

Prerequisites: 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)

Prerequisites: Geography 1 or 2. Economic geography of use of marine biotic and mineral resources.

180. Field Geography (3) II

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)

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: Georgraphy 181A. Advanced laboratory instruction and practice in cartographic techniques.

181C. Automated Cartography (3)

Two lectures and three hours of laboratory.

Prerequisite: Georgraphy 180, 181A, 182, 183, 185, or 187.

Computerized methods in presenting for comprehension spatially variable information of a quantitative nature; examination of existing automated map-





183. Map Investigation (3) I

Two lectures and three hours of laboratory.

Prerequisite: Geography 1 or 2.

Interpretation and evaluation of maps. History of developments in cartography. Study of major mapping organizations of the world and examination of their products.

184. Field Geography of the Arid Southwestern United States (3) II

Prerequisites: Geography 1 and 2.

An orientation to the Southwestern United States; emphasis upon 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)

Prerequisites: Two geography courses including one in upper division; Mathematics 12, and Mathematics 18 or a higher numbered course.

Use of quantitative methods in geographic research.

187. Remote Sensing of the Environment (3)

Two lectures and three hours of laboratory.

Prerequisites: Geography 1, 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 bio-physical 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 bio-physical environment. Practice in planning, design, execution and interpretation of remote sensing studies.

196. Geographic Internship (3)

Students will be assigned to various government agencies and industry and will work under the joint supervision of agency heads and the couse 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.

Geography

198. Directed Readiings in Geographic Literature (1)

Prerequisites: credit or concurrent enrollment 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. Six units maximum credit.

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 the departmental advisory commitee.

Characteristics of climatic elements for a selected area or 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 the departmental 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 regions, such as South America, Southeast Asia and 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, and graphic presentation. Maximum credit six units applicable on a master's degree.

255. Seminar in Urban and Settlement Geography (3) Prerequisite: Geography 155 or 156 and approval

Prerequisite: Geography 155 or 156 and approval of the departmental 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 the departmental 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)

Prerequisite: Geography 159 and approval of the departmental advisory commitee.

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 the departmental 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 units of upper division geography, or 170, or 171, and the approval of the departmental advisory committee.

272. Seminar in Environmental Quality (3)

Prerequisites: Geography 7 and three units of upper division geography, or 170, and the approval of the departmental advisory committee.

275. Seminar in Recreational Geography (3)

Prerequisites: Geography 175 and consent of departmental advisory committee. Geography 7 or 170 and 171 are recommended.

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 gartography and approval of departmental 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.

285. Seminar in the Use of Quantitative Methods (3)

Prerequisites: Mathematics 18 or a higher numbered course in mathematics, Geography 185 or any upper division course in mathematics, Geography 185 or any upper division course in statistics, and approval of departmental advisory committee.

Application of quantitative methods to problems in human and physical geography. Maximum credit six units applicable on a master's degree.

288. Seminar in Remote Sensing of the Environment (3)

The ue of remote sensing techniques in the study of man's cultural and bio-physical environment.

296. Geographic Internship (3)

Prerequisite: Approval of the departmental graduate advisory committee, and consent of the instructor.

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 applicable on a master's degree.

297. Research (1-3)

Research in one of the fields of geography. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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, Peterson, G., Roberts, Thomas, B., Threet (chairman)

Associate Professors: Frederiksen, Kern, Krummenacher, McEuen, Ptacek Assistant Professor: Abbott

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 85 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 (30 units). Recommended: a foreign language and a course in mechanial 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. Mathematics 12 and 50; Physics 4A, 4B, 4C (20 units). Recommended: Mathematics 7, 51, and 52; Chemistry 109 or 110.

Major (continued). Geology 30 and 106; 126, or 124 and 125; 130, and at least one of the following: Geology 105, 107, 120, 121, 125, 140, 150, or 160. Electives approved by the departmental adviser to complete 36 upper division units. Recommended: Engineering 2, Chemistry 109 or 110.

(b) Paleontology

Additional preparation for the major. Biology 15; Mathematics 50, or 21 and 22 (alternative of 21 and 22 should not be selectted by students planning academic work beyond the B.S. degree); Physics 2A-2B and 3A-3B, or Physics 4A-4B-4C (16-21 units). Recommended: Zoology 50.

Major (continued). Geology 106, 107, 116, 126, and electives approved by the departmental adviser to complete 36 upper division units.

(c) Geophysics

Additional preparation for the major. Mathematics 7, 50, 51, and 52; and Physics 4A-4B-4C, 73. Recommended: Engineering 30 (30 units).

Major (continued). Geology 110, 112, 120, 121, 130, Mathematics 119, Physics 110, 120A. 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, and 52 (33 units). Recommended: Mathematics

Major (continued). Geology 131; Chemistry 110A-110B. Either Geology 106 and 126, or Geology 124 and 125. Electives approved by the departmental adviser to complete 36 upper division units. Recommended: Geology 130.

(e) Engineering Geology

Additional preparation for the major. Geology 30; Engineering 1 or 20, 2 (unless 128A is to be taken as part of the major), 30, 50A; Mathematics 50, 51, 52; Physics 4A-4B-4C (35-38 units).

Major (continued). Geology 110 or 112, and 126; Engineering 116, 120A, 122, 123, 128A (unless Engineering 2 has been completed as a part of the preparation for the major); and 3 units chosen with the approval of the departmental adviser (36 units).

Because of the preparation in mathematics, physics, and geology called for in this emphasis, the School of Engineering will not require of majors with this emphasis the prerequisites specified for engineering majors who wish to take Engineering 116, 122 and 128A.

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:

370 56-8 10 495

Geology 14, 21, or 24 (7-8 units), and at least two of the following: Geology 100, 102, 106, 108A, 126, or 140. Those interested in environmental studies should take at least two of the following: Geology 14, 21, 24, 30 (7-8 units), and at least two from: Geology 100, 105, 130, 140, 150. Those interested in oceanography should take at least two from: Geology 14, 21, 24, 30, and at least two from 106, 116, 126, 130.

Lower Division Courses

2. General Geology (3) I, II

Earth materials and processes, the development of land forms, 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 (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 (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.)

14. Geomorphology (3) I

Prerequisite: Geology 5.

Development and classification of land forms with consideration of processes involved.

21. Mineralogy (4) I, II

59-8 10 510

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.

Geology



Geology

24. Petrology (4) I, II

Two lectures and six 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 and thin section. Introduction to the use of the petrographic microscope.

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.

Prerequisite: Engineering 2 or 24.

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 153. Limit of nine units applicable 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 4, 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) |

Prerequisite: Geology 5.

A regional analysis of North American geology, its structural, stratigraphic, and tectonic patterns and hypotheses concerning their origin and evolution.

105. Photogeology (3) II

Tw lectures and three hours of laboratory.

Prerequisites: Geology 14 and 100.

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.





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) 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) |

Prerequisite: Geology 108A.

Geologic investigation of an assigned area with preparation of an individual report and a geologic map.

110. Petroleum Geophysics (3) |

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)

Prerequisite: 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 for a maximum of four units.

372 61-810 \$20

120. Ore Deposits (3) I

Prerequisites: Completion 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: Completion 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. Prerequisites: Geology 124 and 130.

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 and Chemistry 1B; Mathematics 21 and 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

Prerequisites: Geology 24 and credit or concurrent registration in Chemistry 110B.

Application of physical-chemical methods and principles to the solution of geologic problems. Emphasis on major earth cycles and processes.

140. Marine Geology (3) |

Two lectures and three hours of discussion, demonstration, and field work. Prerequisites: Geology 5, and either Geology 14, 24, 102, 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.



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 101.

Theory and application of X-ray diffraction to the study of materials.

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

Refer to Honors Program.

173. Stratigraphic Palynology (3) II

One lecture and six hours of laboratory.

Prerequisite: Botany 172.

Recovery and study of spores, pollen grains, and microplankton from ancient and modern sediments; stratigraphic, ecological, and botanical significance of these microfossils. (Formerly numbered and entitled: Geology 221, Advanced Palynology.)

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 for maximum credit of six units.

198A. Senior Research (1) I, II

Prerequisite: Credit or concurrent registration in Geology 108A.

Three hours of laboratory and discussions.

Selection and design of an individual research project. Oral and written progress reports.

198B. Senior Research (2) I, II

Six hours of laboratory and discussions.

Prerequisites: Geology 198A and Geology 108B.

Individual research project, involving field work in a selected field of geology, with oral reports of progress to the class and a final oral and written report of work accomplished.

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

Individual study in field, library, laboratory, or museum work. Four units maximum credit.

Prerequisites: Acceptable grade average in at least 12 upper division units within the major and consent of staff.

Graduate Courses

200. Seminar (1-3)

72-8 10 575

Prerequisite: Consent of instructor.

An intensive study in advanced geology, topic to be announced in the class schedule. Maximum credit six units acceptable on a master's degree.



208. Graduate Field Geology (3)

One lecture and nine Saturday field sessions. Prerequisite: Geology 108A. Experience in one or more specialized aspects of field mapping.

209. Igneous Petrology (3)

Two lectures and three hours of laboratory.

Prerequisites: Geology 125 and 130.

Investigation of problems in igneous petrology, using petrography, geochemistry, and experimental methods.

211. Metamorphic Petrology (3)

Two lectures and three hours of laboratory.

Prerequisites: Geology 125 and 130.

Investigation of problems in metamorphic petrology using petrography, geochemistry, and experimental methods.

212. Sedimentary Petrology (3)

Two lectures and three hours of laboratory. Prerequisites: Geology 124 and 126. Investigation of problems in sedimentary petrology.

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. Paleocology (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 among fossil organisms.

229. Seminar: Advanced Studies in Stratigraphy (3)

Two seminars and three hours of laboratory.

Prerequisite: Geology 107.

Regional stratigraphic patterns in North America and their historical implications.

235. Marine Processes (3)

Prerequisite: Geology 126.

Marine erosion, transportation and deposition and their geologic consequences.

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)

Prerequisite: Consent of the Department.

Supervised research in an area of geology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with departmental chairman and instructor.

299. Thesis (3)

76-8 10 595

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a thesis for the master's degree.

In the College of Arts and Letters

Faculty

Emeritus: Walker

Professors: Lawson, Paulin (Chairman), Wolf

Associate Professors: Boney, Dunkle, Schaber, Tanaka, Westervelt, Wulbern Assistant Professors: Cross

Offered by the Department of German and Russian

Master of Arts degree in German.

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

Minor in German.

Teaching major in German with specialization in both elementary and secondary teaching.

Teaching minor in German with specialization in both elementary and secondary teaching.

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 85 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.

German Minor

The minor consists of a minimum of 15 units in German, six of which must be upper division.

German Major

For the Standard 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, with specialization in either elementary or secondary teaching may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

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 German and Russian. The candidate should consult the chairman of the Department.

Specialization in Elementary Teaching

Preparation for the major. German 1, 2, 3, 4, 10, and 11. (20 units.)

Teaching Major. A minimum of 24 upper division units to include German 101A-101B, 102A-102B, 125A or 125B, 140, 141, 150, and three upper division units of electives in German. In addition to the major, credential candidates must complete Education 136.

Specialization in Secondary Teaching

Preparation for the major. German 1, 2, 3, 4, 10, and 11. (20 units.)

Teaching Major (Undergraduate). A minimum of 24 upper division units in German to include German 101A-101B, 102A-102B, 140, 141, and six upper division units of electives in German. In addition to the major, credential candidates must complete Education 136. Recommended: German 148, 150; and 125A or 125B.

Postgraduate Year. Six units of graduate courses in German.

Proficiency examination. As above, for the major.

German Minor

84-8 10 635

For the Standard Teaching Credential

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 German and Russian. The candidate must consult with the chairman of the Department of German and Russian concerning this examination.

Specialization in Elementary Teaching

The minor in German for elementary teaching consists of not less than 20 units in German, six units of which must be in upper division courses.

Specialization in Secondary Teaching

The minor in German for secondary teaching consists of not less than 20 units in German to include in the lower division, German 1, 2, 3, 4, 10, and 11; and in the upper division, German 101A-101B, 102A-102B, and 125A or 125B

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

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.

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.

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)

Prerequisites: German 1 and 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.

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 153. Limit of nine units applicable 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. Oral and Written Composition (3-3)

Prerequisites: German 4 and 11.

Translation into German of moderately difficult English prose. Free composition in German, written and oral. Outside reading of modern German plays and prose, discussions In German. Oral and written practice in conversational German.

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)

Prerequisite: 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 19th 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)

Prerequisite: 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 contents 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.

140. German Civilization (3) |

Prerequisites: German 4 and 11.

Conducted in German. Primarily for German majors and minors. German culture from the Middle Ages to the present, with emphasis on the arts, music and philosophy.

141. German Civilization (3) II

Prerequisites: German 4 and 11. Conducted in German. Primarily for German majors and minors. Continuation of German 140.

148. Applied German Linguisitcs (3)

Prerequisites: 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 units of upper division German. The grammatical structure of Middle High German with readings from the period.

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

Refer to Honors Program.

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

Individual study. Six units maximum credit. This course is intended only for students who are currently enrolled in or who already have credit for for all upper division courses in German available in any given semester.

Graduate Courses

201. History of the German Language (3)

Prerequisite: 12 units of upper division 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: 12 units of upper division 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: 12 units of upper division German. Selected German novels of the 20th century.

205. German Lyric Poetry From Holderlin to Rilke (3)

Prerequisite: 12 units of upper division German. The Major German lyric poets from the beginnings of Romanticism to Rilke.

206. The German Drama of the 19th Century (3)

Prerequisite: 12 units of upper division German.

Representative works of German dramatic literature from Kleist to Hauptmann.

207. Renaissance and Baroque Literature (3)

Prerequisite: 12 units of upper division German. German literature of the 16th and 17th centuries.

208. Goethe (3)

Prerequisite: 12 units of upper division German. Goethe's lyric, epic, and dramatic poetry excluding Faust.

210. Schiller (3)

Prerequisite: 12 units of upper division German.

Schiller as poet, dramatist, critic and philosopher, with emphasis on his classical period.

251. Seminar in Eighteenth-Century Literature (3)

Prerequisite: 18 units of upper division 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: 18 units of upper division 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: 18 units of upper division 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 six units applicable on a master's degree.

265. Seminar in Germanic Linguistics (3)

Prerequisite: 18 units of upper division or graduate German. Directed reseach in a specialized area of Germanic linguistics or philology. Maximum credit six units applicable to a master's degree.

290. Research and Criticism (3)

Prerequisite: Twelve units of upper division 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)

Prerequisite: Advancement to candidacy.

Individual research in a specialized subject in German literature or linguistics.

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisites: 18 units of upper division German and consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

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

Faculty assigned to teach courses in Greek are members of the Department of Classical and Oriental Languages.

Offered by the Department of Classical

and Oriental Languages

Courses in Greek.

Major and minor work in Greek is offered under classics. (Refer to this section of the catalog on Classical and Oriental Languages.)

Lower Division Courses

(See also courses in classics.)

1. Elementary (4) |

Four lectures and one hour of laboratory.

Introduction to ancient Greek, emphasizing grammatical foundations of New Testament and Attic Prose.

2. Elementary (4) II

Four lectures and one hour of laboratory. Prerequisite: Greek 1.

Continuation of Greek grammar with selections from St. John, Herodotus, and Plato. Interpretation, style and grammar.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 Ancient Greek (3) |

Prerequisite: Greek 2.

Graded readings from the masters of Greek prose and poetry. Emphasis on rapid reading.

104. Readings in Ancient Greek (3) II

Prerequisite: Greek 103.

Intensive study of one or more major writers, such as Plato, Euripides, and Demosthenes. Author selected in consultation with students.



Greek

105. Greek Poetry (3)

Prerequisite: Greek 104.

Literary, linguistic, and cultural themes among the Greek poets. Contributions of the Greeks to later ages. May be repeated with new content. Maximum credit six units.

106. Greek Prose Writers (3)

Prerequisite: Greek 104.

Origin and development of the genre of each author and his literary, philosophical, or political contribution to western civilization. May be repeated with new content. Maximum credit six units.

199. Special Study (1-6) I, II

Individual study. Maximum credit six units. Prerequisite: Consent of instructor.

Health Science and Safety In the College of Professional Studies

Faculty

105-511100

Emeritus: Kitzinger

Professors: Burgess (Chairman), Grawunder, Harper, McTaggart Associate Professors: Barnes, Boskin, Fellers, Sorochan Assistant Professors: Bender, Collins, Grant, Kessler, Noto

Offered by the Department

Master of Arts degree in health science.

Major in health science with the B.S. degree in applied arts and sciences. Minor in health science.

Teaching major in health sciences with specialization in secondary teaching. Teaching minor in health sciences with specialization in both elementary and secondary teaching.

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 85 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. (22 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 Consumers Sciences 4; Zoology 8; Psychology 1; and Sociology 1. (22 units.)

Major. A minimum of 36 upper division units to include Biology 140; Health Science and Safety 100, 140, 145, 146, and 177; Psychology 121, 122, and 124; Sociology 120; the remaining units to be selected from health science and safety or closely related fields with approval of the adviser.

Emphasis in Traffic Safety

Preparation for the major. Health Science and Safety 21, 29, 65; Family Studies and Consumer Sciences 4; Psychology; Sociology 1; and Zoology 8 (22 units).

Major. Thirty-six upper division units to include Biology 140; Health Science and Safety 100, 140, 145, 146, 147, 148, 149, 177; Psychology 124; the remaining

Health Science and Safety

units to be selected from health science or closely related fields with approval of the 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.

Health Sciences Major

For the Standard Teaching Credential

Specialization in Secondary Teaching

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 a major in health science for the B.S. degree in applied arts and sciences.

Preparation for the major. Health Science and Safety 21, 29, 65; Family Studies and Consumer Sciences 4; Zoology 8; and Biology 9 or; Sociology 1; and Psychology 1. (19 units.)

Teaching Major (Undergraduate). A minimum of 36 upper division units to include Biology 140; Health Science and Safety 100, 145, 146, 153, 155, 165, 172, Psychology 106; and Sociology 140. Remaining units to be selected from health science and safety and closely related fields. In addition students must complete School of Education requirements which include Education 121P and Health Science and Safety 151.

Postgraduate Year. Six units of postgraduate courses in the major or minor acceptable toward the credential.

Health Sciences Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in health sciences for elementary teaching consists of 21 units to include Health Science and Safety 21, 29, 65; and in the upper division 15 units to include Health Science and Safety 100, 145, 146; and six units of electives in health science and safety. In addition students must complete School of Education requirements which include Health Science and Safety 150 and Education 121P. Courses should be selected in consultation with the departmental adviser in health science and safety.

Specialization in Secondary Teaching

The minor in health sciences for secondary teaching consists of 21 units to include Health Science and Safety 21, 29, 65; and in the upper division 15 units to include Health Science and Safety 100, 145, 146, and six units of electives in health science and safety. In addition students must complete School of Educa-

tion requirements which include Health Science and Safety 151 and Education 121P. Courses should be selected in consultation with the departmental adviser in health science and safety.

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.

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 153. Limit of nine units applicable 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.

140. Traffic Safety (3) |

Problems of traffic safety and programs designed to deal with them.

Health Science and Safety

Health Science and Safety

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.

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. Multi-media Techniques in Driver Instruction (3) I, II

Prerequisite: Health Science and Safety 147.

Teaching devices and techniques in driver education and driver training, including multi-media approaches, psycho-physical testing and multiple car driving ranges; major emphasis on driver simulators, their operation and basic principles.

150. Health Education for Elementary Teachers (2) I, II, S

Prerequisite: Health Science and Safety 21 or 122.

The teacher's function in the different aspects of the elementary school health program, with emphasis upon the planning and presentation of instructional materials and upon community resources and relationships. Not open to students with credit in Health Science and Safety 151.

151. Health Education for Secondary Teachers (2) I, II, S

Prerequisite: Health Science and Safety 21 or 122.

Health status of adolescents and of the teacher's function in the secondary school health program. Emphasis is placed upon statutory requirements in stimulants and narcotics and upon safety and accident prevention. Not open to students with credit in Health Science and Safety 150.

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.

155. Sex Education in the Schools (3) I, II, S

Prerequisite: Health Science and Safety 150 or 151.

Philosophy, current procedures, and materials needed for the development of healthy attitudes and scientific knowledge appropriate to teaching sex education.

160. Introduction to Public Health (3) I

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 Non-Communicable 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) 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. Institute on Current Health Issues (1) S

A critical appraisal and analysis of selected contemporary health issues. May be repeated with different subject matter. Maximum of three units may be applied toward a bachelor's degree.

172. Habit Forming Substances (3) I, II, S

Stimulants, depressants and hallucinogens; use and abuse.

175. Health in Later Maturity (3) I

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) II

Prerequisite: Senior or graduate standing with a major or minor in health education or closely related areas.

Health values, concepts, and attitudes; health products and facilities; hospital care and hospitalization plans; governmental health controls; economic and cultural influences upon health and medical care; professional contributions, relationships, and careers; national and international health programs. Not open to students with credit in Sociology 126.

Health Science and Safety

177. Environmental and Occupational Health (3) |

Prerequisite: Health Science and Safety 65. Environmental hazards of living and working in this modern technological world stressing air pollution, water pollution, and occupational safety.

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: Senior standing and consent of the chairman of the department. Supervised practical experience in local health agencies.

Maximum credit six units. Maximum credit three units applicable on a master's degree.

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

Individual study. Six units maximum credit. Prerequisite: Consent of special study advisor.

Graduate Courses

200. Seminar (3)

Prerequisite: Fifteen units completed in Health Science and Safety. An intensive study of advanced problems in health education. Maximum credit six units applicable on a master's degree.

201. Interdisciplinary Factors in Health Education (3)

Prerequisite: Fifteen units completed 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.

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 Education (3)

Prerequisites: Health Science and Safety 145 and 147.

Research and trends in traffic safety education with emphasis on the problems of organization and 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.

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)

Prerequisite: Health Science and Safety 196.

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.)

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department special study adviser and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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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Health Science and Safety

Hebrew

In the College of Arts and Letters

Faculty

Faculty assigned to teach courses in Hebrew are members of the Department of Classical and Oriental Languages.

Offered by the Department of Classical and

Oriental Languages

Courses in Hebrew.

Major or minor work in Hebrew is not offered.

Lower Division Courses

1. Elementary (4) |

Four lectures and one hour of laboratory.

Pronunciation, oral practice, readings in Hebrew culture, essentials of grammar.

2. Elementary (4) II

Four lectures and one hour laboratory. Prerequisite: Hebrew 1. Continuation of Hebrew 1.

3. Intermediate (4) |

Prerequisite: Hebrew 2. Application of fundamental principles of grammar. Readings in Hebrew cultural material, oral practice.

4. Intermediate (4) II

Prerequisite: Hebrew 3. Continuation of Hebrew 3.

99. Experimental topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

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: Berge (Chairman), Coox, Hanchett, Merrill, Munter, Nasatir, Norman, Pincetl, Rader, Ragen, Ridout, Rohfleisch, Ruetten, Strong, Webb
- Associate Professors: Appleby, Cheek, Chu, Cox, Detweiler, Dunn, Hoidal, O'Brien, Schatz, Smith, C.D., Smith, R.T., Starr, Steele, Stites, Sutherland, Weber
- Assistant Professors: Bartholomew, Cunniff, Davies, Dill, DuFault, Filner, Flemion, J., Flemion, P., Green, Heyman, McDean, McDonald, Oades, Phillips, Vanderwood, 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 with specialization in secondary teaching. Teaching minor in history with specialization in secondary teaching.

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 85 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 Africa; (f) Africa and the Middle East; (g) Topical Subjects. It is the student's obligation, in consultation with the department chairman, to determine which courses fulfill his field requirements.

History Minor

130-811 225

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 Standard 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.

Specialization in Secondary Teaching

Requirements are the same as the requirements for the undergraduate major for the A.B. degree in liberal arts and sciences, as outlined above, with the provision that a minimum of a year concentration in U.S. history must be included in the upper division work. In addition, students must complete, in the postgraduate year, a minimum of six upper division or graduate units.

History Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

The minor in history for secondary teaching consists of a minimum of 21 units to include the following courses: in the lower division, History 4A-4B, or 8A-8B, or 9A-9B, or 17A-17B; and 15 additional units in history to include not less than 12 upper division units selected with the approval of the adviser.

Lower Division Courses

4A-4B. Western Civilization (3-3)

Prerequisite: History 4A is prerequisite to History 4B.

European institutions, culture, and thought from ancient times to the present.

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. 8B meets the graduation requirement in California State and local government.

9A-9B. Asian Civilization (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 upon the rise of American Civilization and ideals. This year course meets the graduation requirement in American history, institutions and ideals. The first semester course, 17A, also meets the requirement in U.S. Constitution; and the second semester course, 17B, meets the requirement in California state and local government. 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 153. Limit of nine units applicable 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 Comtemporary World in Historical Prespective (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.

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 Westen culture. Semester I: Pre-classical antiquity through the time of Sir Isaac Newton. Semester II: From 1700 to the present.

111A-111B. Ancient History (3-3)

Fall semester: Greece to the Roman Conquest. Spring semester: 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 multi-national Holy Roman Empire and its intellectual and social ramifications. Church-state relationships and the development of constitutionalism.





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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.)

131A-131B. Renaissance and Reformation (3-3)

Persons and events connected with the social, political, cultural, economic and religious change between 1300 and 1600.

133A-133B. Europe in the 17th and 18th Centuries (3-3)

Prerequisites: History 4A-4B.

Europe from the Thirty Years War to the French Revolution. Emphasis is on Western Europe and the growth of French preponderance. Semester I: The rise of absolutism to 1713. Semester II: The Enlightenment and the nature of the "old regime" to the eve of revolution. (Formerly numbered History 141A-141B.)

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 Europe in the 19th Century (3-3)

Prerequisite: History 4A-4B. History 136A is prerequisite to 136B. An analysis of the dominant ideas of the 19th century. Coursework is based primarily upon contemporary source materials. (Formerly numbered History 143A-143B.)

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. First semester: From the Concert of Europe (1815) to the Era of *Realpolitik* in the late 19th century. Second semester: 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 History 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.

History

155A-155B. History of the British Empire and Commonwealth (3-3)

British expansion, the founding of the colonies of settlement, and development of colonial policy. Semester II: Creation of the Commonwealth and the liquidation of the Empire.

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 socio-political and intellectual developments in the Near East during and after World War I.

158A-158B. Africa (3-3)

Semester I: Civilization of pre-colonial Africa both north and south of the Sahara from the advent of Islam to 1880. Semester II: Colonial and post-colonial 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-present.

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.





Refer to Honors Program.

167A-167B. Diplomatic History of Latin America (3-3)

Prerequisites: History 8A-8B or six units of upper division history. Origins of Inter-Americanism; relations among the Latin American nations; the origins and development of the American States; Latin America in World Affairs.

168. The Platine Nations (3)

Prerequisite: History 8A-8B or 160A-160B.

The historical development of Argentina, Uruguay, and Paraguay, with emphasis on the 20th century.

171A-171B. Rise of the American Nation (3-3)

Prerequisite: History 171A is prerequisite to History 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 History 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. Civil War and Reconstruction: The United States from Jackson to Grant (3-3)

Lectures and readings on Jacksonian democracy, territorial expansion, the Mexican War, the slavery controversy, the Civil War and Reconstruction.

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.

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History

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 Amerian 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. May be repeated for a maximum of six units.

181A-181B. The Westward Movement (3-3)

The American frontier: Expansion, exploration, settlement and building of the new states, with emphasis upon 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-present. Primarily for history minors and social science majors and minors. Semester I: to 1877; Semester II: 1877 to present. Not open to students who have completed History 17A-17B or equivalent.





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 II: 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) |

Japanese internal history and institutions during the period of indigenous development and Chinese influence including religions, philosophy, literatures, 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 Sub-Continent (3-3)

Semester I: The historical and cultural development of the sub-continent from earliest times through Muslim rule. Semester II: British rule and its legacy in the sub-continent. 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



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

Individual study. Six units maximum credit. Prerequisite: Consent of department chairman and instructor.

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.

202. Seminar in Historiography (3)

A critical study of the works of major historians, their philosophies and the schools of scholarship associated with their work.

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 of six units applicable to the 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 of 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 of six units applicable to 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 of topics selected from a designated area of African or Middle Eastern history. Maximum of six units applicable to 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 of six units applicable to a master's degree.

296. Area Studies in History (1-3)

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)

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)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

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

Teaching minor in Humanities, with concentration in Latin, for secondary teaching. (Described in the section on the School of Education.)

Curriculum in Humanities. (Refer to the section of this catalog on Interdisciplinary programs.)

All classes are conducted in English.

Lower Division Courses

30A-30B. The Legacy of Israel (3-3) I, II

Judaic culture from the post-biblical period to the present, its nature, development, values, and interactions with other cultures. Semester I: post-biblical period through the Renaissance; Semester II: Spinoza to the present.

40. Mythology (3)

Major myths of the Western world in ancient and modern versions.

42. French Civilization (3) |

The major currents and characteristics of French culture, as expressed through the centuries in literature, art, and philosophy.

43. French Civilization (3) II

Continuation of Humanities 42.

44. German Civilization (3) I

Not open to majors or minors in German.

The major currents and characteristics of German culture, as expressed through the centuries in literature, art, and philosophy.

45. German Civilization (3) II

Not open to majors or minors in German. Continuation of Humanities 44.

48-S. European Civilization (3) S

The civilization of Europe through a conducted travel tour.

52. Russian Civilization (3) |

Same course as Russian 40.

The major currents and characteristics of Russian culture, as expressed through the centuries in literature, art, philosophy, and music.

53. Russian Civilization (3) II

Same course as Russian 41. Continuation of Humanities 52.

Humanities

54. Italian Civilization (3) |

Same course as Italian 40.

The major aspects of Italian civilization with particular emphasis upon literature, art, philosophy, music, and history.

55. Italian Civilization (3) II

Same course as Italian 41. Continuation of Humanities 54.

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 153. Limit of nine units applicable 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

138. Introduction to Aesthetic Appreciation (1) |

Same course as Comparative Literature 138.

Major forms of expressions and aesthetic experience in art, music, and literature, presented by an interdepartmental staff through lectures, demonstrations, and panel discussions.

142. French Civilization (3) |

French culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics.

143. French Civilization (3) II

Continuation of Humanities 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.





Humanities

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) |

Same course as Russian 140.

Russian culture of the past and present, with emphasis on the arts, philosophy, literature, and music.

153. Russian Civilization (3) II

Same course as Russian 141. Continuation of Humanities 152.

154. Italian Civilization (3) |

Same course as Italian 140.

The major aspects of Italian civilization with particular emphasis on literature, art, philosophy, music, and history.

155. Italian Civilization (3) II

Same course as Italian 141. Continuation of Humanities 154.

160. The Quest for European Unity (3)

Prerequisite: A year course in Western Civilization. The movement for European unity: background, manifestations, and obstacles.

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

Refer to Honors Program.

170. The Humanities and Modern Man (1) Irregular

Lectures open to the public. May be repeated for a total of 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.

190. Symposium on European Studies (1) S

A series of lectures and discussions on various aspects of current European developments with particular emphasis on efforts toward European coordination, cooperation, and integration. May be repeated with new content. Maximum credit three units.

198. Integration in the Humanities (3) I, II

173-511 440

The investigation of topics common to two or more departments, with oral and written reports. Required of all senior majors in divisional programs in humanities, and open to seniors with majors in English, foreign languages, history, and philosophy.



Humanities

199. Special Study (1-3) I, II Individual study. Six units maximum credit. Prerequisite: Consent of the instructor.

Industrial Arts In the College of Professional Studies

Faculty

Emeritus: Ford, Luce

Professors: Anderson, W., Hammer, Irgang, McLoney, McMullen, J. D.

Associate Professors: Bailey (Chairman), G., McEowen

Assistant Professors: Blackmun, Dirksen, Guentzler, Lybarger, Marsters, Rasmussen, Sorenson

Offered by the Department

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 with specialization in secondary teaching. Teaching minor in industrial arts with specialization in both elementary and secondary teaching.

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

Preparation for the major. Industrial Arts 11, to be taken at the beginning of the major; five courses selected from Industrial Arts 10, 15, 21, 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.

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 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 Standard 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.

For specialization in secondary teaching, the student must fulfill the requirements for the A.B. degree in applied arts and sciences and, in his postgraduate year, complete two of the following courses, selected in the same two areas used for the undergraduate major: Industrial Arts 202, 203, 204, 205, 206, 207, 208, 210, 215.

Industrial Arts Minor

For the Standard Teaching Credential

The minor in industrial arts for the standard teaching credential, with specialization in either elementary or secondary teaching, consists of 26 units to include Industrial Arts 11 and nine units selected from the following lower division courses: Industrial Arts 10, 15, 21, 31, 40, 51, 61, 71, and 81; and in the upper division, twelve units from the following two-course sequences: Industrial Arts 101 and 102, 111 and 112, 115 and 116, 121 and 123, 131 and 133, 141 and 142, 151 and 153, 161 and 163, 171 and 173, 181 and 183.

Lower Division Courses

5. General Industrial Arts Laboratory (3)

One lecture and six hours of laboratory.

Open to all students. A general education elective course.

Practical utilization of tools and materials with emphasis on drafting, metalworking, and woodworking. Individual projects, field trips, and audio-visual materials.

6. Survey of Electronics (3)

One lecture and six hours of laboratory.

A non-mathematical 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) | ||

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, machine, and welding.

40. Introduction to Photography (3) I, II

(Same course as Telecommunications and Film 20)

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, or Industrial Arts 40. (Formerly numbered Industrial Arts 85.)

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 engines, innovative fuels, 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 153. Limit of nine units applicable 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 audio-visual 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) S

One lecture and six hours of laboratory.

Industrial arts laboratory experiences adapted to the individual needs of experienced elementary and secondary school teachers; 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.

Prerequisites: Previous industrial arts experience.

Principles, techniques, and procedures effective in meeting problems involved in a multiple activity program. Individual opportunity to explore each area of the selected industrial arts activities, utilizing a variety of tools, equipment, and materials.

112. Organization of Comprehensive Industrial Arts (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 111.

Planning a multiple activities program; selection and organization of subject matter. Individual opportunity to develop skills and to cooperate in mass production studies.













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 or 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.

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)

188-811515

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.

132. Welding Processes and Procedures (3)

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 131.

A study of the basic welding processes with emphasis on physical principles and properties, inspection methods and equipment operations.

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Industrial Arts

133. Industrial Arts Metalworking (3) I, II

One lecture and six hours of laboratory. Prerequisite: Industrial Arts 131.

Theory and practice in organization and management of industrial arts metalworking facilities, including material procurement, equipment selection, and maintenance.

140. Photography for Teachers (3) I, II

One lecture and six hours of laboratory.

Designed for more mature students to learn photographic skills useful in teaching. Not open to students wih credit in Industrial Arts 140. (Formerly numbered Industrial Arts 185.)

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.

A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques. (Formerly numbered Industrial Arts 186.)

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 techiques 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

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102-111-535

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 152.

Industrial arts woodworking resources and materials; experience in industrial arts planning, laboratory and equipment organization, and personnel management.

161. Intermediate Electronics (3) 1, 11

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 162.

Advanced problems in industrial electronics circuit development, analysis, theory, and application.

164. Basic Digital Computers (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 162.

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 162.

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)

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.

Industrial Arts

172. Power System Diagnosis and Evaluation (3)

One lecture and six hours of laboratory.

Prerequisite: Industrual 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)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 172.

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. May be repeated with consent of instructor.

193. Industrial Arts Organization and Management (2)

Two lectures.

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)

Two lectures.

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.

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 industrual arts activity area. Oral progress reports will be made and a final written report is required.







Individual study. Six units maximum credit. 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 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 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 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 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 laboratory.

Prerequisite: Industrial Arts 163.

Recent developments in the electronics areas. Special research projects and resource materials.



Industrial Arts











Industrial Arts

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 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 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 consideration.

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)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis in industrial arts for the master's degree.

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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

1. Elementary (4) I, II

Four lectures and one hour of laboratory.

Pronunciation, oral practice, readings on Italian culture and civilization, essentials of grammar.

2. Elementary (4) I, II

Four lectures and one hour of laboratory. Prerequisite: Italian 1. Continuation of Italian 1.

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 of 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) |

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.

40. Italian Civilization (3) |

(Same course as Humanities 54)

Conducted in English.

The major aspects of Italian civilization with particular emphasis upon literature, art, philosophy, music, and history.

Italian In the College of Arts and letters

Faculty

Professor: Vergani, G. Assistant Professor: Vergani, L. Lecturers. Mracek, Funston

Offered by the Department of French and Italian

Minor in Italian.

Teaching minor in Italian with specialization in both elementary and secondary teaching.

Italian Minor

The minor in Italian consists of a minimum of 15 units in Italian, six of which must be upper division.

Italian Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in Italian for elementary teaching consists of not less than 20 units in Italian, six units of which must be in upper division courses.

Proficiency Examination: Before taking a student teaching assignment in the language, the candidate for the credential must pass an oral examination in the language administered by the Department of French and Italian. The candidate must consult with the chairman of the Department of French and Italian for permission to take this examination.

Specialization in Secondary Teaching

The minor in Italian for secondary teaching consists of not less than 20 units in Italian, exclusive of course equivalents, to include in the lower division, Italian 1, 2, 3, 4, 10, and 11 or equivalents; and in the upper division, Italian 101A, 101B, 102A, 102B, and 122.

Proficiency Examinations: Before taking a student teaching assignment in the language (Education 180C, 180D), the candidate for the credential must pass proficiency examinations, oral and written, administered by the Department of French and Italian, in the language and its area civilization. (Italian 40–41 or 140–141 prepare for this latter examination in the area civilization.) The candidate must consult with the chairman of the Department of French and Italian for permission to take these examinations.

Italian

41. Italian Civilization (3) II

(Same course as Humanities 55) Conducted in English. Continuation of Italian 40.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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)

Prerequisite: 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 101A–101B, 102A–102B. The poet, his cultural background, and his political-historical mission.

104A-104B. Literature of the Italian Renaissance (3-3)

Prerequisites: Italian 101A, 101B, 102A, 102B.

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.

122. The Foreign Language laboratory (2) |

Conducted in English.

Prerequisite: Admission to teacher education.

Utilization of the language laboratory, applied to the teaching of foreign languages, including operation of equipment and preparation of material. Discussion and demonstration of related techniques. Not open to students with credit in French, German, Spanish, or Russian 122.

140. Italian Civilization (3) |

(Same course as Humanities 154)

Conducted in English.

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215-81210

An advanced course in the major aspects of Italian civilization with particular emphasis on literature, art, philosophy, music, and history with written reports on individual topics.



141. Italian Civilization (3) II

(Same course as Humanities 155) Conducted in English. Continuation of Italian 140.

150. Advanced Phontics and Diction (3)

Prerequisites: Italian 4, 10, and 11.

For students and teachers of Italian wishing to perfect their pronunciation and diction. Correct formation of Italian sounds in isolation and combination. Class exercises, individual drill, and use of special discs and tape recordings.

166. Honors Course (1-3)

Refer to honors program.

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

Individual study. Six units maximum credit. 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.

Italian

Japanese

Japanese

In the College of Arts and Letters

Faculty

Faculty assigned to teach courses in Japanese are members of the Department of Classical and Oriental Languages.

Offered by the Department of Classical

and Oriental Languages

Courses in Japanese.

Major or minor work in Japanese is not offered.

Lower Division Courses

(See also courses in Oriental Languages.)

1. Elementary (4)

Four lectures and one hour of laboratory.

Pronounciation, 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.

3. Intermediate (4)

Prerequisite: Japanese 2.

A practical application of the fundamental principles of grammar. Reading in Japanese of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports.

4. Intermediate (4)

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2213-1 12 33

Prerequisite: Japanese 3.

Continuation of Japanese 3. Reading of selections from Japanese literature.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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**

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

Journalism

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

Faculty

Emeritus: Wimer

Professor: Julian

Associate Professors: Buckalew, Holowach (Chairman), Odendahl, Sorensen Assistant Professors: Haberstroh, Spevak, Whitney, F. Lecturers: Goggin, Schwartz

Offered by the Department

Major in journalism with the A.B. degree in liberal arts and sciences. Teaching major in journalism with specialization in secondary teaching. Minor in journalism.

Teaching minor in journalism with specialization in secondary teaching.

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 85 of this catalog.

A minor is not required with this major; however, several minors are available to increase the scope of training for careers in journalism. Available are those in business administration for students interested in advertising or newspaper management and in radio-television (offered by Telecommunications and Film). Students planning to enter public relations should work out with their advisers a pattern of courses from other departments to supplement requirements for a major in journalism.

Preparation for the major. Journalism 50, 51A, and 51B (9 units).

Major. Twenty-four upper division units in journalism to include Journalism 102, 117, 121, and 104 or 151, and one year's enrollment in 124, 125, or 192.

Journalism Minor

The minor in journalism consists of 15 units in journalism, nine of which must be upper division.

Journalism Major

For the Standard Teaching Credential

All candidates for a teaching credential must complete all requirements for the specialization as outlined in the section of this catalog on the School of Education.

This major, with a specialization in secondary teaching may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Specialization in Secondary Teaching

Preparation for the major. Journalism 50, 51A, and 51B. (9 units.)

Teaching Major (Undergraduate). A minimum of 24 upper division units in journalism to include Journalism 102, 117, 121, and 151 or 104, and one year's enrollment in 124, 125, 192 or 193.

Postgraduate Year. Six upper division or graduate units in journalism.

Journalism Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

The minor in journalism for secondary teaching consists of not less than 20 units to include in the lower division, Journalism 51A, 51B; and in the upper division, Journalism 102, 151 and 192. Additional journalism electives must be taken to complete the minimum of 20 units. Among the electives recommended but not required, are Journalism 49, 152, and 193. Students selecting this minor must have an academic major.

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 85.

51A. News Reporting (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Sophomore standing and ability to type.

Study of reporting techniques, with intensive laboratory practice in gathering, evaluating, and writing the basic types of news stories.
Journalism

51B. Advanced News Reporting (3) I, II

Two lectures and three hours of laboratory.

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. Yearbook and 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 *Del Sudoeste* and campus magazines.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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) 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 required.

102. Law of Mass Communications (3) I, II

Libel, defamation, privacy, censorship, advertising laws, postal regulations, and constitutional guaranties affecting press, radio, television; rights and responsibilities of communicators in reporting public affairs.

103. Magazine Editing (3) II

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227-81270

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 (3) I, II

(Same course as Telecommunications and Film 112)

Gathering, writing, and editing news in special forms required by radio and television; processing wire service copy, still pictures, and kinescopes; filming,





117. History of Mass Communications (3) I

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) |

(Same course as Psychology 122)

The history, methods, and problems of public opinion and attitute 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. May be repeated to a maximum of six units.

125. Television News Production (3) I, II

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.

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Journalism

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

Three lectures and two hours of laboratory. Prerequisites: Journalism 51A and 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) |

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 problems 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) |

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.



Journalism

162. Mass Communication and Society (3) I, II

Prerequisite: Sociology 1 or 102.

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.

179. Public Relations Techniques and Media Usage in Elections (3) II

Use of public relations techniques in political campaigns of all sorts with emphasis on media usage.

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.

182. Publications Workship (3) S

Individual problems in high school publication problems. May be repeated for a maximum of 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) |

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

123-81212

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.



Journalism

192. Newspaper Production (1-3) I, II

Three hours of laboratory required for each unit. Total credit in Journalsim 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. Yearbook and 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 Projection.

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 Projection. 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. May be repeated to a maximum of six units.

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

Individual study. Six units maximum credit. 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; na-





Journalism

tional 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.

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)

Individual study. Maximum credit six units.

Prerequisite: Consent of staff; to be arranged with the department chairman and instructor.

299. Thesis (3)

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Prerequisite: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Refer to graduate course descriptions in the sections of this bulletin under the Departments of Psychology, Sociology, Speech communication, and Telecommunications and Film, for courses listed below.



435

Latin

Latin

In the College of Arts and Letters

Faculty

Faculty assigned to teach courses in Latin are members of the Department of Classical and Oriental Languages.

Offered by the Department of Classical and Oriental Languages

Major work in Latin is offered under classics. (Refer to this section of the catalog on Classical and Oriental Languages.)

- Teaching minor in Latin with specialization in secondary teaching. (Described in the section on School of Education.)
- Minor in Classics. (Described in this section of the catalog under Classical and Oriental Languages.)

Latin Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

The minor in Latin for secondary teaching consists of a minimum of 20 units of Latin, at least 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 latin may be counted as the equivalent of Latin 1; three years the equivalent of Latin 2; and four years the equivalent of Latin 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

(See also Courses in Classics).

1. Elementary (4) |

Four lectures and one hour of laboratory. Study of the language and Roman culture, with reading of selected prose passages.

2. Elementary (4) II

Four lectures and one hour of laboratory. Prerequisite: Latin 1 or two years of high school Latin. Continuation of Latin 1.



3. Intermediate (4) I

Prerequisite: Latin 2 or three years of high school Latin.

A practical application of the fundamental principles of grammar. Reading of selected passages emphasizing the contribution of the ancient culture to our own.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

104. The Augustan Age (3)

Prerequisite: Latin 3.

Selections from such authors as Vergil, Horace, Ovid, the elegiac poets, Livy. Literary aspects of individual genres and influence of each writer on later literature. May be repeated with new content. Maximum credit six units.

105. Literature of the Republic (3)

Prerequisite: Latin 3.

Selections from such authors as Plautus, Terence, Lucretius, Caesar, Cicero, Sallust, Nepos. Analysis of language and style of the author and his relationship to ideas and ideals of the Roman Republic. May be repeated with new content. Maximum credit six units.

106. Literature of the Empire (3)

Prerequisite: Latin 3.

Selections from such authors as Seneca, Petronius, Lucan, Pliny, Martial, Tacitus, Juvenal, Suetonius. Characteristics of genres and style of the Silver Age. May be repeated with new content. Maximum credit six units.

107. Late Latin (3)

251-81219

Prerequisite: Latin 3.

Selections from authors ranging from Tertullian and St. Augustine to Erasmus and Milton. The changes in Latin throughout the centuries. 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.

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 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 85 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 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

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For the Standard Teaching Credential

All candidates for a teaching credential must complete all requirements for the applicable specialization as outlined in the section of the 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 either liberal arts or applied arts and sciences.

Specialization in Elementary Teaching

Preparation for the Major. Mathematics 21, 22, and 60; or 50, 51 and 52 (9–13 units).

Teaching Major. Twenty-four upper division units in mathematics to include mathematics 150A or 152. The remaining units must be approved by the departmental adviser and may include six units in courses from a related area.

Specialization in Secondary Teaching

Preparation for the major. Mathematics 50, 51, and 52. (13 units.) Recommended: Physics 4A-4B-4C.

Teaching Major (Undergraduate). A minimum of 24 upper division units in

Mathematics In the College of Sciences

Faculty

Emeritus: Clark, Emerson

- Professors: Becker, Branstetter, Bray, Burton, Deaton, Drobnies, Eagle, Fountain, Garrison, Gindler, Harris, Harvey, Holmes, Moser, Riggs, Saltz, Shaw (Chairman), Smith, N. B.
- Associate Professors: Bryant, Davis, Ho, Howard, Khazanie, Lopez, Macky, Marcus, Nower, Romano, Smith, J. B., Villone
- Assistant Professors: Burdick, Eckberg, Elwin, Hager, Hintzman, Kaskowitz, Kopp, Korevaar, Lesley, Marosz, Mortensen, Prichett, Ross, Self, Short, Whitman

Lecturers: Bacon, Ikeda

Offered by the Department

Master of Arts degree in mathematics.

Master of Science degree in mathematics.

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 with specialization in both elementary and secondary teaching.
- Teaching minor in mathematics with specialization in both elementary and secondary teaching.

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 85 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

mathematics to include Mathematics 101, 104, 150A, a geometry course and a statistics course. Mathematics 121A is recommended.

Postgraduate Year. Six upper division or graduate units acceptable toward the credential, to be selected with approval of the departmental adviser.

Mathematics Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in mathematics for elementary teaching consists of not less than 20 units in mathematics, six units of which must be in upper division courses.

Specialization in Secondary Teaching

The minor in mathematics for secondary teaching consists of not less than 21 units, exclusive of course equivalents to include in the lower division, Mathematics 40, or qualifying by examination, mathematics 50 and 51; one course in related areas selected from Astronomy 1, Engineering 20A, Physics 4A or 2A or 1A; and in the upper division, nine units (12 units if major is a non-academic major) in mathematics to include Mathematics 104 and six units of mathematics electives.

Mathematics Placement Examinations

All students who expect to enroll in Mathematics 3,4,12, 20, 21, 40, or 50 and have not completed prerequisite courses at San Diego State College 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 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 college 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) |

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 non-metric geometry. Introduction to logic and probability and some concepts from algebra.

12. Elementary Statistics (3) I, II

Two lectures and two hours of laboratory.

Prerequisite: Mathematics 3 at this college or qualification on the Mathematics Placement Examination.

Tabular and graphical presentation, measures of central tendency and variability, analysis of times series, linear correlation coefficient. Applications from the fields of biology, economics, education, engineering and psychology. Not open to students with credit for, or concurrent enrollment in another statistics course.

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.

20. Mathematics for Business Analysis (3) I, II

Prerequisite: Mathematics 3 at this college or qualification on Mathematics Placement Examination.

Basic mathematics for business students, including topics from finite mathematics and calculus.

21. Mathematical Analysis (3) I, II

Prerequisites: Mathematics 3 at this college or qualification on the Mathematics Placement Examination.

Concepts and applications of algebra, analytic geometry and the polynomial calculus, with emphasis on graphical methods. Designed for students who do

Mathematics

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 non-major. (Not open to students with credit in Mathematics 52.)

37. Intermediate Computer Programming (3) I, II

Prerequisite: Mathematics 7.

Further use of problem-oriented language. Machine organization. Introduction to general concepts of machine and machine-oriented language. Additional topics.

40. College Algebra (3) I, II

Prerequisite: Mathematics 3 at this college or qualification on the Mathematics Placement Examination.

Functional notation, mathematical induction, complex numbers, De Moivre's theorem, inequalities, vinomial theorem, determinants, etc. Not open to students with credit in Mathematics 50.

49. Introductory Matrix Algebra (3)

Prerequisite: Math 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 San Diego State, with minimum grade of C, and credit or concurrent registration in Mathematics 4; or qualification on Mathematics Placement Examination.

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 a 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

Prerequisites: Mathematics 50, with minimum grade of C; 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 40 or 21.

Elementary approach to selected topics from mathematical logic, set theory, probability, matrices, linear programing and theory of games.

Upper Division Courses

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

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 51 or 22.

The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry.

106. Projective Geometry (3) |

Prerequisites: Mathematics 51 or 22 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 qualification on a Mathematics Education Placement Test. Mathematics 110A is prerequisite to 100B.

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) I, II

Prerequisites: Mathematics 52. 118A is prerequisite to 118B.

Selected topics from ordinary differential equations, with applications; hyperbolic, elliptic, Bessel and gamma functions, Fourier series and integrals, electromechanical analogies, the Laplace transform, and partial differential equations.

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 and 55B.

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.

130A. Statistical Methods (3) I

Two lectures and two hours of laboratory.

Prerequisite: Mathematics 12 or equivalent statistics course.

F, t, Chi-square tests, analysis of variance, confidence intervals, correlation and regression analysis of covariance.

130B. Statistical Methods (3) II

Two lectures and two hours of laboratory.

Prerequisite: Mathematics 130A.

Sequential analysis, sensitivity experiments, design of experiments, nonparametric and distribution-free statistics.



134. Probability (3)

Prerequisite: Mathematics 51.

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

Prerequisite: Mathematics 7 and 52.

Newton, Lagrange and Chebyshev approximation of functions. Inverse interpolation, numerical evaluation of roots and definite integrals.

135B. Numerical Analysis and Computation (3) II

Prerequisites: Mathematics 119 or 118A and 135A.

Solution of systems of linear equations. Application of numerical methods to the solution of partial differential equations and of integral equations.

136. Data Structures (3)

Prerequisites: Mathematics 37.

Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multilinked structures.

137. Combinatorial Principles for Digital Computers (3)

Prerequisite: Mathematics 23 or 52. Boolean algebra, logical design, and applied combinatorial analysis.

139. Programming Languages (3)

Prerequisite: Mathematics 37.

Formal definition of programming languages including specification of syntax and semantics. Structure of algorithmic languages. List processing and string manipulation languages.

140A. Mathematical Statistics (3) |

Prerequisite: Mathematics 134.

Sampling distributions, law of large numbers, central limit theorem, estimation of parameters, confidence intervals, hypothesis testing, regression.

140B. Mathematical Statistics (3) II

Prerequisite: Mathematics 140A.

Theoretical discrete and continuous distributions, limiting distributions, small sample theory including student's T, Chi-square and F distributions with applications, Analysis of Variance, distribution-free statistics.

141. Statistics, Theory and Applications (3)

Prerequisite: Mathematics 140A.

Sampling and sampling distributions, confidence limits, hypothesis testing, correlation, regression, analysis of variance and covariance, nonparametric techniques.

143. Stochastic Processes (3)

Prerequisite: Mathematics 134.

Wiener and Poisson processes, covariance stationary processes, renewal counting processes, Markov chains.

149. Linear Algebra (3) I, II

Prerequisite: Mathematics 52 or 23.

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 and 55A. 150A is a 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. Theory of Recursive Functions (3)

Prerequisite: Mathematics 150A, 152, or 155.

The recursion theorem, decision problems, reducibility results, Post's classification of effectively enumerable sets, separability, applications to logic and algebra.

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 boundry-initial value problems via separation of variables, eigenfunction expansions, Green's functions, and transform methods. Introductory material includes uniform convergence, divergence theorem's 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.

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 for a total of 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. Six units maximum credit.

Special Courses for National Science Foundation Institute

The following courses are open only to participants in the National Science Foundation Institute, except with consent of instructor.

54. Calculus Review (2)

Review of the fundamentals of elementary calculus.

1805. Recent Trends in Secondary School Mathematics (1)

Recent trends in high school mathematics and in application of mathematics.

181. Selected Topics of Secondary School Mathematics (3)

Selected concepts of secondary school mathematics; recommended modern presentation of these concepts; relation of these concepts to more advanced college mathematics.

1835. Modern Algebra (3)

149-812355

Topics of modern algebra with emphasis on their implications for high school mathematics and with attention to aspects of algebra currently becoming more important.

Mathematics

Mathematics

1855. Modern Geometry (3)

Topics of modern geometry with emphasis on their implications for high school mathematics. Postulational systems, Euclidean and Non-Euclidean geometrics, projective geometry, topology.

187A-187B. Probability and Statistics for Secondary School Teachers (3-3)

Probability, measures of central tendency and dispersion, characteristics of frequency functions of discrete and continuous variates; applications.

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.

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. 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, Gödel's incompleteness theorem.

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.





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 Mathematics 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 Mathematics 226B.

Point sets, functions and limits, continuity, differentiations, Riemann and Lebesgue integration.

227. Fourier Analysis (3)

Prerequisites: Mathematics 121A, 140, and 150.

Fourier series on the real line and on groups, spectral theorems. Tauberian theorems.

228. Generalized Functions (3)

Prerequisites: Mathematics 121A, 149, and 150A.

Schwartz Distribution Theory, and constructive theory with application to Fourier analysis and differential equations.

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)

Prerequisite: Mathematics 150B. 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.

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240A-240B. Advanced Mathematical Statitstics (3-3)

Prerequisites: Mathematics 140B and 121A. Mathematics 240A is prerequisite to Mathematics 240B.

Theories of common distribution functions, derivation of sampling distributions with emphasis on normal populations, estimation of maximum likelihood, ratio tests of parametric hypotheses, general linear hypothesis 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. Non-parametric Statistics (3)

Prerequisite: Mathematics 140B.

Tolerance regions, randomness problems, most powerful rank tests, the invariance methods, consistency and efficiency of tests.

243. Advanced Hypothesis Testing (3)

Prerequisite: Mathematics 140B.

Sequential probability ratio tests, confidence intervals, minimax and invariance principles.

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 and 158.

Turing machines and their variants. Gödel numbering and unsolvability results. Models of computation.



Prerequisites: Mathematics 136 and 139. 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. Applications of Digital Computation (3-3)

Selected topics for information retrieval, artificial intelligence, theorem proving by computer, simulation, computer graphics, learning theory, computer-assisted instruction.

270A-270B. Advanced Numerical Analysis (3-3)

Prerequisites: Mathematics 121A and 135B.

Matrix norms and bound, localization theorems and eigen problem for matrices. Iterative methods for the solution of linear equations and application to partial differential equations. Extrapolation to the limit. Ordinary boundary value problem.

297. Research (1-3)

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)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis or Project (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.



Mathematics





Mexican-American Studies Administered under the Direction of the Dean of Undergraduate Studies

Faculty

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127-81243

Associate Professors: Estupinian, Nunez

Assistant Professors: Gonzalez, Hubbard, Robledo, Vasquez, Velez, Villarino (Chairman)

Instructors: Grijalva, Peraza, Robinson, Urista

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

- Teaching major in Mexican-American studies with specialization in both elementary and secondary teaching.
- Teaching minor in Mexican-American studies with specialization in both elementary and secondary teaching.

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 85 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 twelve units selected from (social sciences) Mexican-American Studies 101, 102, 103, 104, 105, 111, 121, 122A-122B; or twelve units selected from (humanities) Mexican-American Studies 131, 132, 133, 134, 135, 165; or twelve units selected from (bilingual systems) Mexican-American Studies 134, 171A, 171B, 172A, 172B, 173A, 173B, 181 (for college teaching, students are urged to include Mexican-American Studies 171C or 172C, 175, and 185); or twelve units selected from (education) Mexican-American Studies 180, 181, 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 consists of a minimum of 15 units in Mexican-American studies, nine of which must be upper division.

Mexican-American Studies Major

For the Standard 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 with specialization in either elementary or secondary teaching, may be used by students in Teacher Education as an undergraduate major for the A.B. degree in Liberal Arts and Sciences.

Specialization in Elementary Teaching

Preparation for the Major: Mexican-American Studies 1A-1B, 20A-20B, or 41A-41B, and three units from Mexican-American Studies 10, 50, 60, or 65C.

Teaching Major. A minimum of 25 upper division units to include Mexican-American Studies 171A, 171B, 172A, 172B, 173A or 173B, 174A, 175 and 181.

Foreign Language requirement. Student 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.

Specialization in Secondary Teaching

Students specializing in secondary teaching may select course work from bilingual systems, the humanities, or social sciences.

Pre 1B, 20 50, 60 Teo



Preparation for the major. Bilingual Systems, Mexican-American Studies 1A-1B, 20A-20B, or 41A-41B, and three units from Mexican-American studies 10, 30, 50, 60 or 65C.

Teaching Major: A minimum of 24 upper division units to include Mexican-American Studies 100, History 182A-182B, Mexican-American Studies 180; and twelve units selected from (social science) Mexican-American Studies 101, 102, 103, 104, 105, 111, 121, 122A-122B; or twelve units selected from (humanities) Mexican-American Studies 131, 132, 133, 134, 135, 165; or twelve units selected from (bilingual systems) Mexican-American Studies 171A, 171B, 172B, 173A, or 173B, 174B, 175, and 181.

Postgraduate year: Six units of upper division or graduate courses in Spanish or in Mexican-American Studies.

Mexican-American Studies Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in Mexican-American Studies for elementary teaching consists of a minimum of 25 units from course work selected in bilingual systems, including in the lower division Mexican American System 1A-1B, and in the upper divi-

Mexican-American Studies

sion, Mexican American Studies, 171A, 171B, 172A, 172B, 175 and 181.

Specialization in Secondary Teaching

The minor in Mexican American Studies for Secondary Teaching consists of a minimum of 24 units from course work selected in bilingual systems to include in the lower division Mexican American Studies 1A-1B, and in the upper division, 171A, 171B, 172A, 172B, 175, and 181. For course work selected in social sciences it includes in the lower division Mexican American Studies 1A-1B, six units selected from Mexican American Studies 11, 20A-20B, 41A-41B, or 50 and in the upper division, twelve units selected from History 182A, 182B, Mexican American Studies 101, 102, 103, 104, 105, 111, 121, and 122A-122B. For course work selected in the humanities it includes in the lower division Mexican American Studies 1A-1B, six units selected from Mexican American Studies 30, 50, 60 or 65C, and in the upper division twelve units selected from Mexican-American Studies 100, 131, 132, 133, 134, 135, and 165.

Lower Division Courses

1A-1B. Introduction to Mexican-American Studies (3-3)

Introduction to the culture and the civilization of the Maxican-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.

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. 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.

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 153. Limit of nine units applicable 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 Mexican-American from Nahua and European origins to synthesis between the two continents in nineteenth and twentieth centuries. The concept of *Raza de bronce* and *Aztlan*.

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.

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)

Prerequisites: Mexican American Studies 122A is prerequisite to 122B; and consent of instructor.

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, calo, and barrio Spanish: A linguistic study.



Mexican-American Studies

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.

171A. Bilingual Linguistics, Spanish (3)

Prerequisite: Anthropology 120, General Language 196, or Spanish 149. A Spanish-English bilingual description incorporating the study of historical Spanish syntax, historical Spanish phonology, and historical Spanish morphology in the context of generative grammar. Taught in Spanish. 171B. Bilingual Linguistics, Spanish (3)

316-812313

Prerequisite: Mexican-American Studies 171A.

A Spanish-English bilingual description incorporating the study of modern Spanish syntax, modern Spanish phonology, and modern Spanish morphology within the context of generative grammar. Taught in Spanish.

171C. Bilingual Linguistics, Spanish (3)

The semantic analysis of Spanish. Topics include conditions, truth conditions, meaning, and counter-factual conditionals in the Spanish Language. Taught in Spanish.

172A. Bilingual Linguistics, English (3)

Prerequisite: Anthropology 120, General Language 196, or Spanish 149. An English-Spanish bilingual description incorporating the study of historical English syntax, historical English phonology, and historical English morphology within the context of generative grammar. Taught in English.

172B. Bilingual Linguistics, English (3)

Prerequisite: Mexican-American Studies 172A.

An English-Spanish bilingual description incorporating the study of modern English syntax, modern English phonology, and modern English morphology within the context of generative grammar. Taught in English.

172C. Bilingual Linguistics, English (3)

The semantic analysis of English. Topics include conditions, truth conditions, meaning, and counter factual conditioning in the English language. Taught in English.

173A-173B. Bilingual Ethnolinguistics and Analysis (3-3)

Prerequisites: Mexican-American Studies 171A, 171B, 172A and 172B. Semester I: The interrelationship of language and other aspects of human behavior. Language, thought, and reality. Relativity and universals. The origin



netics, 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.

175. Bilingual Practicum (4)

Eight hours of laboratory.

Methods of teaching Spanish and English in the elementary, junior high, and high school, emphasizing all valid linguistic approaches to language learning. May be used in lieu of Education 121E.

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.

181. Bilingual Systems (3)

New methods in bilingual education. Practical field experience in bilingual programs as classroom aids; development of bilingual materials.

182. Mexican-American Curricula

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)

Cultural bias in testing; development of new testing methods.

186. The Educational System (3)

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318-812323

Study and observation in county, city, and community administrative and staff offices. Identification of specific problems relating to Mexican-Americans as administrators and teachers.

197. Senior Survey in Mexican-American Studies (3)

Survey integrating studies of selected areas of Mexican-American studies. Senior report will be written.



Mexican-American Studies

199. Special Study (1-3)

Individual study. Six units maximum credit. 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, W., Moore, H., Walch (Chairman) Associate Professors: Kelly, Phelps Assistant Professors: Anderes, Jokela, Steenbergen Lecturers: Redmond, Watkins

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.
- Teaching major in the biological sciences, with specialization in secondary teaching, requiring an undergraduate major in one of the biological sciences.

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 85 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; 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 (37–41 units.) Recommended: Chemistry 13; and Physics 3A-3B.

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

Preparation for the major. Biology 1, 2, and 15; Chemistry 1A-1B, 4 or 5, and 11 or 12; Mathematics 21 or 40; and Physics 1A-1B or 2A-2B. (33 or 36 units.) Recommended: French or German; Chemistry 13; Mathematics 22 or 50; Physics 3A-3B.

Major. A minimum of 36 upper division units in microbiology and approved related fields to include Microbiology 101, 102 or 115, 103, 104, 105, and 107; Chemistry 115A-115B. 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 and 109, and Zoology 128. Recommended Zoology 108 and 126.

Clinical Technologist. To fulfill the academic requirements to qualify for the licensing examination given by the State for Clinical Technologist, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 102 and 109, and Zoology 128, and should substitute Chemistry 114A-114B for Chemistry 115A-115B. Recommended: Biology 101, 103 and 151; Microbiology 108, 111A-111B, 114 or Biology 155; and 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 85 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, 3A-3B; Mathematics 21 and 22, or 40 and 50; Biology 15; Geology 2; Health Science and Safety 65; and Sociology 1. (48–54 units.)

Microbiology

Major. A minimum of 36 units to include Microbiology 101, 102, 111A-111B, 112, 113; Zoology 128 or Biology 150; Health Science and Safety 160; Public Administration 160; Engineering 123, 125.

Microbiology Minor

The minor consists of a minimum of 15 units in microbiology to include Microbiology 101, 103 and 105.

Biological Sciences Major

For the Standard Teaching Credential

Specialization in Secondary Teaching

The teaching major for secondary teaching requires an undergraduate major in one of the biological sciences: biology, botany, microbiology, or zoology. All elective courses in the major must have prior approval by the adviser for biological sciences teaching programs.

Postgraduate Year. A minimum of six units from courses acceptable for graduate credit on a master's degree program in the biological sciences. Courses must have approval of the adviser for biology teaching programs. (Six units of graduate course work toward completion of a minor may be substituted for this requirement.)

Lower Division Courses

1. General Microbiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Chemistry 1A or 2A. Students with credit in Microbiology 110 may enroll but will receive only one additional unit of credit.

A course for other than biological science majors. A study of the microorganisms of the environment, including the disease-producing organisms, their actions and reactions.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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.

Prerequisites: Chemistry 1A-1B. Students with credit in Microbiology 110 may enroll but will receive only one additional unit of credit.

The actions and reactions of microorganisms in response to their environment, both national and as changed by other organisms, including man. Also includes an introduction to the pathogens.









102. Pathogenic Bacteriology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 101, Chemistry 4 or 5, and 11 or 12. Recommended: Chemistry 114A or 115A.

Bacterial and rickettsial agents of disease in man and other animals. Consideration of host-parasite relationships, the biology of the inciting agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.

103. Fundamentals of Immunology and Serology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 101, and one other advanced Microbiology course; and Chemistry 114A or 115A.

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.

Prerequisites: Microbiology 101, Chemistry 11 or 12. 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 11 or 12; and Physics 2A-2B. Recommended: Chemistry 114A or 115A; Physics 3A-3B.

Physiology of selected bacteria, fungi, and other microorganisms.

107. General Virology (2) I, II

Two lectures. Prerequisite: Microbiology 102 or 115.

Viruses, their structure, function, culture, and methods of study.

108. General Virology Laboratory (2) |

Six hours of laboratory.

Prerequisites: Microbiology 102 and credit or concurrent registration in Microbiology 107.

The culture, isolation, and characterization of viruses.

109. Hematology (4) I, II

One lecture and six hours of laboratory.

Prerequisites: Microbiology 101 and Chemistry 11 or 12.

The study of normal and pathological blood with chemical, physical and microscopic methods.

110. Microbiology and Man (3) I, II

Two lectures and three hours of laboratory.

The biology of microorganisms and their significance in disease, agriculture, sanitation and industry; laboratory exercises designed to complement lecture material. Not open to majors in the biological sciences.

111A-111B. Epidemiology (2-2)

Two lectures.

Prerequisite: Microbiology 102.

Study of the transmission, distribution, and control of infectious and non-infectious diseases in the community.

112. Survey of Environmental Health (4) I

Three lectures and three hours of laboratory and field work.

Prerequisites: Biology 15; Chemistry 1A-1B, 4 or 5, and 11 or 12; Physics 2A-2B, 3A-3B; Geology 2; 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.

Prerequisites: Microbiology 102, Health Science and Safety 160, and credit or concurrent registration in Engineering 125.

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) |

Prerequisites: Microbiology 101; Chemistry 11 or 12. Recommended: Chemistry 114A or 115A.

The genetics of bacteriophages, selected animal viruses and bacteria.

114L. Bacterial and Viral Genetics Laboratory (2) |

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. Prerequisites: Microbiology 101; Chemistry 114B or 115B; and either 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 Biology 110 or Microbiology 115. 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 1.

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134 H 12 623

A course for other than biological sciences majors. Epidemiological concepts and methods as they apply to current community problems.



120. Animal Viruses (4) II

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 107. Recommended: Microbiology 103 and 108. Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and serology.

130. Experimental Immunology (4) |

Two lectures and six hours of laboratory. Prerequisites: Microbiology 103, Chemistry 114A or 115A. The study of selected antigens and anitbodies and their reactions.

140. History of Microbiology (2) I, II

Prerequisite: Microbiology 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, Chemistry 11 or 12, 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. Six units maximum credit.

Prerequisites: 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.

Microbiology

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.

220. Seminar in Industrial and Agricultural Microbiology (2)

Prerequisite: Microbiology 101 or consent of instructor. May be repeated with new content. Maximum credit four units applicable on a master's degree.

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)

Prerequisites: Microbiology 101 and 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 116. 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 and 105; Botany 102; and Chemistry 115B. Biology 110 and 155 recommended.

Physiological, cytological, genetical, and ecological factors relating to pathogenesis of the fungi-causing diseases in man and other animals.







271. Bacterial Viruses (Bacteriophages) (4)

Two lectures and six hours of laboratory.

Prerequisites: Microbiology 105, 107; Biology 155; Chemistry 115B. Effects of temperate and virulent bacteriophages on their hosts, including host-induced modification, lysogenic conversion, and transduction.

272. Advanced Pathogenic Bacteriology (4)

Three lectures and three hours of laboratory.



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)

Research in one of the fields of microbiology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis or Project (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.



Music

In the College of Professional Studies

The Department of Music is a member of the National Association of Schools of Music

Faculty

Emeritus: Smith, L. D., Smith, D., Springston

Professors: Anderson, P., Biggs, Blyth, Genzlinger, Hogg, Hurd, Lambert, Savage, Sheldon, Smith (Chairman), Snider, Ward-Steinman

Associate Professors: Almond, Bruderer, Brunson, Estes, Forman, Mracek

Assistant Professors: Flye, Hill, H., Logan, Loomis, Mitchell, Moe, Mowrey, Overton, Rohfleisch, Yates

Lecturer: Greenbush

Offered by the Department

Master of Arts degree in Music

Major in music with the A.B. in liberal arts and sciences.

Bachelor of Music degree in applied arts and sciences.

Minor in music.

Teaching major in music with specialization in secondary teaching.

Teaching majors in fine arts, fine arts and humanities, and fine arts and social sciences, with a concentration in music. See Education.

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 with music as either a major or minor, (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

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 seven semesters of study on that instrument for the A.B. degree for the Standard Teaching Credential and eight



semesters for the B.M. degree. (The requirements in terms of semesters of study may be reduced for transfer students on the basis of the examination for classification.)

3. 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 a total of at least 12 units for students in the Bachelor of Music program, or 10 units for students in the Bachelor of Arts program for the Standard Teaching Credential; half of these must be 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 85 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 mojor. Music 8A-8B, 10A-10B, 10C, 58A-58B, and four units of Music 50. (21 units.)

Major. A minimum of 24 upper division units to include Music 108, 152A, 152B. six units selected from 154A-154B-154C-154D-154E, four units selected from 170 through 188, six units of upper division electives.

Music Major

183-9170

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 85 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 (24-32 units).

Major. Thirty-seven to 45 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 7 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 6 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 consist-

Music

ing of recorded or "live" performances. Each will deal with representative works of a certain periods, 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. Pianists—8 units of French or German. 2. Vocalists—one semester each of French, German, and Italian. 3. Music History and Literature students—12 units of French or German. 4. All other—8 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 consists of 24 units in music to include Music 8A-8B, 10A-10B, 58A-58B, and 8 units of electives, 6 of which must be upper division, selected in consultation with the departmental adviser.

Music Major

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For the Standard Teaching Credential

Specialization in Secondary Teaching

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, with specialization in secondary teaching, 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, 15A, 58A-58B; five units selected from courses numbered Music 70 through 90; three units selected from courses numbered Music 20 through 35; and four units in the major instrument (31 units).

Teaching Major (Undergraduate). A minimum of 33 upper division units to include Music 147, 148A, 149A, 152A-152B, 158A-158B; five units selected from courses numbered Music 170 through 190; three units selected from courses numbered Music 120 through 135; three units in the major instrument; two units



of upper division music electives; and Education 121R or 121S.

Postgraduate Year. Confer with departmental adviser.

Music Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The teaching minor in music for elementary teaching is restricted to students admitted to and continuing in the credential program for elementary teachers. The teaching minor consists of not less than 20 units to include the following courses: Music 2, 10A, 10B, 10C, 15A, 40, 143, 144, 145, 148A, and two units of music organization courses numbered 170–188.

Specialization in Secondary Teaching

To be admitted to this program the student must demonstrate vocal or instrumental performing ability.

The minor consists of 24 units in music to include Music 8A-8B, 10A-10B, 58A-58B, and 8 units of electives, 6 of which must be upper division, selected in consultation with the department adviser.

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, 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

2. Basic Musicianship for Non-Music Majors (3) I, II

Four hours.

Rudimentary music theory involving the elements of music: melody, rhythm, and harmony. Developing the understanding of these elements through instrumental and vocal experiences which include the use of unison and part-singing, the keyboard, and simple melodic and harmonic instruments.

7. Composition Laboratory (1) II

Three hours of laboratory.

Prerequisite: Consent of instructor.

Original writing in different homophonic and polyphonic forms for various media. May be repeated to a maximum of two units.

8A-8B. Comprehensive Musicianship (21/2-21/2) I, II

Two lectures and two hours of laboratory.

Prerequisite: Music 8A is prerequisite to 8B.

Direct analysis of musical forms as they have evolved historically; sight-singing, keyboard harmony, dictation, part-writing and counterpoint and, where relevant, orchestration, aesthetics, art and architecture, literature, and cultural history.

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 kinder-garden-primary level.

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. 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) |

Two hours.

Fundamentals of brass instruments by lecture and acquisition of elementary skills. Not open to students with credit in Music 130A.

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 on 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	

- I. Bassoon K. French Horn L. Trumpet M. Trombone N. Baritone Horn O. Tuba P. Percussion O. Violin

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 (41/2-41/2) I, II

Four lectures and four hours of laboratory. Prerequisite: Music 8B; Music 58A is prerequisite to 58B. Continuation of Music 8A and 8B.

Performance Organization Courses

The performance organization courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and designed to provide students with practical experience in rehearsal techniques.

70. Chamber Music (1) I, II

Three hours.

Prerequisite: Consent of instructor.

Sections for string, woodwind, brass, piano, vocal, and mixed ensemble groups. Maximum credit four units.

75. Marching Band (1) I

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.

T. Contrabass V. Classical Guitar X. Classical Accordion Y. Composition

R. Viola

S. Cello

U. Harp

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.

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. College Chorus (1) I, II

Three hours.

Open to all persons interested in performing oratorio, cantata, opera, and the extended choral works. No entrace 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

Prerequisite: Consent of instructor. Maximum credit four units.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

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.

Music



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.

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.

123-S. Workshop in Instrumental Techniques and Chamber Music for String, Woodwind and Brass Instruments (2) Summer

Prerequisite: Consent of instructor.

The analysis and interpretation of the literature for each instrument, with performance in various ensemble units; both group and individual instruction in class, under performing professional musicians.

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) |

Two hours.

Fundamentals of brass instruments by lecture and acquisition of elementary skills. Not open to students with credit in Music 30A.

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 elementry skills. Not open to students with credit in Music 40.

141. Performance Studies Pedagogy (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Consent of instructor.

Teaching beginning and intermediate applied music. Survey and evaluation of teaching materials. Observation of individual or group lessons.

- A. Piano
- **B.** Strings

C. Voice

142. Performance Studies Laboratory (2) I, II

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

Prerequisites: Music 2 or 8B.

Music literature suitable for teaching at the elementary school level; includes background information and ways of classroom presentation.

144. Music of the People (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.



147. Perspectives in Music (3) I, II

Prerequisite: Music 2 or 8B.

Musical understandings from non-performance 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; 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 on the music major. Maximum credit for Music 150 is eight units.

A. Piano	J. Bassoon
B. Harpsichord	K. French Hor
C. Organ	L. Trumpet
D. Voice	M. Trombone
E. Flute	N. Baritone He
F. Oboe	O. Tuba
G. Clarinet	P. Percussion
H. Saxophone	O. Violin

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.

Viola	
Cello	
Contrabass	
Harp	
Classical Guitar	
Classical Accordion	1
Composition	



Prerequisites: 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. Small Wind and Percussion Ensemble Literature
- C. Symphonic Literature
- D. Keyboard Literature
- E. Song Literature

158A-158B. Comprehensive Musicianship (41/2-41/2) I, II

Four lectures and two hours of laboratory. Prerequisite: Music 58B; Music 158A is prerequisite to 158B. Continuation of Music 58A-58B.

167. Junior Recital (1) I, II

Prerequisite: Junior standing in music.

Selection of literature for recital program not to exceed thirty minutes in length; theoretical analysis and historical study of scores chosen; preparation for public performance; and examination before committee of music department faculty.

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

Refer to Honors Program.

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. Six units maximum credit. Prerequisite: Consent of the department chairman.



Man

478

222-91265

Music

Performance Organization Courses

The performance group courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and designed to provide students with practical experience in rehearsal techniques.

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. College 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)

Prerequisite: Music 107.

Advanced composition for various media, development of original idiom, intensive study of modern music. Public performance of an extended original work as a project.

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.

212. Advanced Contrapuntal Techniques (3)

Prerequisites: Music 59B and 106.

Traditional and contemporary contrapuntal styles. The development of contrapuntal skills through writing.

213. Seminar: Music Theory (3)

Prerequisites: Music 59B 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.

I. Bassoon

L. Trumpet

O. Tuba

Q. Violin

M. Trombone

P. Percussion

K. French Horn

N. Baritone Horn

- A. Piano
- B. Harpsichord
- C. Organ
- D. Voice
- E. Flute
- F. Oboe
- G. Clarinet
- H. Saxophone

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

- R. Viola S. Cello
- T. Contrabass
- U. Harp
- V. Classical Guitar
- X. Classical Accordion
- Y. Composition
- n

D. Twentieth Century Music E. American Music

253. Musicology (3)

Prerequisites: Music 152A and 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. (Formerly numbered 203.)

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 Soloistic Music: Scores and Tablatures.
- B. Notation of Ensemble Music: White Mensural Notation.

C. Notation of Ensemble Music: Black Notation to the End of Franconian Notation.

D. Notation of Ensemble Music: French, Italian, Mixed and Mannered 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)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis or Project (3)

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Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.







Nursing

Upper Division Courses

100A-100B. Foundations of Nursing (2-2) I, II

One lecture and three hours of laboratory.

Prerequisites: Minimum overall grade point average of 2.50 in courses listed under Preparation for the Major in Nursing and consent of instructor. Concurrent registration in Nursing 101, 102, 103, 104. Nursing 100A is prerequisite to 100B.

Principles and practice of nursing to meet the basic needs of patients.

101. Maternal-Neonatal Nursing (3) I, II

Prerequisites: Three units in marriage and the family. Concurrent registration in Nursing 100A.

Principles of care of mothers, and newborn infants with emphasis on the importance of family relationships.

102. Experience in Maternal-Neonatal Nursing (3) I, II

Nine hours of laboratory.

Prerequisite: Concurrent registration in Nursing 101.

Directed clinical experience in the care of mothers and newborn infants including all phases of the maternity cycle.

103. Psychiatric and Mental Health Nursing (3) I, II

Prerequisites: Three units in human growth and development; three units in personality development; and concurrent registration in Nursing 102.

Basic principles of communication and interpersonal relations in nursing; recognition of normal and disturbed communications; principles and techniques for dealing with continuum of normal and abnormal behavior.

104. Experience in Psychiatric and Mental Health Nursing (3) I, II

Nine hours of laboratory.

Prerequisite: Concurrent registration in Nursing 103.

Directed clinical experience, focusing on the psychotherapeutic role of the nurse in a variety of settings.

105. Nursing Care of the Adult Patient (4) I, II

Prerequisites: Nursng 100A. Concurrent registration in Nursing 100B and 106. Study of health problems of adults resulting from deviations in homeostasis and of medical and/or surgical therapies and nursing therapies utilized to restore optimum health.

106. Experience in Nursing Care of the Adult Patient (4) I, II

Twelve hours of laboratory.

Prerequisite: Concurrent registration in Nursing 105.

Directed clinical experience in the care of adult patients with medical and/or surgical health problems.

116. Trends in Nursing (2) I, II

Prerequisite: Credit or concurrent registration in Nursing 105. Place of nursing in world history and the present social order.

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: Atkinson, Coveny, Johnson, Lee, Moses, Petrie (Director), Sirovica

Associate Professors: Black, Laiho, Salerno

Assistant Professors: Flagg, Hassall, Himes, La Monica, Laws, Leslie, Levy, Moffet, Richards, Verderber

Instructors: Koprowicz

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 85 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.

Preparation for the major. Chemistry 2A-2B; Microbiology 1; Zoology 8; Biology 9; Sociology 1; Psychology 1; three units in normal nutrition; three units in human growth and development; three units in personality development; three units in marriage and the family. (37 units.)

Major. A minimum of 53 upper division units in Nursing to include Microbiology 118, Nursing 131, 132, 133, 134, 135, 136, 137; and 4 units selected from Nursing 150, 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.



Nursing

Nursing

130. Child Health Nursing (2) I, II

Prerequisites: Nursing 106. Concurrent registration in Nursing 131, 132, 133. Nursing care needs of the well and the sick child from birth through adolescence.

131. Experience in Child Health Nursing (4) I, II

Twelve hours of laboratory.

Prerequisite: concurrent registration in Nursing 130. Directed clinical experience in hospitals, clinics, and schools.

132. Community Health Nursing (3) I, II

Prerequisites: Microbiology 118, Nursing 106. Concurrent registration in Nursing 131.

Community facets with emphasis on the family centered approach in providing nursing service.

133. Experience in Community Health Nursing (3) I, II

Nine hours of laboratory.

Prerequisite: Concurrent registration in Nursing 132.

Directed experience in a community health agency which encompasses as its objective the promotion of health and the prevention of disease of each member of the family.

134. Advanced Medical-Surgical Nursing (2) I, II

Prerequisites: Nursing 130. Concurrent registration in Nursing 135. 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 134.

Directed clinical experience in the nursing care of the acutely ill patient and the long-term patient requiring rehabilitation and teaching.

136. Leadership in Professional Nursing (2) I, II

Prerequisite: Nursing 130. Concurrent registration in Nursing 137. Principles of leadership and supervision are stressed as a means of developing effective relationships within the health team. The leadership role of the professional individual is emphasized in relation to his responsibility as a citizen.

137. Management of Patient Care in a Nursing Unit (2) I, II

Six hours of laboratory.

Prerequisite: Concurrent registration in Nursing 136.

Directed clinical experience in planning, directing, giving, and evaluating patient care in a nursing unit. Team nursing concept and methods are utilized. Methods of evaluating clinical work are included.

150. Rehabilitation Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 135.

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Theory of and selected practice in the care of the patient for whom a planned

rehabilitation program is essential. The nurse's role as a health team member.

151. Intensive Coronary Care (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 135.

Theory of and selected practice in the care of the acute cardiac patient in a coronary care-unit.

152. Advanced Psychiatric and Mental Health Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 104. Nursing 132 and 133 are recommended. 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 106. Nursing 132 and 133 are recommended. 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 102.

Theory of and selected practice in the care of maternity patients and the neonate with special emphasis on complications and their effect on the family.

155. Cancer Nursing (4) Irregular

Two lectures and six hours of laboratory.

Prerequisite: Nursing 106.

Theory of and selected experience in the care of the cancer patient. Scope of cancer problem, pathological processes of maligancies, current medical therapies and appropriate nursing intervention are included.

160. School Nursing (3) Extension

Prerequisite: Nursing 133.

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.

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

Refer to Honors Program.

175. Nursing in School Health Services (2) Irregular

Prerequisites: Concurrent registration in Nursing 176.

The philosophy of school health, the functions and responsibilities of the school nurse in planning, organizing and implementing a program of school health services.

Nursing

176. Practicum in School Health Nursing Services (4) Irregular

Twelve hours of laboratory. Prerequisites: Concurrent registration in Nursing 175. Supervised field practice and experience in public school nursing.

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

Individual study. Six units maximum credit. Prerequisite: Consent of instructor.

Oceanography

Administered by the Dean of the College of Sciences

San Diego State 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 Chemistry, Ecology and Genetics jointly with the University of California.

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, 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. Students are expected to 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

Oriental Languages In the College of Arts and Letters

Faculty

Faculty assigned to teach courses in Oriental Languages are members of the Department of Classical and Oriental Languages.

Offered by the Department of Classical and

Oriental Languages

Courses in Oriental Languages.

Major and minor work in Oriental Languages is not offered.

Upper Division Courses (See also Courses in Chinese and Japanese.)

185. Topics in Oriental Studies (1-4)

Topics in Oriental languages, literatures, cultures, and linguistics. May be repeated with new content. Maximum credit six units.



Philosophy In the College of Arts and Letters

Faculty

Emeritus: Mendenhall

Professors: Crawford, P., Howard, R., McClurg, Nelson, S., O'Reilly, Ruja, Shields, Snyder, Warren, E. W., Weissman Associate Professors: Carella, Koppelman (Chairman), Lauer Assistant Professors: Feenberg, Rosenstein, Troxell

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

Preparation for the major. Nine lower division units in philosophy.

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 consists of a minimum of 15 units in philosophy, nine of which must be upper division. Philosophy 101 is recommended.

Lower Division Courses

1A-1B. Introduction to Philosophy (3-3) I, II

Prerequisite: Philosophy 1A, or consent of instructor, is prerequisite to 1B. The place of philosophy in intelligent living. The methods, areas, and significance of philosophical inquiry. Each student is encouraged to think independently and formulate his own tentative conclusions. In Philosophy 1A, emphasis is placed upon problems of value. In Philosophy 1B, emphasis is placed on problems of knowledge and reality.

20. Logic (3) I, II

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Introduction to deductive and inductive logic. Logic and language. Analysis of fallacies. Uses of logic in science and in daily life.

Philosophy

Philosophy

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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: Six units of philosophy. Tales 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. 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: Philosophy 1B.

Historical treatment of major philosophical issues, movements, and figures in American and European philosophy. First Semester: emphasis on Great Britain and the United States; second semester: emphasis on continental Europe.

108. Recent Existentialism (3) |

Prerequisite: Six units of philosophy.

The philosophical aspects of Existentialism. Major emphasis is on the diversity of thought within a common approach as this is shown in individual thinkers.

109. Ordinary Language Analysis (3) II

Prerequisite: Six units of philosophy. The application of linguistic analysis to basic philosophical problems.

110. Philosophy of Law (3) |

Prerequisite: Philosophy 1A, 1B or 20, 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 1A.

Selected aspects of the political structures within which we live, such as law, power, sovereignty, justice, liberty, welfare.



121. Deductive Logic (3) I

Prerequisites: 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.

123. Theory of Knowledge (3) I

Prerequisite: Philosophy 1B.

The major theories of human knowledge: mysticism, rationalism, empiricism, pragmatism.

125. Metaphysics (3) II

Prerequisite: Philosophy 1B.

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) |

Prerequisite: Six units of Philosophy.

Significant and typical value theories and systems and the concrete problems such theories seek to explain. The emphasis will be placed on moral values.

129. Social Ethics (3)

Prerequisite: Philosophy 1A.

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.

Philosophy

133. Philosophy of Education (3) II

Prerequisite: Philosophy 1B.

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.

The philosophical significance of major themes in religious thought. The role of myth and the nature of religious language.

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 1A. 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 upon 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 for additional credit. 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 for credit with different 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.

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

Individual study. Six units maximum credit.

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 Philosphy 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.

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Philosophy

Philosophy

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)

Prerequisites: 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 units of upper division work in philosophy. Basic problems concerning meaning, perception and knowledge.

225. Seminar in Metaphysics (3)

Prerequisite: Twelve units of upper division work in philosophy. An inquiry into the search of significant quantities of reality.

228. Seminar in Ethics (3)

Prerequisite: Twelve units of upper division work 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)

Prerequisites: 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 units of upper division work in philosophy. An analysis, criticism, and comparative study of selected philosophies of art.

237. Seminar in Philosophy of Science (3)

Prerequisites: Twelve upper division units in philosophy including Philosophy 122 and 137.

The methodology of the empirical sciences. The logical stucture of science.

295. Seminar in Selected Topics (3)

Prerequisite: Twelve units of upper division work 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)

Individual study. Maximum credit six units.

Prerequisites: Twelve units of upper division work in philosophy and consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degee.

Philosophy

Physical Education

Physical Education In the College of Professional Studies

Faculty

Emertius: Schwob, Shannon, Sportsman

- Professors: Andrus, Benton, Carter, Fox, Governali, Kasch, Lockman, Murphy, Olsen, A. (Chairman), Olsen, L., Phillips, Schutte, Scott, Terry, Tollefsen, Ziegenfuss
- Associate Professors: Broadbent, Cave, Cullen, Friedman, Selder, Sucec, Wells

Assistant Professors: Barone, Callahan, Franz, Hollyfield, Landis, Moore, Quinn, Smith, Whitby, Wilhelm, Williamson, Willis

Lecturers: Iverson, Lamke, Turner, Zold

Instructor: Gutowski

Offered by the Department

Master of Arts degree in physical education.

Major in physical education with the A.B. degree in applied arts and sciences.

Teaching major in physical education with specialization in secondary teaching.

Minor in physical education.

Teaching minor in physical education with specialization in both elementary and secondary education.

Minor in dance.

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 85 of this catalog.

Students majoring in physical education must complete a minor in another field.

Major for Men

Preparation for the major. Physical Education 8A, 9A, 10A, 12A, 29B, 52, 70, 71, 73; Zoology 8 (16½ units). Students may be excused from skill courses by passing a competency test.

Major. A minimum of 29 upper division units to include Physical Education 162, 164, 167, 168, 169, 172, 174, 175, 176, 177. Recreation 140, and four to six elective units to be selected from the Athletics 180 series. Physical Education 151 or 179 may be substituted for one course of the Athletics 180 requirement.

tion 11A, Drama 5, 8, 30, 31, and 50. (28 units.) Major. A minimum of 24 upper division units to include three to four units from Physical Education 151 or 153A, 154, 157A, 181, 182A, 182B, 183, 184, 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-Theatre 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. (The physical education major with an emphasis in dance does not meet the credential pattern for education.) **Physical Education Minor** The minor, planned in consultation with an adviser, consists of a minimum

Dance Minor

The minor in dance consists of Physical Education 33A-33B, 34A-34B, 48A-48B, 81, 82; two units selected from Physical Education 153A or 184, 181, 182A. and 182B; and 3 upper division units to be selected from the areas of art, music, drama, and others, with the approval of the adviser in dance. (21 units.)

Major for Women

one unit of physical education activity elective; Zoology 8 (14 units).

Preparation for the major. Physical Education 33A, 33B, 34A, 34B, 52, 56A, 56B,

Major. Twenty-seven upper division units to include Physical Education 151 or 154, 155 or 156, 160, 167, 168, and 12 units from health education and/or

physical education courses selected with approval of the department adviser.

Emphasis in Dance

selected from Physical Education 33A, 33B, 34A, 34B; Zoology 8; and 16 units

selected from Art 2A, 2B, 5, 50A, 50B, 61, Music 10A, 35, 51, Speech Communica-

Preparation for the major. Physical Education 48A, 48B, 54, 81, 82; one unit

Physical Education Major

For the Standard 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.

Specialization in Secondary Teaching

Major for Men

Requirements are the same as the requirements for the A.B. degree in applied arts and sciences as outlined above. In addition, students must complete, in their postgraduate year, a minimum of six units of 200-numbered courses

of 15 units in physical education, nine of which must be upper division.

Physical Education

Physical Education

approved by the department adviser.

Major for Women

Candidates for a teaching major for women must in addition to the basic requirements, (a) select the generalist program or (b) select two areas of concentration. Courses may be used to satisfy requirements in more than one concentration.

Basic Requirements for All Students

Preparation for the major. Physical Education 11A, 29B, 32A, 33A, 34A, 47A, 55A–55B, 56A or 56B, Zoology 8 (10 units).

Major. A minimum of 30 upper division units to include Biology 140, Physical Education 160, 162, 167, 168 (15 units).

Postgraduate Year. Six units of 200-numbered courses approved by the department adviser.

Generalist Program

Additional preparation for the major. Physical Education 7A, 33B, 34B, 52, 56A-56B (5½ units).

Major (continued). Physical Education 151, 152, 154, 155, 156, and 122 or 172 (16–17 units).

Concentrations

a) Team Sports

Additional preparation for the major. Physical Education 7A, 52, 57A or 57B, 58A or 58B, $\frac{1}{2}$ unit intramural or extramural sport, and 1 unit of elective (6 units).

Major (continued). Physical Education 156; 9 units selected from 151, 152, 154, 155, 172, and 3 units electives (15 units).

b) Individual Sports

Additional preparation for the major. Physical Education 7A, 16B, 17B, 18B, 19A or 19B, 20B, 22A or 22B, 52, and $\frac{1}{2}$ unit of elective (6 units).

Major (continued). Physical Education 155; 9 units selected from 151, 152, 154, 156, 172, and 3 units of electives (15 units).

c) Gymnastics

Additional preparation for the major. Physical Education 40, 46, 47B, 52, and 2 units of electives (6 units).

Major (continued). Physical Education 152; 9 units selected from 151, 154, 155, 156, 172, and 3 units of electives (15 units).

d) Aquatics

Additional preparation for the major. Physical Education 7A, 24A, 30A or 30B, 36A, 50, and 3 units of electives (6 units).

Major (continued). Physical Education 122; 9 units selected from 151, 152, 154,

155, 156; and 3 units of electives (15 units).

e) Folk Dance

Additional preparation for the major. Physical Education 33B, 52 or 81, 82, and $1\frac{1}{2}$ units of electives (6 units).

Major (continued). Physical Education 151; 9 units selected from 152, 154, 155, 156, 172; and 3 units of electives.

f) Modern Dance

293-91620

Additional preparation for the major. Physical Education 34B, 39, 48A–48B, 81, 82 (6 units).

Major (continued). Physical Education 154; 9 units selected from 151, 152, 155, 156, 172; and 3 units 157A–157B, 183 (15 units).

Postgraduate year. Six units of 200-numbered courses approved by the department adviser.

Physical Education Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

Minor for men. The minor in physical education (men) for elementary teaching consists of not less than 20 units to include, in the lower division, Physical Education 53, 71, 73, and four units to be selected from physical education or recreation; and, in the upper division, Physical Education 175, 177, Health Education 146, Recreation 140, and two units to be selected from physical education or recreation.

Minor for women. The minor in physical education (women) for elementary teaching consists of not less than 22 units to include, in the lower division, Physical Education 1A, 7A, 7B, 33A, 34A, 33B or 34B, 52, 56A, 56B, Recreation 70, and one unit elective; and in the upper division 11 units to include Physical Education 151 or 154, 152, 156, and 162.

Specialization in Secondary Teaching

Minor for men. The minor in physical education (men) for secondary teaching consists of a minimum of 24¹/₂ units to include, in the lower division, Physical Education 8A, 9A, 10A, 12A, 29B, 52, 71, and 73; and, in the upper division, Physical Education 174, 175, 176, 177, Recreation 140, Health Education 146, and two to three units to be selected from either Physical Education 180 series, field experiences in intramurals, or recreation, or Physical Education 151.

Minor for women. The minor in physical education (women) for secondary teaching consists of a minimum of 25 units to include, in the lower division, Physical Education 1A, 7A, 7B, 16A, 17A, 18A, 20A, 32A, 33A, 33B, 34A, 34B, 52, 56A, 56B; and in the upper division, 15 upper division units in physical education to include Physical Education 151 or 154, and 155 or 156.

Coaching Emphasis The minor in physical education with a coaching emphasis (men and women) for secondary teaching consists of 21 units to include, Physical Education 131; 4 units of 133; 161; 165; 1–3 units of 179; 4–6 units of Athletics 180 and/or 181; and 0–6 units of electives in physical education or
other departments by prior approval of the designated coaching minor adviser. The units required for Physical Education 133 and Athletics 180 and/or 181 must be completed from two different sport areas.

Types of Activity Courses

A health history record is required of each student entering college. Adapted physical education classes to care for special needs are offered. The content of the required courses is planned to give each student an opportunity to participate in many activities of carry-over value, developmental nature, and recreational interest. An opportunity is afforded students to participate in competitive sports in the extramural and intramural programs.

Courses

Courses offered for one-half unit credit meet two hours per week or equivalent. "A" signifies a beginning class, "B" intermediate or advanced.

Lower Division Courses

1A-1B. Fundamental Skills (1/2-1/2) I, II

2A-2B. Conditioning (1/2-1/2) I, II

6A-6B. Team Sports (1/2-1/2) I, II

7A-7B. Gymnastics (1/2-1/2) I, II
8A-8B. Basketball (1/2-1/2) I, II
9A-9B. Soccer (1/2-1/2) I, II
10A-10B. Volleyball (1/2-1/2) I, II
11A-11B. Track and Field (1/2-1/2) I, II

12A-12B. Wrestling (1/2-1/2) I, II

17A-17B. Archery (1/2-1/2) I, II

16A-16B. Golf (1/2-1/2) I, II

- 18A-18B. Tennis (1/2-1/2) I, II
- 19A-19B. Bowling (1/2-1/2) I, II
- 20A-20B. Badminton (1/2-1/2) I, II
- 21A-21B. Handball (1/2-1/2) I, II
- 22A-22B. Fencing (1/2-1/2) I, II

24A-24B. Water Craft (1/2-1/2) I, II

Physical Education

- 29A-29B. Swimming (1/2-1/2) I, II
- 30A-30B. Synchronized Swimming (1/2-1/2) I, II
- 32A-32B. Ballroom Dancing (1/2-1/2) I, II
- 33A-33B. Folk and Square Dancing (1/2-1/2) I, II
- 34A-34B. Modern Dance (1/2-1/2) I, II

36A-36B. Selected Activities (1/2-1/2) I, II

May be repeated with new activity for additional credit. See class schedule for semester offerings.

38. Individual Adaptives (1/2) I, II

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.

39. Basic Ballet (1/2) |

40. Ballet for Gymnastics (1/2) II

Men and Women

Professional Theory Courses

46. Rhythmic Gymnastics (1) I, II

Four hours of laboratory.

Progressive skills in free exercise, use of hand apparatus, and tumbling for gymnastics teachers.

47A-47B. Professional Activities: Gymnastics (Women) (1/2-1/2) I, II

Two hours of laboratory.

Study and development of competencies, skills, and knowledges needed for teaching and coaching girls' and women's gymnastics.

48A-48B. Advanced Modern Dance (1-1) I, II

Four hours.

348-9210

Prerequisites: Physical Education 34A and 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. Discussions, lectures and practice.

50. Life Saving (1) I, II

Three hours per week.

Standard American Red Cross course in life saving and water safety, designed to qualify superior swimmers for Senior Life Saving Certificate.

Physical Education

52. Introduction to Physical Education (2) I, II

History and principles of physical education and sports. Study of the objectives of modern physical education with a view towards the development of a basic philosophy and background for professional education. Required of all physical education majors without previous credit in an introductory physical education course.

53. Physical Education of Children (2) I, II

One lecture and three hours of laboratory.

Application of the principles of motor learning and muscular fitness to the elementary physical education activity program.

54. Advanced Skill Techniques in Dance (1) I, II

Four hours of laboratory.

Prerequisite: Consent of instructor.

Progressively difficult dance techniques using several creative approaches. Emphasis on motivation, body design, rhythm, and dynamics.

55A-55B. Professional Activities: Individual Sports (Women) (1-1) I, II

Four hours of activity.

Individual sports golf, archery, and racket sports approached through a study of competencies, skills, and knowledge needed for teaching.

56A-56B. Professional Activities: Team Sports (Women) (1-1) I, II

Four hours of laboratory.

Team sports for women approached through a study of competencies, skills, and knowledge needed for teaching.

57A-57B. Officiating Women's Sports (1-1) I, II

Three hours of laboratory.

Prerequisite: Physical Education 56B.

Practice in officiating techniques in women's sports leading to official's ratings: Fall—volleyball, basketball, and hockey; Spring—softball, track and field, badminton and tennis.

58A-58B. Advanced Professional Activities: Team Sports (Women) (1-1) I, II

Four hours of activity.

Prerequisites: Physical Education 56A-56B.

Team sports basketball, hockey, soccer, speedball, softball and volleyball, and track and field, for women approached through a more concentrated study of advanced skills and knowledge needed for teaching.

70. Orientation to Physical Education (Men) (1) I, II

Orientation and guidance of major students in physical education. Course must be taken during the first semester of enrollment in the major at San Diego State (transfer major students included).

71. Gymnastics (Men) (2) I, II

Six hours of laboratory.

Competency development in gymnastics. Emphasis on skills, movements, rules, officiating, facilities, and organizational procedures in gymnastics.

73. Dance (Men) (2) I, II

Six hours of laboratory.

Competency development in dance. Emphasis on skills, movements, facilities, and organizational procedures in dance.

81. Introduction to Dance (2) I

Dance as an art form with emphasis on the development of contemporary trends; American dance personalities and their contribution. Required of all physical education majors with an emphasis in dance.

82. Rhythmic Analysis Related to Movement (2) II

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.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

122. Water Safety Instruction and Skill Analysis (2) II

Two lectures and two hours of laboratory.

Prerequisites: Physical Education 29B and current American Red Cross Senior Life Saving Certificate.

Analysis of swimming skills. Qualification for American Red Cross Swimming Instruction Certificate.

123. Skin and Scuba Diving (2) I, II

One lecture and three hours of laboratory.

Prerequisites: Thesis or class project requiring underwater collection techniques or Physical Education 29B. Medical examination, waiver for hazardous procedures, passage of competency test in swimming.

Functional knowledge of underwater diving to include diving physiology, hyperbaris conditions, medical hazards, safety procedures associated with Scuba Diving and proper care and operation of equipment.

131. Physical Welfare of the Athlete (3) I, II

Two lectures and three hours of laboratory.

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.) Credit in this course may not be counted towards the Physical Education Major.

133. Theory and Analysis of Coaching Competitive Sports (2) I, II

Prerequisite: Athletics 180 or 181.

Concentrated study to include mechanical analysis tactic, 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)

151. Folk and Social Dance Skill Analysis (Men and Women) (3) I

Two lectures and three hours of laboratory.

Prerequisites: Physical Education 32A and 33B, or completion of folk and social dancing competencies tests.

Folk customs, festivals, and costumes. Selection of dance materials for various age groups. Analysis of teaching techniques.

152. Gymnastics Skill Analysis (Women) (3) |

Two lectures and three hours of laboratory.

Prerequisites: Physical Education 7A or 46, and 47A, or completion of competencies tests in gymnastics and related fields.

Advanced materials in tumbling and gymnastics with emphasis on safety devices, spotting, etc. Analysis of teaching techniques and progressions.

153A-153B. Problems in Dance (2-2)

Prerequisite: Physical Education 48A.

Problems in ethnic or modern dance: history, anthropological basis, stagecraft, accompaniment, costuming.

154. Modern Dance Skill Analysis (Women) (3) II

Two lectures and three hours of laboratory.

Prerequisite: Physical Education 34B, or completion of competencies tests in modern dance.

Advanced skill techniques with emphasis on individual choreography. Selection of materials and course planning for the secondary schools. Class teaching experience. Brief survey of basic literature and current readings in the field.

155. Individual Sports Skill Analysis (Women) (3) II

Two lectures and three hours of laboratory.

Prerequisities: Physical Education 55A and 55B, or completion of competencies tests in archery, badminton, golf, and tennis.

Individual playing techniques, knowledge, rules, and teaching methods in tennis, badminton, archery and golf. Designed for senior majors in physical education who are expected to demonstrate a high degree of competency in

Physical Education

156. Team Sports Skill Analysis (Women) (3) I

Two lectures and three hours of laboratory.

Prerequisites: Physical Education 56A or 58A and 56B or 58B, or completion of competencies tests in basketball, hockey, soccer, speedball, softball and volleyball, and track and field.

Skills, teaching techniques, officiating, and the organization of materials in team sports for women.

157A-157B. Choreography in Contemporary Dance (Men and Women) (3-3)

Two lectures and three hours of laboratory.

Prerequisite: Consent of instructor.

Experimentation in dance, relating contemporary theories to other art forms. Force and time-space relationships as factors of choreography. Semester I: Production problems for large and small groups. Semester II: Production problems for trios, duos, and solos.

160. Mechanics of Body Movement (Women) (3) II

Two lectures and three hours of laboratory. Prerequisite: Physical Education 167.

Efficient use of the body in daily living; evaluation and classification of exercises, study of methods and practice in planning and presenting material.

161. The Psychological Bases of Physical Education (3) I, II

Prerequisite: Psychology 1.

Current issues, experimentation, problems and literature involved in the psychology of motor learning and motor performance.

162. Measurement and Evaluation in Physical Education (3) I, II

Existing skills, tests, and other forms of evaluation used in physical education programs, including practical measuring and comparisons with norms, standards, etc. Closely related to required competencies tests for physical education majors with applications to use in teaching.

163. Physical Growth and Development (3) II

Principles of human growth; performance as affected by developmental levels and individual differences in structure and function.

164. Athletic Injuries (Sports Medicine) (2) I, II

One lecture and three hours of laboratory. Prerequisite: Physical Education 167.

Prevention and care of athletic injuries. Environment and hazards of sports. First aid. Use of prescribed modalities.

165. Administration of Interscholastic Sports and Extracurricular Activities (3) 1, 11

Materials covering the organization and administration of activities such as interscholastic sports, drill teams, extracurricular clubs, special events and programs, cheer leaders, intramural and extramural activities.



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

Refer to Honors Program.

167. Applied Anatomy and Kinesiology (3) I, II

Zoology 8 and Biology 140.

Arthrology, syndesmology, and myology, with special emphasis on movement analysis. Muscle groups and their functional relationships. Application of simple mechanical principles to movement analysis.

168. Physiology of Exercise (3) I, II

Prerequisites: Zoology 8 and Biology 140. Effects of physical activities on the physiological functions of the body.

169. Adapted Activities (2) I, II

One lecture and three hours of laboratory.

Prerequisites: Physical Education 167 and 168, Biology 140, and Zoology 8. Adaptation of programs for the atypical individual, including physical examinations, training, and prescribed exercises, follow-up, instructional problems, and evaluation.

171. History and Philosophy of Physical Education (3) Irregular

Review of the historical and philosophical bases for dance, exercise, games, and sports with emphasis on the United States.

172. Aquatics (2) I, II

Four hours.

Prerequisite: Physical Education 29B or demonstrated competency. Emphasis on skills, movements, rules, officiating, facilities, and organizational procedures in aquatics.

174. Combatives (Men) (2) I, II

Four hours.

Prerequisite: Physical Education 12A or demonstrated competency. Competency development in combatives. Review of skills, strategy, tactics, and emphasis on teaching and coaching procedures.

175. Team Sports (Men) (2) I, II

Four hours.

Prerequisites: Physical Education 8A, 9A, and 10A, or demonstrated competency.

Competency development in team sports. Emphasis on skills, strategy, tactics, rules, officiating, facilities, and organizational procedures in selcted team sports.

176. Individual Sports (Men) (3) I, II

Seven hours.

Competency development in archery, badminton, golf, handball, and tennis. Emphasis on skills, strategy, tactics, rules, officiating, facilities, and organizational procedures in individual sports.



177. Physical Fitness (Men) (1) I, II

One lecture and two hours of laboratory.

Prerequisite: A conditioning course in the required program, or demonstrated competency.

Skills, movements, facilities, and organizational procedures in physical fitness programs. History and current role in the curricula.

178. 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. May be repeated for a total of six units. May not be used as part of the physical education major for either degree or teaching credential.

179. Supervised Field Experience (1-3) I, II

Prerequisite: Consent of the instructor.

Supervised practical experience in the area of physical education. Experience for students in physical education coaching emphasis minor will be in the area of athletic coaching.

181. History and Philosophy of Dance (2) II

(Offered in alternate years)

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.

182A. Dance Composition (Preclassic Forms) (3) |

(Offered in alternate years)

Two lectures and three hours of laboratory.

Prerequisites: Physical Education 54 and 82.

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.

182B. Dance Composition (Modern Forms) (3) II

(Offered in alternate years)

Two lectures, three hours of laboratory.

Prerequisites: Physical Education 54 and 82.

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.

183. Dance Production (3) II

Lecture-demonstration, recital, and concert forms of dance programs. Presentation and staging of original solo and group compositions.

184. Workshop in Dance (1-2) I, II

Choreographic techniques and skills with visiting master teachers; written report or project. May be repeated to a total of four units.



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

Individual study. Six units maximum credit. Prerequisite: Consent of special study adviser.

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 with 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)

Prerequisites: Zoology 8, 22, and Physical Education 167.

Principles of mechanics applied to the analysis of human motion. Electromyography and cinematography as aids in analysis. Kinetic analysis of move-

208. Advanced Physiology of Exercise (3)

Prerequisites: Zoology 8 and 22, Physical Education 167 and 168. 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)

Prerequisites: Zoology 8 and 22, Physical Education 167 and 169. 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.

210. Seminar in Facilities for Physical Education (3)

Prerequisite: Major or minor in physical education or recreation. Individual study of problems related to the planning, development and maintenance of physical education and athletics facilities.

211. Advanced Evaluation in Physical Education (3)

Prerequisite: Physical Education 162.

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.

214. Seminar in Dance Programs (3)

Prerequisite: Major or minor in dance or physical education. Procedures and evaluation of all forms of educational dance with implications for curriculum planning. Lectures and research. Completion of written project.

215. Philosophical Foundations for Physical Education (3)

Major philosophies and their application in physical education.

220. Principles of Neuromuscular Tension (3)

Prerequisite: Physical Education 167. 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.

Prerequisites: Physical Education 169.

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 169.

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 161.

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 162.

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)

Prerequisite: Consent of special study adviser. Individual study. Six units maximum credit.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Physical Science In the College of Sciences

Faculty

Emeritus: Watson

Professors: Dessel (Chairman), Merzbacher

Associate Professors: Feher, Metzger, Shull

Assistant Professors: Dowler, Ingmanson, Shideler, Springer, Thompson, Wallace

Lecturer: May

Offered by the Department

Master of Arts degree in physical sciences for teaching.

Teaching major in the physical sciences, with specialization in both elementary and secondary teaching. 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 consists of a minimum of 15 units, including Physical Science 1, 2, 3, 4, and 130 or 150; three additional upper division units are to be chosen with guidance from the departmental adviser.

Lower Division Courses

1. Principles of Physical Science (3) I, II

Not open to students with credit for or concurrent registration in Physical Science 5.

The nature of the physical universe with emphasis on the whole field of physical science rather than on its separate divisions. May be followed by or, preferably, taken with Physical Science 3 for laboratory credit in natural science.

2. Principles of Physical Science (3) I, II

Not open to students with credit for or concurrent registration in Physical Science 5.

A continuation of Physical Science 1, which course is recommended but not a required prerequisite. May be followed by or, preferably, taken with Physical Science 4 for laboratory credit in natural science.

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Physical Science

Physical Science

3. Experimental Methods in Physical Science (1) I, II

Three hours of laboratory.

Prerequisite: Credit for or concurrent registration in Physical Science 1. 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.

4. Experimental Methods in Physical Science (1) I, II

Three hours of laboratory.

Prerequisite: Credit for or concurrent registration in Physical Science 2. A continuation of Physical Science 3. Fulfills the general education laboratory requirement in the natural science area.

5. Fundamentals of Physical Science (3) I, II

Not open to students with credit for or concurrent registration in Physical Science 1.

Topics selected from Physical Science 1 and 2 to give a single course for the benefit of those students intending to take only one semester of physical science.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

Prerequisite: Physical Science 1. Physical aspects of tides, waves, and currents.

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

Recent and current developments in the physical sciences. Discussions concerning such phenomena as radioactivity, cosmic rays, nuclear energy, tracer techniques, radio telescopy, supergalaxies. Not open for credit to physics majors.

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.



1405. Contemporary Problems in Physical Science (1) S

A series of six weekly lectures on varied aspects of physical science. Reading and reports required of students enrolled for credit. May be repeated to a total of 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) |

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.

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.

Physical Science

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.

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3)

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: Terhune

Professors: Clark, O., Garrison, J., Moe, C., Morris, R., Skolil, Smith, L., Snodgrass, Teasdale, Templin (Chairman), Wolf, Wolter Associate Professors: Cottrell, D., Nichols, P. F., Piserchio, Rehfuss Assistant Professors: Craig, R., Lilly, Roeder, Sarfatt Lecturer: Kalbfell

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.

Teaching major in physics with specialization in both elementary and secondary teaching.

Minor in physics.

Teaching minor in physics with specialization in both elementary and secondary teaching.

Physics Major

With the A.B. Degree inLiberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the requirements listed on page 85 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; Physics 4A-4B-4C or 50-50B, and 73. (25 units.)

Major. Twenty-four upper division units in physics to include Physics 100A-100B, 102A-102B, 120A-120B, and 170. The students should choose the remaining units with the guidance of the departmental adviser. For preparation for graduate work in physics, the student should choose from Physics 106, 114, 151, 175, 180, 186, 190, 196, 198A, and 198B.

Physics

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 85 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 or 50A-50B, and 73.

Major. Thirty-six upper division units in physics and mathematics to include Mathematics 118A-118B, Physics 100A-100B, 102A-102B, 120A-120B, 170, and 198A-198B. Courses are to be selected in consultation with the departmental adviser. Concentrations in the areas of applied physics, physical electronics, 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 or 50A-50B (43 units).

Major. Thirty-nine upper division units to include Chemistry 110A-110B, 112, and 127A; Chemistry 111 or 155; Mathematics 118A or 118B; Physics 100A-100B, 102A-102B, and 190; Physics 120A or 120B.

Physics Minor

The minor consists of a minimum of 15 units in physics, six of which must be upper division.

Physics Major

For the Standard 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 in physics for elementary or secondary teaching is the same as the major for the A.B. in liberal arts and sciences or for the B.S. in applied arts and sciences, except that for secondary teaching the student must take six units of physics in addition in his postgraduate year. All courses in the teaching major must be approved by the adviser in physics for teaching programs.

Physics Minor

For the Standard Teaching Credential

The minor in physics for elementary or secondary teaching consists of 20 units in physics, six of which must be upper division. However, if the major for secondary teaching is not an academic major, 12 upper division units in physics must be taken. Maximum credit 12 units for any combination of Physics 1A-1B, 2A-2B, 3A-3B, 5, and 50A-50B.

Lower Division Courses

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; 1B not open to students with credit in 2A; 1B not open to students with credit in 2B.

2A-2B. General Physics (3-3) I, II

Prerequisites: Completion of high school physics. Physics 2A is prerequisite to 2B. Recommended: Concurrent registration in Physics 2A and 3A and in Physics 2B and 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; 2B not open to students with credit in 1B.

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. 3A: properties of matter, mechanics, heat and sound. 3B: electricity, magnetism, and light.

4A-4B-4C. Principles of Physics (4-4-4) I, II

Three hours of lecture and three hours of laboratory.

Prerequisite 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.

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, 4A, 4B, or 4C.

50A-50B. Principles of Physics (6-6) I, II

Five lectures and discussions and three hours of laboratory.

Prerequisite for 50A: High school physics, or Physics 1A-1B or 2A-2B; credit or concurrent registration in Mathematics 51. Not open to students with credit in Physics 4A.

Prerequisite for 50B: Physics 50A with a grade of C or better, and credit or concurrent registration in Mathematics 52.

Mechanics, wave motion, heat, electricity, optics, and atomic and nuclear physics. The calculus will be used.

73. Introductory Electronics (3) I, II

Prerequisites: Physics 4B, 50B, or 1B; or 2B and 3B; a working knowledge of the calculus.

A qualitative study of electron tubes and electronic systems. Not open to students with credit in Physics 103.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 or 50B, and credit or concurrent registration in Mathematics 118A. Physics 100A is prerequisite to 100B.

Semester I: Newtonian mechanics and wave motion. Semester II: Electrostatics and magnetostatics.

102A-102B. Modern Physics (3-3) I, II

Prerequisite: Physics 4C or 50B. 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

Prerequisites: Physics 4B or 50B or 1B, or 2B and 3B, and a working knowledge of the calculus.

A qualitative study of electron tubes and electronic systems. Not open to students with credit in Physics 73.

106. Optics (3) II

Prerequisites: Physics 4C or 50B or 1B, or Physics 2B and 3B, and a working knowledge of the 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 or 50B. Ray tracing, aberrations, matrix methods, optical instrumentation.

110. Electricity and Magnetism (3) I, II

Prerequisites: Physics 4C or 50B; and credit or concurrent registration in Mathematics 118A, and in Physics 73 or 103.

Analysis of direct and alternating current circuits using the operator "j" and circuit theorems; introduction to coupled circuits, resonance and transients. Electrostatics; dielectrics and conductors. Chemical, photo, and thermal effects. Electromagnetism, and magnetic properties.

111. Concepts is in Modern Physics (3) I, II

Prerequisite: Physics 1B, 2B, or 5.

Modern developments in physics for non-physics majors, including relativity. introductory quantum theory, and atomic nuclear and solid state physics.

114. Acoustics (3) I

Prerequisites: Physics 73 and 100B.

Wave motion and its application to the production, transmission and reception of sound. Development of acoustic circuits using electro-acoustic analogs.

120A-120B. Advanced Physical Measurements (2-2) I, II

Six hours of laboratory.

Prerequisites: Physics 4C or 50B; and credit or concurrent registration in Physics 73 or Physics 103.

A year course stressing laboratory experiments and measurements chosen from all the major areas of physics.

121. Radiation Physics (3)

One lecture and six hours of laboratory.

Prerequisites: Physics 1B or 2B, and 3B.

X-rays, radioactivity, interactions of radiations 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.

349-9226

Prerequisite: Physics 120B.

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 material to a maximum of four units.

130. Physics for Elementary Teachers (3) |

Basic concepts, methods, and materials of physics for the elementary school. Topics in classical and modern physics. Open only to elementary teachers and elementary teacher candidates. Not open to students with credit in Physics 4A-4B-4C or 50A-50B.



133. Concepts of Physics (4) I

Three lectures and three hours of laboratory.

Prerequisites: Mathematics 51 or Mathematics 22, and Physics 1B or 2B and 3B with grades of C or better.

Unifying concepts of physics; conservation of momentum and energy, waveparticle models, conservative fields, relativity, and statistical physics.

135A-135B. PSSC Physics (3-3)

Two lectures and discussions and three hours of laboratory. Prerequisites: 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 test and laboratory materials prepared by the Physical Science Study Committee.

148. Nuclear Physics Laboratory (3) II

One lecture and six hours of laboratory.

Prerequisite: Physics 120B.

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.

155. Analog Computers (3) II

Prerequisites: Mathematics 118B; Physics 73 or 103.

Electronic integration and differentiation; solution of differential equations; multiplication, division and function generation; simulation of mechanical systems varying with time, solution of typical problems; auxiliary equipment, layout of large installations.

156. Digital Computers (3) |

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.

160. Circuit Analysis (3) II

Prerequisite: Physics 73 or 103. Filter design, transmission lines, and network analysis.

163. Electronics Laboratory (2) |

Six hours of laboratory.

Prerequisites: Physics 120B and credit or concurrent registration in Physics 173A.

Transistor characteristics, cathode ray oscillograph. One stage RC amplifier. One stage and multistage amplifiers including feedback. Equivalent circuits.



167A. Semiconductor Devices (3) I

Prerequisite: Physics 73 or 103.

Semiconductor physics, diode and transistor mechanisms, equivalent circuits and applications, thermal stability, switching theory and applications.

167B. Semiconductor Devices (3) II

Prerequisites: Physics 102A and 167A.

Field effect devices, semiconductor lasers and photo detectors, four layer devices including SCR's, tunnel diodes, varactors and other microwave devices, thermoelectricity, Hall effect.

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

Refer to Honors Program.

170. Electromagnetic Theory (3) I, II

Prerequisites: Mathematics 118B and Physics 100B and 102B. Electrostatics and magnetostatics treated by vector methods; Maxwell's equations. Electromagnetic induction, radiation and wave propagation.

173A. Physical Electronics (3) |

Prerequisites: Mathematics 118B and 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.

173B. Physical Electronics (3) II

Prerequisites: Physics 160 and 173A, each with a minimum grade of C and credit or concurrent registration in Physics 163.

Field approach to transmission lines, coaxial cables, wave guides, resonant cavities, stub matching, radiation and antenna phenomena, interaction of fields and electronic beams and power extraction from fields.

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 and 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

354-02285

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, non-linear 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.

196. Advanced Physics (2 or 3)

Prerequisite: Consent of instructor.

Selected topics in classical and modern physics. May be repeated with the approval of the instructor for a total of 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. Six units maximum credit.

Graduate Courses

200. Seminar (2 or 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)

Prerequisites: Mathematics 118B; Physics 210A is prerequisite to Physics 210B.

Topics from matrix theory, vector and tensor analysis, orthogonal function





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)

Prerequisites: Physics 148 and 151.

Topics in nuclear radiation phenomena, including interaction of radiation with matter; radiation detectors.

221. Radiological Physics (2)

One lecture and three hours of laboratory. Prerequisites: Physics 148 and 151. Topics and problems in radiological physics.

222. Health Physics (2)

One lecture and three hours of laboratory. Prerequisites: Physics 148 and 151. Topics and problems in health physics.

248. Advanced Nuclear Physics Laboratory (3)

One lecture and six hours of laboratory. Prerequisite: Physics 148. Experimental work involving sub-critical reactor assembly, neutron generator, whole-body counter, etc.

251. Nuclear Physics (3)

Prerequisites: Physics 151, 175, and 190.

Theory of nuclear forces, nuclear reactions, interaction of radiation with matter, radioactivity, nuclear structure and high energy physics.

260. Advanced Electronics (3)

Prerequisite: Physics 173B. Advanced topics in contemporary electronics.

270A-270B. Electromagnetic Theory (3-3)



361-92320

Prerequisite: Physics 170. 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, 175. 275A is prerequisite to 275B.

Quantum theory of radiation, molecular and nuclear systems. Approximation methods.

280. Theory of the Solid State (3)

Prerequisites: Physics 175, 180, and 190.

The bank theory of solids, with applications to the electrical and optical properties of dielectrics, semi-conductors, and metals.

286. Advanced Optics (3)

Prerequisite: Physics 186.

Selected topics in advanced optics such as rigorous diffraction theory, optical spectra, lasers, non-linear optics, and applications of Fourier analysis to optical systems and information processing.

297. Research (1-3)

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)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis in physics for the master's degree.





Faculty

Emeritus: Leiffer



Associate Professors: Hobbs, Johns, Lewin, Miles, Nesvold, Schultze, Terrell Assistant Professors: Anderson, Byrne, Conniff, Cutter, Funston, Keiser, Soule

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.

Teaching minor in political science with specialization in secondary teaching.

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 85 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 statistics.

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 consists of a minimum of 15 units of political science, to include Political Science 1, and 2 or 3, and nine upper division units.

Political Science Minor

For the Standard Teaching Credential

Specialization in Secondary Teaching

The minor for secondary teaching consists of 20 units in political science, 14 of which must be in upper division courses chosen with the guidance of the departmental adviser.

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.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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)

Prerequisite: Political Science 1, 2, and a three unit course in statistics. Political Science 100A is a prerequisite to Political Science 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 Science

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

Concepts concerning the nature of the state from Burke to the present.

113. The Theory of Political Inquiry (3)

Prerequisite: 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 units of upper division political theory.

Research methods in political theory; intensive development of selected issues.

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 and 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.







Political Science

117. State and Local Government (3)

A study of public policy-making within the contex of statewide politics, statefederal and state-local relations, including both official and unofficial institutions. Emphasis on California. Meets the graduation requirement in California Government. (Formerly numbered and entitled: Political Science 142, State Government; and Political Science 143, Municipal and County 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)

Prerequisite: Political Science 1.

Social and attitudinal variables in political behavior. Quantitative research data as used in electoral studies. (Formerly numbered Political Science 124.)

122. Political Communication (3)

Prerequisites: Political Science 121.

Communication as a political process; the effects of political communications on individuals and groups.

123-5. 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: Political Science 120 and consent of instructor.

Students will be assigned selectively to functional areas of politics, such as political party headquarters, elective public offices and non-partisan 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 116 or 117.

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.

Public Law (Group IV)

135. The Supreme Court and Contemporary Issues (3)

Recent decisions of the Supreme Court of the United States and their relationship to contemporary political and social issues. Not open to students with credit in Political Science 139A or 139B.

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 situation and problems.

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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)

A 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." Fall semester: Origins and development through the nineteenth century. Spring semester: Twentieth century experimentation and conflict.

171. The Conduct of American Foreign Relations (3) |

The legal, administrative, and political organizations by which American foreign policies are formulated and implemented.

172. International Organization (3) |

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, socio-economic, 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 upon 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.

183. Governments and Politics of South and Southeast Asia (3)

The internal political systems and foreign policies of India, Pakistan, Thailand, and Indochinese area, Indonesia, and the Philippines.

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 the 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 Political Science 100A.

Cross-national analysis of institutional norms, attitudes, and behavior in relation to government; factors which determine patterns and styles of political participation in contemporary societies.

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 policymaking.

195. Political Systems of Latin America (3)

Prerequisite: Political Science 194.

Domestic and interntional 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 to a maximum of six units of course credit with new content and consent of instructor.

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. Six units maximum credit.

Prerequisites: Twelve units of upper division 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)

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Prerequisite: Six units of upper division 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 units of upper division political science, three 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 units of upper division political science. Legislative institutions and processes. Emphasis on U.S., national, state, and local legislatures.



226. Seminar in Political Psychology (3)

(Same course as Psychology 226.)

Prerequisites: Six units selected from Psychology 110, 112, 145; Political Science 100A-100B, 121, 122, 190.

Psychological factors on the individual's political behavior; psychological theory as it applies 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.

250. Seminar in Local Government (3)

Selected problems of state and local government and inter-governmental relations. Maximum credit six units applicable on a master's degree.

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 units of upper division 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 units of upper division 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 units of upper division 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 units of upper division 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 units of upper division 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)

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)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.





Political Science

Portuguese

Portuguese In the College of Arts and Letters

Faculty

Assistant Professor: Windsor

Offered by the Department of Spanish and Portuguese

Courses in Portuguese

Major or minor work is not offered.

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; 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

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)

Prerequisite: Portuguese 2.

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)

Prerequisite: Portuguese 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.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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)

Prerequisite: Portuguese 4.

Oral and written composition in Portuguese, based on models from modern Portuguese and Brazilian literature.

134. Portuguese Literature (3)

A study of important movements, authors and works in the literature of Portugal from its beginnings to the present.

135. Brazilian Literature (3)

A study of the important movements, authors and works of the literature of Brazil from the colonial period to modern times.

185. Selected Studies (3)

Topics in Luso-Brazilian language, literature, culture, and linquistics.



Psychology In the College of Sciences

Faculty

Emeritus: Carlson, Kidwell, McCollom, Steinmetz, Treat, Voeks

- Professors: Alf, Dicken, Feierabend, Gallo, Grossberg, Harrison, Hillix, Hunrichs, Kaplan, Karen, Kass, Kinnon, Leukel, Linton, O'Day, Penn (Chairman), Radlow, Sattler, Stevens, Turner
- Associate Professors: Graf, Harari, Koppman, Leckart, Levine, Lynn, McDonald, Parker, Psomas, Rodin, Sand, Schulte, Sheposh, Smith
- Assistant Professors: Bryson, J., Defran, Franzini, Hornbeck, Hufford, Jacobson, McCordick, Mollenauer, Ohnesorge, Plotnick, Pollack, Schulman, Yaremko

Lecturers: Aiken, Bryson, R., Johnson, L., Litrownik, Manese, Willis

Offered by the Department

Master of Arts degree in psychology; and a 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. degrees in applied arts and sciences for students admitted to Secondary Teacher Education.

Teaching major in psychology with specialization in secondary teaching. Minor in psychology.

Teaching minor in psychology with specialization in both elementary and secondary teaching.

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 85 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 40 and 50. 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 B

The purpose of Plan B is to facilitate the specific preparation of those students who wish to pursue graduate and professional preparation in clinical, industrial and personnel, social, and theoretical-experimental psychology.

Preparation for the major. Psychology 40, 50, and 70. 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 Major

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

(For Students in Secondary Teaching Education)

This major is available in applied arts and sciences only to students who have been admitted to and continue in Teacher Education to time of graduation. All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 85 of this catalog.

A minor is not required with this major.

Preparation for the major. Psychology 40, 50, and 70. Recommended: 15 units in anthropology, biology, philosophy, sociology, and zoology.

Major. Psychology 105, 110, 131, 151, and twelve additional units in psychology selected with approval of the departmental adviser.

Psychology Minor

The minor consists of a minimum of 15 units in psychology, nine of which must be upper division.

Psychology Major

For the Standard 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.

Specialization in Secondary Teaching

The major in psychology for secondary teaching is the same as the undergraduate major for the A.B. degree in applied arts and sciences described above.

Postgraduate year. Six units of postgraduate courses acceptable toward the credential.

Psychology Minor

For the Standard Teaching Credential

The minor for elementary or secondary teaching consists of 21 units in psychology, to include Psychology 1, 106, 131, and 145.

Lower Division Courses

1. Introductory Psychology (3) I, II

Facts, principles, and concepts which are basic to understanding human behavior.

12. Psychology of Individual Adjustment (3) I, II

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.

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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 153. Limit of nine units applicable 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)

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 evaulation of group tests of intelligence, personality, aptitude, interest and achievement.

106. Developmental Psychology (3) I, II

Prerequisite: Psychology 1.

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.

107. Psychology of Later Maturity (3) II

Prerequisite: Psychology 1.

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.

109. Mental Deficiency (3) I, II

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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.

Psychology

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 a consumer.

121. Personnel and Industrial Psychology (3) I, II

Prerequisite: Psychology 70 or statistics in another field.

Psychological principles applied to industrial problems of selection, placement, and training.

122. Public Opinion Measurement (3) |

(Same course as Journalism 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.

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-machine-environmental 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 I.

Psychological factors in interviewing; interviewing techniques. Supervised practice in interviewing for purposes of personnel 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.

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142. Physiological Psychology (3) I, II

Prerequisies: 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. Maximum credit six units with the approval of the instructor.

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 of 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.

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.





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 1, 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 in psychology.

Modern empiricism and the philosophy of science as related to issues in contemporary psychology.

180-5. Contemporary Problems in Psychology (1) S

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.



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197. Senior Project (1-3) I, II

Prerequisites: Twelve units in 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

Individual study, including library or laboratory research and a written report. Six units maximum credit.

Prerequisite: Twenty-four upper division units of psychology.

Graduate Courses

200. Seminar (3)

Prerequisite: 24 upper division units of psychology or consent of instructor. 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. Seminar (3)

Prerequisite: 24 units in psychology, which may include educational psychology courses in the School of Education.

A review, integration, and supplementation of the student's knowledge of psychology.

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 the 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 the graduate adviser. Theory and practice in assessment of personality and behavior disorders.

211. Seminar in Behavior Disorders of Childhood and Adolescence (3)

Prerequisites: Psychology 106, 150, 151, and consent of the graduate adviser. Contemporary approaches to emotional and behavioral problems of children and youth. Considers developmental, cognitive, and social variables as well as theory and treatment.

212. Seminar in Behavior Disorders of Adults (3)

Prerequisites: Psychology 150, 151, and consent of the graduate adviser. Contemporary approaches to emotional and behavioral problems of adults. Considers developmental, cognitive and social variables as well as theory and

219. Seminar in Personnel Psychology (3)

Prerequisites: Psychology 121, and consent of the 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 the graduate adviser.

Applications of psychological principles and methods of investigation to problems of industrial relations and motivation of employees; factors influencing morale and employee productivity; criteria of job proficiency; psychological aspects of worker-management relationships and leadership.

221. Seminar in Problems in Social Psychology (3)

Prerequisites: Psychology 110, 145, 175, and consent of the 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 the graduate adviser. Basic concepts and principles integrating information in the areas of learning, emotion, motivation, personality, and social interaction. Relationships of scientific methods to the formation and testing of hypotheses and other conceptualizations.

223. Experimental Design (3)

Prerequisites: Psychology 110, 170, and consent of the 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 (3)

One lecture and six hours of laboratory.

Prerequisite: Psychology 223, and consent of the 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 the graduate adviser. Detailed consideration of adequate sampling techniques, item construction, item analysis, determination and enhancement of reliability and validity of tests.

Psychology







226. Seminar in Political Psychology (3)

Prerequisites: Six units selected from: Psychology 110, 112, 145, Political Science 100A-100B, 121, 122, 190, and consent of the graduate adviser.

Psychological factors on the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus, and participation. (Same course as Political Science 226.)

230. Seminar in Physiological Correlates of Behavior (3)

Prerequisites: Psychology 50, 113 or 142, or nine units of biology; and consent of the 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)

Prerequisites: Psychology 114 or 117 or Biology 110, 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. (Same course as Biology 231.)

233. Counseling and Psychotherapy Laboratory (4)

Two lectures and six hours of laboratory.

Prerequisites: Psychology 110, 151, 152, 175, 178, and consent of the graduate adviser.

Supervised research and practice in interpersonal encounter, with emphasis on the attainment of personality change.

270. Statistical Theory (3)

Prerequisites: Psychology 70, 105, and consent of the graduate adviser. Study of quantitative methods in psychology with emphasis on normal inference and nonparametric statistics. Not open to students with credit in, or concurrent enrollment in Psychology 170.

275. Advanced Principles of Learning (3)

Prerequisites: Psychology 110, and consent of the graduate adviser. The empirical data, basic principles and theoretical positions of major learning theorists. Not open to students with credit in, or concurrent enrollment in Psychology 175.

277. Seminar in the History of Psychology (3)

Prerequisites: Psychology 110, and consent of the graduate adviser. The history of modern psychology. Not open to students with credit in, or concurrent enrollment in Psychology 177.

296. Directed Field Experience (6)

Prerequisites: Limited to classified graduate students in psychology, with appropriate qualifications in a field of professional skill.

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.



Research in one of the fields of psychology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Individual projects involving library or laboratory research in any area of psychological investigation or interest. Maximum credit six units.

299. Thesis (3)

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.

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, Kitchen (Director), Kochanski, Walker, Wilcox Associate Professors: Clapp, Gilbreath, Gitchoff

Assistant Professors: Boostrom, Gazell, Hamilton, Thompson, Walshok Lecturer: Erikson

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.

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

Preparation for the major. Economics 1A, 1B, Political Science 2, Business Administration 83, and a 3-unit course in statistics (may be taken in upper division). (15 units.)

Major. A minimum of 36 upper division units to include Public Administration 140 and 198; Economics 131 or Public Administration 162; 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 consists of a minimum of 15 units to include Political Science 2, Public Administration 140, and Public Administration 197, 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 those numbered 136, 140, 141, 142, 143, 144, 145, 147, 149, 152, 155, and 156.
- (3) Urban studies. Most relevant are those numbered 148, 150, 154, and 160.

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 153. Limit of nine units applicable 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

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. With consent of instructor, may be repeated with new content.

142. Management of State Governments (3) I, II

Prerequisite: Public Administration 140.

Administrative and constitutional problems of state management in the American federal system. Emphasis on California

143. Management of Urban Governments (3) I, II

Prerequisite: Public Administration 140.

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

Prerequisite: Consent of instructor.

Problems in recruitment, placement and supervision of public employees.

145. Administrative Behavior (3) |

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. Case studies.

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 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 in Extension only.

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.

Public Administration and Urban Studies

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: Political Science 2.

Constitution, political and administrative characteristics of American federalism, including regionalism, interstate compacts, and grants-in-aid.

155. Regulatory Administration (3) I, II

Prerequisite: Public Administration 140 or Criminal Justice Administration 146 or Political Science 139A-139B.

Fundamental structure, problems and criticisms of the regulatory systems in the United States.

156. Public Administrative Systems Analysis (3)

Two lectures and two hours of laboratory.

Prerequisites: Public Administration 140 and a statistics course. Systems and organization analysis; survey of electronic systems; work standards and units; procedures analysis; administrative planning.

157. Public Relations of Public Agencies (3) |

Prerequisite: Public Administration 140.

Theory and practice of public relations in government. Public opinion and clientele groups in relation to administrative agencies. Problems in public relations of public agencies. Techniques of pubic relations.

160. Principles of Planning (3) I, II

An introduction to community planning: regional, county, and city. Consideration of the Master Plan, including its purposes, contents, and method of adoption.

161. Field Studies in Government (3) II, S

Prerequisite: Public Administration 140.

Study of organization, policies and functions of selected government agencies. Discussion 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 implicatons 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. Six units maximum credit.

Prerequisites: Twelve units of upper division public administration and consent of instructor.

Graduate Courses

201. Scope and Method of Public Administration (3)

Prerequisite: Six units of upper division public administration. Evolution of large-scale public bureaucracies; development of public administration as an academic discipline; research methodologies of public administration.

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.

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 to a master's degree.

241. Seminar in Public Personnel Administration (3)

Prerequisite: Public Administration 144.

Analysis of special problems of public service recruitment; recent developments in government pay administration; planning administration, and evaluation of executive development and other training programs; collective bargaining in government; construction and administration of tests; evaluation of total personnel program.

242. Seminar in Public Administration in Developing Nations (3)

Prerequisite: Public Administration 140.

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Selected problems in administration of economic and technical assistance programs; problems of administration in developing areas.



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. Readings in Public Administration (3)

Prerequisite: Public Administration 201, or six graduate units of political science.

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)

Prerequisites: 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: 12 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 a meternship conferences. Admission by consent of instructor.

297. Research in Public Administration (3)

Prerequisite: Consent of Director, Public Administration and Urban Studies. Research in one of the areas of public administration.

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with the Director and instructor.

299. Thesis (3)

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 261. Urban Design and Land Use Planning Studio (6)

Two lectures and eight hours of laboratory.

Prerequisites: City Planning 266A and 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 or 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)

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Selected topics in urban planning. Maximum credit six units applicable on a master's degree.

Public Administration and Urban Studies

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)

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)

Prerequisite: Consent of staff.

To be arranged with Director of City Planning and instructor. Individual study. Maximum credit six units.

Recreation

Recreation In the College of Professional Studies

Faculty

Professor: Hanson, R. Associate Professor: Butler, R. (Chairman) Assistant Professor: Haffly Lecturers: Duncan, 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 85 of this catalog.

The major in recreation administration may be planned with an emphasis in one of the following four areas: (1) Leisure Agency Leadership, (2) Outdoor Recreation, (3) Park and Recreation Management, or (4) Recreation Rehabilitation.

A minor is not required with this major.

Emphasis in Leisure Agency Leadership

Preparation for the major. Music 2; Physical Education 32A, 33A, 33B; Psychology 1; Recreation 40, 60, 70, 80, 84; Sociology 1 (23¹/₂ 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, 184. Nine units selected from Psychology 131, 145, 152; Sociology 113, 114, 125, 157. Eight units selected from Art 110; Drama 110; Education 140; Industrial Arts 140; Physical Education 122, 151, 175, 176.

Emphasis in Outdoor Recreation

Preparation for the major. Recreation 40, 60, 80; Biology 1 and 2; Geology 2; Geography 1; Botany 1; Economics 1A; Zoology 50. (27 units.)

Major. A minimum of 36 upper division units to include Recreation 165, 175, 185; Geography 170, 171, 175; Industrial Arts 101; Biology 115; and twelve units selected from the following: Biology 110, 165; Botany 112; Journalism 180; Political Science 117; Psychology 145; Zoology 114, 117, 135.

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; Speech Communication 64 (23 units).

Major. A minimum of 38 upper division units to include Industrial Arts 101; Journalism 180; Public Administration 140, 143; Recreation 140, 165, 175, 184. Nine units selected from Psychology 106; Public Administration 144, 152; Sociology 114, 125, 175. Six units selected from Botany 112, Geography 170, 171, 175, or Recreation 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 (23 units).

Major. A minimum of 36 upper division units to include Industrial Arts 101; Journalism 180; Recreation 150, 151, 165, 184; Psychology 106, 109, 150. Nine units selected from Drama 110, 142; Physical Education 122, 151, 154; Psychology 145, 152; Sociology 114, 135, 136; Education 135, 167; Health Science and Safety 175, 176.

Recreation Minor

The minor in recreation consists of a minimum of 15 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. Introduction to Community Recreation (2) I, II

Scope of community recreation; basic philosophy of leisure time agencies; leadership theory; organizations for youth; program planning; and playground practices.

Recreation

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 (2) I, II

Consideration of camp administration and principles of good camp leadership. Lectures and practical sessions aimed at general training in all phases of outdoor education and camp leadership, including skills in axemanship, outdoor cooking, nature projects, camp crafts, campfire and special camp programs.

84. Supervised Field Work (3) I, II

Prerequisites: Credit or concurrent enrollment in Recreation 70.

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 153. Limit of nine units applicable 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.

150. Recreation in Medical Settings (3) |

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. Practicum in Recreation for Special Groups (3) II

Two lectures and three hours of laboratory.

Prerequisite: Credit for or concurrent enrollment in Recreation 70.

Developing community recreation programs for one of the following groups: aging, mentally retarded, mentally ill and physically handicapped. May be repeated twice in different areas of exceptionality.

165. Administration of Recreation Programs (3) I, II

Prerequisite: Recreation 60.

562

131-93295

Administrative authority and responsibility to plan, implement, finance, staff and evaluate organized programs of recreation. The 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 for 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

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. Principles of Outdoor Recreation (3) |

Prerequisite: minimum of one summer work experience in a federal or state recreational area.

Objectives and practices related to administration of recreational systems in regional, state, and federal parks and forests. Interpretation; enforcement problems; planning and operational techniques.

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

Individual study. Six units maximum credit. 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.

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.

134 9333

Recreation

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

Professor: Anderson, A.W. Associate Professor: Jordan (Chairman) Assistant Professor: Khalil

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

Preparation for the major. Religious Studies 20, 50, and Philosophy 1A-1B.

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 II and 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, 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, 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, Philosophy 135, Sociology 138, Anthropology 153.

Group IV: Religious Studies 190, 191.

Religious Studies

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 153. Limit of nine units applicable 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. First semester: The Pentateuch, the Prophets and the Writings. Second semester: 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, 111A is prerequisite to 111B.

Readings in source materials illustrative of the doctrinal and institutional development of the Western Church. First semester: the Medieval Church and early stages of the Reformation. Second semester: the Reformation and the Enlightenment.

114. The Eastern Orthodox Tradition (3)

Prerequisite: Religious Studies 110.

Major doctrines, practices, and developments in the Eastern Church after the Patristic period up 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. First semester: religions of India-especially Hinduism and Buddhism. Second semester: religions of the Far East.

126A-126B. Scriptures of India and China (3-3)

Formerly Philosophy 150A-150B, Asian Thought.

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.

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. First semester: primarily the plastic arts and music. Second semester: 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 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 contemporary understanding of biblical religion in relationship to social action as exemplified in the writings of theologians and concerned laity.

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.

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

Refer to Honors Program.

180. A Major Figure (3) I, II

147-93375

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.

Religious Studies

181. A Metaphysical Doctrine (3) I, II

Prerequisites: Philosophy 1B, 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; 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. Six units maximum credit. Prerequisite: Twelve upper division units in religious studies.

Russian

In the College of Arts and Letters

Faculty

Professors: Dukas, Kozlik Associate Professors: Fetzer Assistant Professors: Bialy

Offered by the Department of German and Russian

Master of Arts degree in Russian.

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

Teaching major in Russian with specialization in secondary teaching. Teaching minor in Russian with specialization in both elementary and secondary teaching.

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 85 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 or 6 units in period literature and 6 units in Russian linguistics.

Russian Minor

The minor in Russian consists of a minimum of 15 units in Russian, six units of which must be in upper division courses.

Russian Major

136-9342

For the Standard 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.

Proficiency Examination: Before taking a student teaching assignment in Russian, the candidate for the credential may be required to pass an oral and

Russian

written proficiency examination in the language, administered by the Department of German and Russian. The candidate must consult with the chairman of the Department of German and Russian concerning this examination.

Specialization in Secondary Teaching

Preparation for the major. Russian 1, 2, 3, 4, 10, and 11, (20 units.)

Teaching Major (Undergraduate). A minimum of 24 upper division units in Russian to include Russian 101A-101B, 102A-102B, 140, 141, and six upper division units of Russian in the period literature of the language. Recommended: Russian 130 or 131.

Postgraduate Year. Six units of graduate courses in Russian.

Russian Minor

For the Standard Teaching Credential

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 German and Russian. The candidate must consult with the chairman of the Department of German and Russian concerning this examination.

Specializaton in Elementary Teaching

The minor in Russian for elementary teaching consists of not less than 20 units in Russian, six units of which must be in upper division courses.

Specializaton in Secondary Teaching

The minor in Russian for secondary teaching consists of not less than 20 units in Russian, to include in the lower division, Russian 1, 2, 3, 4, 10, and 11; and in the upper division, Russian 101A-101B, 102A-102B, 130 or 131.

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

1. Elementary (4) I, II

Four lectures and one hour of laboratory.

Pronunciation, oral practice, reading in Russian literature, minimum essentials of grammar.

2. Elementary (4) I, II

Four lectures and one hour of laboratory. Prerequisite: Russian 1. Continuation of Russian 1.

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.

8A-8B. Scientific Reading (2-2)

Prerequisite: Russian 2 or three years of high school Russian. 8A is prerequisite to 8B.

Intensive reading in scientific fields.

10. Conversation (2) |

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.

40. Russian Civilization (3) |

(Same course as Humanities 52)

Conducted in English.

The major currents and characteristics of Russian culture, as expressed through the centuries in literature, art, philosophy, and music.

41. Russian Civilization (3) II

(Same course as Humanities 53) Conducted in English. Continuation of Russian 40.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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. Conversation and Composition (3-3)

Prerequisite: Russian 4.

101-93440

Translation into Russian from moderately difficult English prose, with written reports in Russian. Readings and oral discussions of Russian plays and short stories.





Russian

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 18th Century (3) Russian Classicism and Sentimentalism.

105A-105B. The Russian Short Story, Drama, and Poetry of the 19th Century (3-3)

Development of the Russian short story, drama, and poetry of the 19th Century.

110A-110B. The Russian Novel of the 19th Century (3-3) Development of the Russian novel of the 19th Century.

111. Russian Literature of the 20th Century (3) Poetry, prose, and drama of the 20th century.

130. Russian 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.

140. Russian Civilization (3) |

(Same course as Humanities 152) Conducted in English. An advanced course in Russian culture of the past and present, with emphasis on the arts, philosophy, literature, and music.

141. Russian Civilization (3) II

(Same course as Humanities 153) Conducted in English. Continuation of Russian 140.

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.



Graduate Courses

201. History of the Russian Language (3)

Prerequisite: 12 units of upper division Russian. The historical development of the Russian language.

202A-202B. Old Church Slavic (3-3)

Prerequisite: 12 units of upper division Russian. Structure of Old Church Slavic with readings and analysis of medieval Slavic texts.

203. Slavic Linguistics (3)

Prerequisite: 12 units of upper division Russian. Selected topics in historical and comparative Slavic linguistics.

204A-204B. The Soviet Novel and Short Story (3-3)

Prerequisite: 12 units of upper division Russian. Intensive study of major writers of Soviet prose fiction.

205. Russian Poetry from Pushkin to the Present (3)

Prerequisite: 12 units of upper division Russian. The major Russian poets of the nineteenth and twentieth centuries.

253. Russian Literary Criticism (3)

Prerequisite: 12 units of upper division Russian. Literary criticism from the early 18th century to the present.

255. Seminar: A Major Author or Movement (3)

Prerequisite: Russian 290.

A major author or movement. Maximum credit six units applicable to a master's degree.

290. Research and Bibliography (3)

Prerequisite: 12 units of upper division Russian. Purposes and methods of research in Russian literature and Slavic linguistics.

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisite: 18 units of upper division Russian and consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

165-93-470

Prerequisite: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.
Social Welfare

Social Welfare In the School of Social Work

Faculty

Professor: Pilcher, D

Associate Professors: Griffin, Haworth, J., Pilcher, A.

Assistant Professors: Anderson, D., Fort, Guidry, Watson, C., Watson. E. Lecturers: Andriola, Hubert, Zuniga

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

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed on page 85 of this catalog.

A minor is not required with this major.

This major provides the undergraduate portion of the program leading to the Master of Science in Social Work. In addition, it serves broad educational purposes in providing preparation for more effective participation in community affairs based on an understanding of contemporary social welfare programs. It prepares for immediate employment in those social welfare positions which do not require professional social work education at the graduate level, and it qualifies one for admission to graduate professional schools of social work.

Preparation for the major. Anthropology 1C; Economics 1A-1B; Psychology 1; Sociology 1, 10, 60 (24 units).

Recommended: Biology 1 and 2, Political Science 1 and 2, and courses in physiology.

Major. A minimum of 30 upper division units to include: Social Welfare 100A-100B, 180A-180B, 182, and 189A-189B; Sociology 140 or Psychology 145; three units selected from Psychology and three units selected from Sociology.

Recommended: Social Welfare 187 (strongly recommended for those students planning to seek admission to the San Diego State 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 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 85 of this catalog.

A minor is not required with this major.

This major provides the undergraduate portion of the program leading to the Master of Science in Social Work. In addition, it serves broad educational purposes based on an understanding of contemporary social welfare programs. It prepares for immediate employment in those social welfare positions which do not require professional social work education at the graduate level, and it qualifies one for admission to graduate professional schools of social work.

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; Sociology 140 or Psychology 145.

Recommended: Social Welfare 187 (strongly recommended for those students planning to seek admission to the San Diego State 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 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 Home Economics 35, Sociology 35, or other lower division course in courtship and marriage or marriage and the family. (Formerly numbered Social Welfare 35.)

80. Introduction to Social Welfare (3) I, II

Two lectures and three hours of field observation.

Orientation to the field of social welfare. Readings, class discussions, and observation of social welfare activities in the community.

99. Experimental Topics (2-4)

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Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable to a bachelor's degree in courses under this number of which no more than three units may be applicable to general education requirements.

Social Welfare

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 a 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.

180A-180B. Social Welfare as a Social Institution (3-3) I, II

Prerequisites: Sociology 1 and 10; Social Welfare 180A is prerequisite to 180B. The institutional nature of social welfare and its relationship to other institutions in society.

181. Field Observation (1-2) I, II

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.

185. Public Welfare (3) I, II

A historical and current perspective of public welfare. Analysis of current programs of social insurance, public assistance, general relief, and other public welfare policies and programs.

187. Current Developments in Social Work (3) I, II

Prerequisites: Sociology 60; Social Welfare 100B and 180B.

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 (3-3) 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 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

Individual study. Six units maximum credit. Prerequisite: Consent of instructor.

Social Welfare

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Social Work

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: Horowitz, Kelley (Associate Dean), Lee, Maxwell, Morgan, Ontell, Pilcher, D., Reichert (Dean), Stumpf, Tebor, Weinberger

- Associate Professors: Anderson, F., Andresen, Griffin, Haworth, G., Haworth, J., Ishikawa, Kahn, Kessel, Pilcher, A.
- Assistant Professors: Ajemian, Anderson, D. M., Baily, Clary, Cohen, Fletcher, Fort, Gilliam, Guidry, Herman, Hollander, Raymer, Sardinas, Totman, Watson, C., Watson, E., Weissman

Lecturers: Aikens, Andriola, Hubert, Peer, Seargeant, Zuniga

Appointments Under Grants from Outside Funds

Lecturers: Brewer, Hudson, Kukkonen, Manos, Murphy, Schiffrin, Shenko, Smith, Treske

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 II (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.

230. Social Work Practice I (2)

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 (2)

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 requirement in field work. 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.

Social Work

ings.

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 group-

236. Social Work Practice VII (4)

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.

237. Social Work Practice VIII (4)

Prerequisite: Social Work 236.

Continuation of Social Work Practice VII with emphasis on refinements of skills in intervention with individuals, families, groups, organizations and communities.

238. 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)

580

Prerequisite: 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.

Social Work

253. Field Instruction IV: Individuals, Families and Groups (4-5)

Prerequisites: Social Work 252 and concurrent registration in Social Work 233. 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.

255. Field Instruction V: Organizations and Communities (4-5)

Prerequisites: Social Work 251 and concurrent registration in Social Work 234. 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)

Prerequisites: Social Work 255 and concurrent registration in Social Work 235. 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)

Discusson 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)

Prerequisite: Social Work 290.

Research in the field of social work and completion of a research project. Individual or group project.

298. Special Study (1-3)

201-0415

Prerequisite: Consent of staff; to be arranged with Dean and instructor. Individual study. Six units maximum credit.

In the College of Arts and Letters

Faculty

Emeritus: Barnhart

Professors: Daniels, DeLora, J. R., Gillette (Chairman), Johnson, C. D., Kirby, Klapp, Milne, Mouratides, Wendling, Winslow

- Associate Professors: Chandler, DeLora, J. S., El-Assal, Schulze, Somerville, Sorenson
- Assistant Professors: Buck, Cottrell, Drake, Emerick, Kennedy, Lally, Scheck, Stephenson, Werner

Lecturers: Brown, McJunkins, Preston.

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 85 of this catalog.

Students majoring in sociology must complete a minor in another field.

Preparation for the major. Sociology 1, 10, and 60 (9 units.) Advanced students in junior and senior years entering the major may take Sociology 102 in place of Sociology 1, but may not use 102 to fulfill minimal upper division requirements in the sociology major.

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 from 15 to 22 units in sociology, nine units of which must be in upper division courses (except Sociology 102.)

Lower Division Courses

1. Introductory Sociology (3) I, II

This course, or Sociology 102, 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.

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.

35. Marriage and the Family (3) I, II

Analysis of dating, engagement, marriage and family relationships. The married couple as a small group viewed through contemporary sociological and social psychological principles and research findings. Factors predictive of marital behavior. Not open to students with credit in Home Economics 35, Social Welfare 35, or other course in marriage and the family, or in courtship and marriage.

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 wih credit for, or concurrent enrollment in, another course in statistics.

64. Sociological Analysis (3) I, II

Prerequisite: Sociology 1 or 102.

Development and use of fundamental procedures of sociological investigation.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 or 102.

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 or 102.

Theories of the major early European and American sociologists, including Marx, Weber, Durkheim, Pareto, Cooley, Mead, and others.

102. Principles of Sociology (3) I, II

2014-944

Development and use of the concepts that are applied to sociological analysis. A more intensive introduction to sociology than given in Sociology 1. Not open to students with credit in Sociology 1. Sociology 102 may not be used to fulfill the minimal upper division requirements in the sociology major or minor or the special major.

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 or 102.

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 or 102.

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 or 102.

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 or 102.

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 or 102.

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 1 or 102.

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 1 or 102.

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 or 102.

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 or 102.

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) II

Prerequisite: Sociology 1 or 102.

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 or 102.

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 or 102.

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) |

Prerequisite: Sociology 1 or 102.

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 socio-economic factors. Not open to students with credit in Health Science and Safety 176. (Formerly numbered Sociology 121.)

132. Formal Organization (3) II

Prerequisites: Sociology 1 or 102, and 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) II

Prerequisite: Sociology 1 or 102.

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) II

Prerequisite: Sociology 1 or 102. Recommended: Sociology 101 and 146.

A comparative study of family systems in different societies. Changing rolestructure 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

Prerequisites: Sociology 1 and 122.

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.

138. Sociology of Religion (3) II

Prerequisite: Sociology 1 or 102. 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) |

Prerequisite: Sociology 1 or 102.

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 or 102 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.

145. Sociology of Mass Communication (3) I, II

Prerequisite: Sociology 1 or 102. Sociology 140 and 146 are recommended. 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

Prerequisites: Sociology 1 or 102, and 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 or 102. Sociology 122 and 145 are recommended. 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) |

Prerequisites: Sociology 1 or 102, and 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) |

Prerequisite: Sociology 1 or 102.

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) 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) II

Prerequisite: Sociology 1 or 102.

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) |

Prerequisite: Sociology 60.

The use of parametric and non-parametric 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

Prerequisites: Sociology 1 or 102, and 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. Six units maximum credit. 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 to 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 to 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 to 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 to 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.

Sociology

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 to 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 for additional credit. Six units maximum credit 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.

270. Seminar in Population and Demography (3)

Prerequisites: Sociology 164 and 150 or 151.

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 164 and 150 or 151.

Selected readings providing comprehensive coverage of the fields of population and demography.



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.

297. Research (3)

Prerequisite: Sociology 164. Independent investigation of special topics.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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, L.

Professors: Baker, Case, Lemus, Walsh (Chairman)

Associate Professors: Head, Sender, Talamantes, Weeter

Assistant Professors: Barrera, Christensen, O'Brien, Santaló, Segade, Windsor, Jiménez-Vera, Young, R. R.

Offered by the Department of Spanish and Portuguese

Master of Arts degree in Spanish.

Major in Spanish with the A.B. degree in liberal arts and sciences. Teaching major in Spanish with specialization in both elementary and secondary teaching.

Minor in Spanish.

Teaching minor in Spanish with specialization in both elementary and secondary teaching.

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 85 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 courses in the period literature of the language.

Spanish Minor

The minor in Spanish consists of a minimum of units in Spanish, six units of which must be in upper division courses.

Spanish Major

For the Standard 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, with specialization in either elementary or secondary teaching, may be used by students in Teacher Education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Specialization in Elementary Teaching

Preparation for the major. Spanish 1, 2, 3, 4, 10, and 11. (20 units.)

Teaching Major. A minimum of 24 upper division units to include Spanish 101A, 101B, 102A, 102B, 150, 190, and six upper division units of electives in Spanish. In addition to the major, credential candidates must complete Education 136.

Specialization in Secondary Teaching

Preparation for the major. Spanish 1, 2, 3, 4, 10, and 11. (20 units.)

Teaching Major (Undergraduate). A minimum of 24 upper division units in Spanish to include Spanish 101A-101B, 102A-102B, 150, 190, and six units of upper division electives.

Postgraduate Year. Six units of graduate courses (200 numbered courses) in Spanish.

Spanish Minor

For the Standard Teaching Credential

Specialization in Elementary Teaching

The minor in Spanish for elementary teaching consists of not less than 20 units in Spanish, six units of which must be in upper division courses.

Specialization in Secondary Teaching

The minor in Spanish for secondary teaching consists of a minimum of 20 units in Spanish, Spanish 101A-101B, 102A-102B.

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 with five or six years of high school Spanish may enroll in Spanish 4; the department recommends, however, that they take Spanish 21, 22, or 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.

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.

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.

21. Intermediate Oral and Written Composition (3)

Prerequisites: Spanish 4 and 11.

Directed written composition with stress on current usage. Oral reports on assigned topics.

22. Introduction to Syntax and Style (3)

Prerequisites: Spanish 4 and 11.

Study of structure and idiomatic usage. Analysis of style based on passages chosen from modern literature.

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.

40. Spanish Civilization (3) |

Prerequisite: Spanish 4. The major currents and characteristics of Spanish culture, as expressed through the centuries in literature, art, and philosophy.

41. Spanish-American Civilization (3) II

Prerequisite: Spanish 4.

0.11-4.1 201

The major currents and characteristics of Spanish-American culture, as expressed through the centuries in literature, art, and philosophy.

Spanish



42. Mexican Civilization (3)

Prerequisite: Spanish 4.

The major currents and characteristics of Mexican culture, as expressed through the centuries in literature, art, and philosophy.

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 with a grade of C or better.

Translation into Spanish of moderately difficult English prose passages. Free composition in Spanish. Outside reading of modern Spanish plays, with written reports in Spanish. Oral practice on colloquial Spanish with extensive use of phonograph recordings. Special sections available for the Spanish speaking.

102A-102B. Survey Course in Spanish Literature (3-3)

Prerequisite: Spanish 4 with a grade of C or better.

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 with grade of C or better.

Reading from representative Spanish-American authors during the colonial, revolutionary and modern periods. Lecturers, class reading, collateral reading and reports.

105A-105B. Modern Spanish Drama (3-3)

Prerequisites: Spanish 4 and 11 with grade of C or better. The development of the drama of Spain from the beginning of the nineteenth century to the present time.

106A-106B. Mexican Literature (3-3)

Prerequisites: Spanish 4 and 11 with grade of C or better.

Aspects of Mexican culture. The first semester, a rapid survey of Mexican literature from the colonial period to the twentieth century. The second semester, 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 to 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 (2) |

Offered only at the Imperial Valley campus.

An advanced course in Spanish culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics.

141. Spanish-American Civilization (2) II

Offered only at the Imperial Valley campus.

An advanced course in Spanish-American culture. From the period of the Spanish Conquest to the present, with emphasis on the arts, literature, and philosophy. Lectures, class discussions, outside readings, written reports on individual topics.



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. Six units maximum credit. 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 units of upper division courses 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 Ouixote.

203. Lope de Vega and Calderon (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. (Formerly entitled: Spanish-American Poetry.)

206. Modernism (3)

234-44270

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 midthirties 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 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 credit 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.

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.

260. Seminar in Medieval Spanish Literature (3)

A representative author of the medieval period. 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 Bibliography (3)

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. Recommended for the first semester of graduate work.

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)

Prerequisite: consent of staff, to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis (3)

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, Mills (Chairman), Samovar Assistant Professors: Babich, Hunsaker, King, Sanders, Smith

Offered by the Department

Master of Arts degree in speech communication.

Major in speech communication with the A.B. degree in applied arts and sciences.

Teaching major in speech communication, with specialization in secondary teaching.

Minor in speech communication.

Teaching minor in speech communication, with specialization in both elementary and secondary teaching.

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

25-44205

Preparation for the major. Speech Communication 5, 11A or 11B, 35, and 60. (12 units.)

Major. A minimum of 27 upper division units to include Speech Communication 108, 130, 135, 150, 162, 191, 192B, and six units of electives in speech communication.

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 communications.

Speech Communication Major

For the Standard 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 the students in Teacher Education as an undergraduate major for the A.B. degree in applied arts and sciences.

Speech Communication

Speech Communication

Specialization in Secondary Teaching

Preparation for the major. Speech Communication 5, 11A or 11B, 35, 60. (12 units.)

Teaching major (undergraduate). A minimum of 27 upper division units to include Speech Communication 108, 130, 135, 150, 162, 191, 192B, and six units of electives in speech communication.

Postgraduate Year. Six upper division or graduate units in speech communication. These may include any 100-numbered course not previously taken or any 200-numbered course.

Speech Communication Minor

For the Standard Teaching Credential

The minor in speech communication for elementary and secondary teaching consists of a minimum of 23 units to include Speech Communication 3 or 4, 11A or 11B, 35 and 60, and twelve units of upper division electives drawn from the speech communication major pattern.

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. (Formerly numbered Speech Arts 3.)

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. (Formerly numbered Speech Arts 4.)

5. Introduction to Speech Communication (3) I, II

An introduction to the field of speech communication.

11A. Fundamentals of Interpretation (3) I, II

Application of the principles involved in

making words come alive": response to thought and mood, sensory association, emphasis, climax. Practice selections in poetry and prose. (Formerly numbered Speech Arts 11A.)

11B. Intermediate Interpretation (3)

Prerequisite: Speech Communication 11A. Oral reading of various types of material suitable for popular audiences: stories, humorous sketches, light and sentimental verse. (Formerly numbered Speech Arts 11B.)

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. (Formerly numbered Speech Arts 60.)

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 61 and 161. (Formerly numbered Speech Arts 61.)

64. Principles of Parliamentary Procedure (1) I, II

Two hours.

The rules which govern discussion and procedures in organized assemblies. The class will be arranged as a parliamentary body to afford practice in the application of the rules. (Formerly numbered Speech Arts 64.)

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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 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. (Formerly numbered Speech Arts 101.)

108. Advanced Interpretation (3) I, II

Three lecture-demonstrations per week and 32 hours of laboratory per semester.

Prerequisite: Speech Communication 11A or 11B.

Analysis of techniques of literary composition as guides to oral interpretation. Achievements of the creative artists as they affect the interpretative artist. (Formerly numbered Speech Arts 108.)

Speech Communication

Speech Communication

109. Workshop in Speech (1-3)

Study of some problem in speech communication. Maximum credit six units. (Formerly numbered Speech Arts 109.)

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. (Formerly numbered Speech Arts 130.)

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. (Formerly numbered Speech Arts 135.)

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 61 and 161. (Formerly numbered Speech Arts 161.)

162. Advanced Argumentation (3) |

The approaches to argument and the patterns and problems in argument. Consideration of implications for society. Written and oral reports. (Formerly numbered Speech Arts 162.)

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

Refer to Honors Program.

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271-94355

180. American Public Address (3) I, II

Public discourse from the colonial period to the present.

189. Ethics of Speech Communication (3)

Prerequisite: 6 upper division units in philosophy or speech communication. Classical and modern ethical concepts applied to oral persuasion.

191. Group Communication (3) I, II

The 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. (Formerly numbered and entitled: Speech Arts 191, Organized Discussion.)

192A. Advanced Public Speaking (3) |

Prerequisite: Speech Communication 4.

The preparation and delivery of longer speeches. Study of classic models of public address. (Formerly numbered Speech Arts 192A.)

192B. Oral Persuasion (3) II

Prerequisite: Speech Communication 4.

Oral persuasion with an emphasis on motivation and the evaluation of persuasive techniques. Research project on a significant current problem. Results of research and persuasive principles used in actual speech. (Formerly numbered Speech Arts 192B.)

193. Mass Persuasion (3) I, II

Prerequisite: Speech Communication 4.

An historical and critical analysis of the theories, techniques and ethics of oral communicators who employ radio and television as a means of presenting social, political and religious issues. (Formerly numbered Speech Arts 193.)

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. (Formerly numbered Speech Arts 194.)

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. Six units maximum credit. Prerequisite: Consent of instructor.

Speech Communication

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 of 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 for maximum of six units. (Formerly numbered Speech Arts 208.)

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. (Formerly numbered Speech Arts 235.)

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. (Formerly numbered Speech Arts 262.)

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

282. Seminar: Contemporary American Public Address (3)

Prerequisites: Speech Communication 190 and 192A or 192B. (Formerly numbered Speech Arts 297.)

290. Experimental Procedures in Speech Communication (3)

Prerequisite: Credit or concurrent registration in Speech Communication 200.

Examination and evaluation of appropriate experimental procedures and traditional methods; special problems in research design. (Formerly numbered Speech Arts 290.)

291. Seminar in Group Discussion Theory (3)

Prerequisite: Speech Communication 191.

A study of descriptive and experiemental literature on group discussion covering such topics as interaction, leadership, and means of evaluation. (Formerly numbered Speech Arts 291.)

293. Seminar: Greek and Roman Public Address (3)

Prerequisites: Speech Communication 150 and 192A or 192B. (Formerly numbered Speech Arts 293.)

294. Seminar: 18th Century British Public Address (3)

Prerequisites: Speech Communication 150 and 192A or 192B. (Formerly numbered Speech Arts 294.)

298. Special Study (1-3)

Individual study. Six units maximum credit. Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3)

Prerequisite: 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

Faculty

Emeritus: Pfaff

Professors: Earnest (Chairman), Kopp, Nichols, Riedman Associate Professor: Thile Assistant Professors: Allen, Dimmick

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.

Specialized preparation in lieu of a minor: teacher of deaf or severely hard of hearing. See Education.

Restricted Credential, Speech and Hearing Specialist (Plan II).

Speech Pathology and Audiology Major

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

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed on page 85 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 may also select from 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 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.

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: Educa-

tion 101 (or 202) and 167; Psychology 106; Speech Pathology and Audiology 120, 121, 122, 123, 124 (or 206), 126, 127, 128, 129, 140, 145, 151; and 15 units, chosen with approval of the adviser, from Speech Pathology and Audiology 130, 131, 143, 150, 152, 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 non-standard oral language patterns. Practice in recognition and recall of such patterns.

5. Survey of Audiology (2) |

Audiology in diagnosis and rehabilitation of hearing impairment, medical practice, hearing conservation and research. Fifteen hours of observation required. (Formerly numbered Speech Arts 71.)

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. (Formerly numbered Speech Arts 70.)

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 153. Limit of nine units applicable 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. For students not majors in speech pathology and audiology.

120. Phonetics (3) I, II

Auditory and kinesthetic analysis of the sounds of the English language. Problems of foreign and bilingual dialect. (Formerly numbered Speech Arts 100.)

121. Anatomy, Physiology and Pathology of Speech (3) I, II

Prerequisites: Speech Pathology and Audiology 6; minimum overall grade point average of 2.50 in all courses listed under Preparation for the Major in Speech Pathology and Audiology and consent of the instructor.

Anatomy, physiology and pathology of speech. Survey of aphasia, cerebral palsy, cleft palate, voice disorders, including study of multiply handicapped child. Twenty hours of observatory required.

122. Functional Communication Disorders (3) I

Prerequisites: Speech Pathology and Audiology 6 and 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) |

Two lectures and two hours of laboratory.

Prerequisite: Psychology 50.

Functional anatomy of head, neck and thorax including laboratory exercises and demonstrations of charts, models, histological materials and cadavers. (Formerly numbered Speech Arts 172.)

124. Methods of Speech Therapy (3) |

Prerequisites: Speech Pathology and Audiology 6 and 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.

126. Clinical Practice in Speech Pathology (1-3) I, II, S

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, 123, 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 multi-disciplinary assessment. Practicum minimum of six hours.



Speech Pathology and Audiology

129. Speech Therapy in the Public Schools (2) I

Prerequisites: Speech Pathology and Audiology 6 and 121.

Knowledge, goals, organization, procedures in public education as related to speech and hearing; conducting surveys; preparing reports. (Formerly numbered Speech Arts 170B.)

130. 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

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

(Same course as Education 177)

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. (Formerly numbered Speech Arts 171A.)

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. (Formerly numbered Speech Arts 171B.)

142. Techniques of Audiometry (1-3) I, II

Three hours of laboratory per unit.

Prerequisite: Credit for or concurrent registration in Speech Pathology and Audiology 140.

Provides the laboratory experience necessary for the California School Audiometrist Certificate when taken concurrently with 171A. Duplicates classic auditory experiments when taken in conjunction with 143 or 244. Maximum credit three units. (Formerly numbered Speech Arts 171C.)

609

Speech Pathology and Audiology

143. Hearing Amplification (3) II

Prerequisites: Speech Pathology and Audiology 140 and 141.

Specific application of amplification for rehabilitation of the impaired hearing mechanism; devices, methods for their evaluation, historical perspective and practical considerations. (Formerly numbered Speech Arts 175.)

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. (Formerly numbered and entitled: Speech Arts 180B, Field Work in Clinical Practice in Testing Hearing.)

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. Maximum credit eight units for 126, 145, and 146. One unit represents 26 hours of direct clinical practice.

150. Education of Deaf Children (3) I

Educational programs, services and resources for hearing impaired, historical background, philosophy, sociological and psychological problems. (Formerly numbered and entitled: Speech Arts 169, Education of Hearing Impaired Children.)

151. Speech Reading and Auditory Training (3) I, II

Prerequisites: Speech Pathology and Auditory 121 and 140. Theory and methods of speech reading; auditory training techniques including survey of amplification systems. Twenty-six hours observation in programs for deaf, severly hard of hearing.

152. Speech Skills for the Deaf (3) I

Prerequisites: Speech Pathology and Audiology 121 and 150.

Theory and methods of teaching speech to the deaf. Twenty-six hours of observation in programs for deaf, severely hard of hearing. (Formerly numbered and entitled: Speech Arts 178B, Communication Skills for the Deaf.)

153. Language Skills for the Deaf (3) I

Prerequisites: Speech Pathology and Audiology 121 and 150.

General theoretical framework of language development; linguistic problems inherent in deafness. Principles and methods of teaching language to the deaf. Twenty-six hours of observation in programs for deaf and severely hard of hearing.

156. Field Work with the Deaf (1-3) I, II

Prerequisites: Speech Pathology and Audiology 151, 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 151, 152, and 153. Supervised therapy with representative deaf problems in the San Diego State Speech and Hearing Clinic. Maximum combined credit six units for 156 and 157.

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. (Formerly numbered Speech Arts 109.)

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. Six units maximum credit. Prerequisite: Consent of instructor.

Graduate Courses

200. Research and Bibliography (3)

Bibliographical 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. Voice 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. (Formerly numbered Speech Arts 276.)

202. Problems of Aphasia (3)

Prerequisites: Speech Pathology and Audiology 121 and 123.

Evaluation of aphasia, familiarity with diagnostic tools, theories of aphasia, and therapy for persons with disorders of symbolization (adult and congenital aphasia). The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 271.)

203. Problems of Cerebral Palsy (3)

310-44350

Prerequisites: Speech Pathology and Audiology 123 and 124.

Evaluation, theories of treatment and therapy for persons with speech disorders in cerebral palsy. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 272.)

Speech Pathology and Audiology

204. Problems of Cleft Palate (3)

Prerequisites: Speech Pathology and Audiology 123 and 124.

Evaluation and therapy for persons with cleft palate speech problems. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 273.)

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. The student is required to 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. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course.

226. Advanced Clinical Practice in Speech Pathology (1 or 2)

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)

Prerequisites: Speech Pathology and Audiology 126, 127, and 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. (Formerly numbered Speech Arts 279.)

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. (Formerly numbered Speech Arts 278.)

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. (Formerly numbered Speech Arts 177.)

245. Advanced Clinical Practice in Audiologic Assessment (1-2)

Prerequisites: Speech Pathology and Audiology 140 and 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)

Prerequisite: Speech Pathology and Audiology 141.

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)

Prerequistes: Speech Pathology and Audiology 120 and 152.

Physiology underlying the production of continuous speech, including transitional movements, based upon a syllabic concept. (Formerly numbered Speech Pathology and Audiology 154.)

256. Advanced Field Work with the Deaf (1-3)

Prerequisites: Speech Pathology and Audiology 151, 152, 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, 150, 151, or 127. 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.

297. Research (2)

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)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3)

115-94577

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Telecommunications and Film In the College of Professional Studies

Faculty

Professors: Jones, Lee (Chairman)

Associate Professors: Anderson, Jameson, Johnson, J., Madsen, Wylie Assistant Professors: Johnson, E., Martin, Meador Lecturer: Comstock

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 85 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, 3, 10, 20, 30, 67 and 83. (21 units.)

Major. A minimum of 24 upper division units in telecommunications and film to include Telecommunications and Film 101 or 105, 162, 196 and fifteen 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 85 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, 3, 10, 20, 30, 67 and 83. (21 units.)

Major. A minimum of 36 upper division units to include Telecommunications and Film 162 and 196, a core professional sequence, and a minimum of six units in an allied professional sequence; three 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, 130, and Psychology 122. (15 units.)

Film: Telecommunications and Film 101 or 105, 110, 150, 156, 168, 180. (20 units.)

Allied Professional Sequences. (Courses taken in Core Professional Sequences cannot be counted toward the Allied Professional Sequence.)

Advertising. Telecommunications and Film 103, Business Administration 150, 153, and Journalism 153.

Art. Art 107, 114A, 114B, 190, and Industrial Arts 115.

Communication. Speech Communication 135, 193, Journalism 117, 121, and 162.

Criticism. Humanities 138, Music 151, Philosophy 142, Comparative Literature 152A, 152B, and Speech Communication 154.

Education. Telecommunications and Film 170, Education 101, 111, and 144. Information Systems. Business Administration 184, 185, 186, and 188.

International Media. Telecommunications and Film 108, 163, and Journalism 118.

Management. Telecommunications and Film 101, Business Administration 140, 143 and 145.

News. Telecommunications and Film 105, 112, and Journalism 102, 124, and 125.

Performance. Drama 131, 132, Telecommunications and Film 181, and Speech Communication 108.

Playwriting. Telecommunications and Film 110, Drama 120, 122, and English 171.

Scene Design. Telecommunications and Film 150, 156, and Drama 140A and 148.

Radio-Television Minor

326-4463

The minor consists of a minimum of 15 units in telecommunications and film to include Telecommunications and Film 1 and 3, and at least six units in upper division courses.

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. (Formerly numbered Speech Arts 80.)

3. Technical Operations for Broadcasting (3) I, II

Two lectures and more than three hours of scheduled activity.

Control room and studio techniques necessary for radio and television operation. Includes camera operation, video control, television lighting, television recording, and operation of audio equipment. Students work on crews of KPBS-FM and TV, and ETV productions. (Formerly numbered Speech Arts 81.)

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. Students provide continuity for KPBS-FM. (Formerly numbered Speech Arts 79.)

20. Introduction to Photography (3) I, II

(Same course as Industrial Arts 40.)

One lecture and six hours of laboratory.

A consideration of photograpic 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 or Industrial Arts 140. (Formerly numbered Speech Arts 85.)

30. Radio Production (3) I, II

Two lectures and more than three hours of scheduled activity.

Prerequisite: Telocommunications and Film 3.

Theory of radio production augmented by practice in program planning and production for KPBS-FM. (Formerly numbered Speech Arts 82.)

32. Workshop in Educational Radio Broadcasting (6) \$ (9 weeks)

Practice and theory in educational radio broadcasting operations, to include program planning, staff administration, and announcing. Students in the workshop will function in staff duties for KPBS-FM. Offered jointly with Telecommunications and film 132. Not open to students with credit for Telecommunications and Film 132. (Formerly numbered Speech Arts 44S.)

56. Staging and Art for Television and Film (3) I, II

Two lectures and three hours of laboratory.

Technical practice, aesthetic considerations, and organization of production for television and film. (Formerly numbered and entitled: Speech Arts 56, Dramatic Production.)

67. Cinema as Art and Communication (3) I, II

Prerequisite: Sophomore standing.

An appreciative survey of cinema, with emphasis upon the feature film and the documentary. Historical and stylistic influences upon the aesthetic values and social implications of cinema. Illustrated by screen examples. (Formerly numbered Speech Arts 67.)

70. Broadcasting Activities for Schools (3) |

Two lectures and three hours of scheduled activity.

The planning and production of radio and television broadcasts. Designed for students interested in handling broadcast activities in speech and drama classes and workshops for high schools and junior colleges. Not open to students with credit in Telecommunications and Film 1. (Formerly numbered Speech Arts 86.)

83. Television Production and Directing (3) I, II

Two lectures and more than three hours of scheduled activity.

Prerequisites: Telecommunications and Film 3 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. (Formerly numbered Speech Arts 83.)

90. Broadcast and Film Performance (3) I, II

Two lectures and more than three hours of scheduled activity.

Prerequisites: Drama 10 or Speech Communication 11A, and Drama 30. Preparation and delivery of materials before the microphone and camera. Participation in productions for KPBS-FM, KPBS-TV, ETV, ITV and motion pictures. (Formerly numbered Speech Arts 88.)

99. Experimental Topics (2-4)

Refer to the catalog statement on Experimental Topics on page 153. Limit of nine units applicable 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

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. (Formerly numbered Speech Arts 181.)

103. Broadcast Advertising (3) |

31-451

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

Prerequisites: Telecommunications and Film 1, 30, and 83.

Responsibilities of broadcasters as prescribed by law, governmental policies and regulations, and significant court decisions. (Formerly numbered Speech Arts 120.)

108. International Broadcasting (3) II

Prerequisite: Telecommunications and Film 105.

Comparative study of broadcasting in various world areas; economic, social, and political determinants of broadcasting patterns. (Formerly numbered Speech Arts 121.)

110. Writing and Producing for Broadcasting and Film (3) I, II

Prerequisites: Telecommunications and Film 1, 30, and 83.

Scripting of dramatic and documentary forms, to include the development of original materials and adaptations for the broadcast media and film, as well as problems in the post-writing process of preparing scripts for production, and the development of program and series ideas. (Formerly numbered Speech

112. Radio and Television News (3) I, II

(Same course as Journalism 104)

Gathering, writing, and editing news in special forms required by radio and television; processing wire service copy, still pictures and kinescopes; filming, editing and scripting news on motion pictures; using recorders to report special event. (Formerly numbered Speech Arts 187.)

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 moderm programming. Student work is broadcast on KPBS-FM. (Formerly numbered Speech

132. Workshop in Educational Radio Broadcasting (6) 5 (9 weeks)

Practice and theory in educational radio broadcasting operation to include program planning, staff administration, and announcing. Students in this workshop will function in staff duties for KPBS-FM. Offered jointly with Telecommunications and Film 32. (Formerly numbered Speech Arts 144S.)

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 elec-

111-115 10

Telecommunications and Film

tronic transmission. Work on KPBS-TV, ETV, CCTV, and formal films. (Formerly numbered and entitled: Speech Arts 145A-145B, Stage Lighting.)

156. Advanced Lighting and Staging for Television and Film (4) I, II

One lecture and more than nine hours of scheduled activity. Prerequisites: Telecommunications and Film 3, 20, 56.

Production elements of television and film, to include lighting and staging techniques, art and graphics, scene design and scene decoration. Experience in various technical and production specialties of television and film, as demonstrated principally by work for KPBS-TV and ETV. (Formerly numbered Speech Arts 182.)

162. Film Techniques (3) I, II

Two lectures and three hours of scheduled activity.

Prerequisite: Telecommunications and Film 20.

Principles of film theory, and practice in cinematography and editing; use of motion picture equipment. Technique and theory as they apply to the several filmic forms. Preparation of filmed materials. (Formerly numbered Speech Arts 167.)

163. International Cinema (3) |

Prerequisite: Telecommunications and Film 67.

Foriegn feature films as expressions of national attitudes. (Formerly numbered Speech Arts 189.)

165. Animated Film Techniques (3) I, II

Screening of representative examples and production of a filmograph or animated motion picture. (Formerly numbered Speech Arts 197.)

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

Refer to Honors Program.

168. Film Production (4) I, II

One lecture and nine hours of scheduled activity.

Prerequisite: Telecommunications and Film 162.

Advanced practicum in film production. Studio and location work in the preparation of filmed materials, and complete nontheatrical films. (Formerly numbered Speech Arts 168.)

170. Educational Broadcasting (3) II

Prerequisites: Telecommunications and Film 1, and Education 101. The role of educational broadcasting in the United States: social and educational impact of noncommercial radio and television; introduction to production techniques for instructional television; and procedures for the utilization of television in the classroom. (Formerly numbered Speech Arts 185.)

172. Workshop in Educational Television (6) \$

(Same course as Education 143-S)

141-43.65

Open to teachers and students interested in instruction by television. The procedures and theories of television production as it pertains to closedcircuit 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. (Formerly numbered Speech Arts 143S.)

180. Directing Television and Film Drama (3) I, II

Planned for prospective directors of plays for television and film. The student will become acquainted with principles, procedures and methods. (Formerly numbered and entitled: Speech Arts 159, Dramatic Production Directing.)

181. Acting for TV and Film (3) I, II

Prerequisite: Drama 30.

Interrelationship of acting and the various media-radio, television, film. Experience in film and television productions. (Formerly numbered Speech Arts 123.)

183. Advanced Programing and Development for Television (4) I, II

One lecture and more than nine hours of scheduled activity.

Prerequisites: Telecommunications and Film 110, 162, and consent of instructor.

The development of program ideas into formats for television productions of all types. Experience in developing and producing programs for CCTV and ETV. (Formerly numbered Speech Arts 183.)

184. Advanced Television Directing (4) I, II

One lecture and more than nine hours of scheduled activity.

Prerequisites: Telecommunications and Film 1, 56, 83, 162, 180 and consent of instructor.

Presentational techniques and individual projects in the direction and production of television programs for CCTV and ETV. (Formerly numbered Speech Arts 184.)

195. Workshop in Broadcasting (1-3) I, II

Study of some problem in radio, television or film. Maximum credit six units. (Formerly numbered and entitled Speech Arts 109, Workshop in Speech.)

196. Senior Project in Telecommunications and Film (3) I, II

Limited to students in Telecommunications and Film.

Student must demonstrate proficiency in a phase of broadcasting from development of a program idea through production for either radio, television, or film. A research paper may be substituted at the discretion of the adviser if the project chosen does not involve production. (Formerly numbered and entitled Speech Arts 188, Senior Project in Broadcasting.)

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. Six units maximum credit. 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. (Formerly numbered Speech Arts 283.)

202. Seminar in Broadcast Advertising Problems (3)

Prerequisite: The equivalent of an undergraduate major in telecommunicatins 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 upon broadcasting in the U.S. (Formerly numbered Speech Arts 282.)

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. (Formerly numbered and entitled Speech Arts 281, Survey Research in Broadcasting.)

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. (Formerly numbered Speech Arts 286.)

212. Criticism of Broadcasting and Cinema (3)

Prerequisites: 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. (Formerly numbered Speech Arts 287.)

268. Directing the Dramatic Film (3)

341-454

Prerequisites: Telecommunications and film 168, 180 and consent of instruc-

Analysis of techniques and stylistic contributions of major directors as seen tor. in their films. Production of a short dramatic film embodying concepts so learned. (Formerly numbered Speech Arts 268.)

270. Seminar in Educational Broadcasting (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film.

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. (Formerly numbered Speech Arts 285.)

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. (Formerly numbered Speech Arts 288.)

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.

284. Seminar in Programing and Production (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film.

Theory and analysis of programming and production of broadcasting. (Formerly numbered Speech Arts 284.)

298. Special Study (1-3)

Individual study. Six units maximum credit.

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3)

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

Faculty

Assistant Professors: Hollander (Chairman), Kessel, Taylor

Offered by Women's Studies

Courses in Women's Studies Major or minor work is not offered.

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.

110. Socialization Process of Women (3) I, II

Role socialization of women; the effects of formal and informal social, economic, and political institutions upon role socialization from infancy to old age.

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.

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.

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.

160. Human Sexuality (3) I, II

154-95130

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 psycho-physiology of human sexual response.

Women's Studies

180. Status of Women Under Various Economic and Political Systems (3) I, II

Historical and contemporary intitutional 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: Harwood

Professors: Bohnsack, Carpenter (Chairman), Cohn, Crouch, Etheridge, Huffman, Hunsaker, Kaston, Olson, Wilson

Associate Professors: Atkins, Catlett, Collier, Dexter, Lillegraven, McLean, Norland, Plymale

Assistant Professors: Chen, Krekorian

Offered by the Department

Master of Arts and Master of Science 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.

Teaching major in the biological sciences, with specialization in secondary teaching.

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 85 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; and Mathematics 21 or 40. (38–42 units.) Recommended: Mathematics 22 or 50, and Physics 3A and 3B if 2A-2B were taken.

Major. A minimum of 24 upper division units in biology, botany, microbiology and zoology to include the following: Biology 101 or Zoology 140; biology 110 and 155; Botany 100, 101, 102, or 103; Biology 101 or 103, or Microbiology 101, or Zoology 108; Biology 156 or Zoology 102, or 103.

Zoology Major

155-93150

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 85 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; and Mathematics 21 or

Zoology

40. (38-42 units.) Recommended: Mathematics 22 or 50, and Physics 3A and 3B if 2A-2B were 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, 101, 102, or 103; Biology 101 or 103, or Microbiology 101, or Zoology 108; Biology 156 or Zoology 102, or 103. Units to complete the major must be selected with the approval of the adviser; up to 8 upper division units can be in chemistry, geology, mathematics and physics.

Zoology Minor

The minor consists of a minimum of 15 units in biological sciences, six of which must be upper division. Approval of the zoology adviser is required.

Biological Sciences Major

For the Standard Teaching Credential

Specialization in Secondary Teaching

The teaching major for secondary teaching requires an undergraduate major in one of the biological sciences: biology, botany, microbiology, or zoology. All courses in the major must have prior approval by the adviser for biological sciences teaching programs.

Postgraduate Year. A minimum of six units from courses acceptable for graduate credit on a master's degree program in the biological sciences.

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 153. Limit of nine units applicable 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, 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.

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. 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

44-4520

Two lectures and six hours of laboratory. Prerequisite: Zoology 60 or 106. Evolution, interrelationship, structure, identification, habits, 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 and 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.

Prerequisites: 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.

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.

Advanced treatment of some phase of entomology such as physiology, morphology, systematics or ecology, topic to be announced in the class schedule. Maximum credit nine units, not more than three of which may apply to a

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)

Two lectures and six hours of laboratory. Prerequisites: Biology 110, and Botany 100 or 103. Recommended: Zoology 50, 105, or 121.

Ecological principles as applied to insects, including consideration of crop ecosystems in relation to insect and mite outbreaks.

125. Economic Entomology (4)

Two lectures and six hours of laboratory.

Prerequisite: Zoology 50 or 121 (preferred), or Botany 100, 103, or 162. 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) II

Two lectures and three hours of laboratory.

Prerequisite: Zoology 50, 60, or 121, or Microbiology 101.

The role of insects and other arthropods in transmission and causation of human diseases.

127. Principles of Pest Management (3)

Two lectures and three hours of laboratory.

Prerequisites: Botany 100, 103, or 162; and Zoology 121, 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.

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.

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 for a maximum of six units.

135. Scientific Illustration (3)

174-95230

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 and a course in animal physiology and consent of instructor; 145A is prerequisite to 145B.

Zoology

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.

Prerequisites: 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. Vertebrate Paleontology (4) II

Two lectures and six hours of laboratory.

Prerequisite: Zoology 106.

Advanced studies in the evolution of vertebrates, including relations to earth history and topics in paleoecology and functional morphology. Laboratory emphasizes field and preparatory techniques and identification of mammalian fossils.

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.

172. Neurobehavior (4) II

Two lectures and six hours of laboratory.

Prerequisites: Zoology 170 or Psychology 113 or 114, and consent of instructor. Evolution of the senses and central nervous system and their significance in animal behavior. Invertebrates and lower vertebrates will be emphasized. Advanced laboratory training in neurophysiology and psychobiology.

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. Four units maximum credit for Zoology 198 or a combination of this course with Biology or Microbiology 198.

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

Individual study. Six units maximum credit.

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.

174-9329

Prerequisites: An upper division course in physiology. A course in calculus and one in biochemistry are recommended.

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.

215. Advanced Vertebrate Zoology (2)

Prerequisite: Consent of the instructor and any 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 to a maximum of six units. 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)

Research in one of the fields of zoology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Individual study. Six units maximum credit.

299. Thesis or Project (3)

Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

Addenda

Faculty Directory Index

Faculty and Officers of Administration 1971–1972

WALKER, DONALD E. (1968) Acting President A.B., M.Th., University of Southern California; Ph.D., Stanford University. ABBOTT, MITCHEL T. (1964) Professor of Chemistry B.Sc., Ph.D., University of California, Los Angeles ABBOTT, PATRICK L. (1971) Assistant Professor of Geology B.S., San Diego State; M.A., Ph.D. candidate, University of Texas. ACKERLY, ROBERT S., JR. (1963) Associate Dean, Staffing and Reporting B.A., College of Wooster; A.M., Colgate University; Ed.D., Indiana University. ADAMS, EILEEN (Mrs. H. L.) (1949) Assistant Education Resource Center Librarian A.B., Willamette University; B.S. in 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. ‡ AGARWAL, SOHAN L. (1969) Associate Professor of Civil Engineering B.Sc., Panjab Engineering College, India; M.E., Roorkee University, India; Ph.D., University of Texas. 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 College; M.S., Ph.D., University of California. ALF, EDWARD F., JR. (1963) .. .Professor of Psychology A.B., San Diego State College; Ph.D., University of Washington. ALLEN, ELIZABETH J. (1971) Assistant Professor of Speech Pathology and Audiology B.A., Seattle Pacific College; M.A., Louisiana State University. ALMOND, FRANK W. (1968) Associate Professor of Music A.B., M.A., San Diego State College; 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. AMAWASHI, YOSHIO (1971) Visiting Research Scholar in Anthropology B.A., Waseda University; M.S., Ph.D., Kyoto University. AMBLE, KJELL (1962) Professor of Drama B.A., Denison University; M.A., Ph.D., Northwestern University. AMBRIANO, JOHN D. (1969) Assistant Sciences Librarian B.A., University of Oklahoma; M.L.S., Columbia University. ANDERES, EUGENE A. (1968) Assistant Professor of Microbiology A.B., M.S., San Diego State College; Ph.D., Oregon State University.

1 On leave, year 1971-72.

ANDERSON, ALLAN W. (1962)
ANDERSON, ARTHUR J. O. (1961)
ANDERSON, DEL M. (Mrs. E. F.) (1969) Assistant Professor of Social Work A.B., M.S.W., San Diego State College.
ANDERSON, DWIGHT G. (1969)Assistant Profeessor of Political Science B.A., University of Montana; M.A., Ph.D. candidate, University of California.
ANDERSON, ERNEST F. (1971) (Under contract 1969-70) Associate Professor of Social Work
B.A., California State College, Los Angeles; M.S.W., San Diego State College.
† 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)
ANDERSON, HAYES L. (1966) Associate Professor of Telecommunications and Film B.A., Oregon State University; M.A. and additional graduate study, Michigan State University.
ANDERSON, PAUL S. (1955)
ANDERSON, PAUL V. (1954)
ANDERSON, W. CARLISLE (1955)
ANDERSON, ZOE E. (1965) Associate Professor of Family Studies and Consumer Sciences
B.S., Illinois Institute of Technology; M.S., Ph.D., University of Hintois.
ANDRAIN, CHARLES F. (1964) B.A., Whittier College; M.A., Ph.D., University of California.
ANDRESEN, GRACE E. (Mrs.) (1970) (Under contract 1900-10) Professor of Social Work
B.S., University of Illinois; M.S.w., Tulane University.
ANDRUS, RUTH (1962) FIGURES OF THE ANDRUS, RUTH (1962) ANDRUS, RUTH (1962) ANDRUS, University of Oregon; Ph.D., State University of Iowa.
ANGIONE, RONALD J. (1969)
ANINGER, THOMAS (1967) Assistant Professor of English B.A., M.A., Ph.D., University of California, Los Angeles.
ANNAS, ALICIA M. (1970)
ANTHONY, SALLY M. (Mrs.) (1965) Associate Professor of Secondary Education A.B., University of California, Los Angeles; Ed.M., Ed.D., Rutgers University.
APPLEBY, JOYCE O. (Mrs. A.) (1967) Associate Professor of History B.A., Stanford University; M.A., University of California, Santa Barbara; Ph.D., Clare- mont Graduate School.
t On leave, spring 1971–72. 1 On leave, year 1971–72.

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1 On leave, year 1971-72. * On leave, fall 1971-72.

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ALLANTINE, FRANCIS A. (1949)
ARBER, WILLIAM F. (1959) Professor of Marketing B.B.A., M.B.A., D.B.A., University of Washington.
BARCKLEY, ROBERT E. (1955)
ARCLAY, A. BERNICE (Mrs.) (1962)
ARILOTTI, DONALD C. (1971)Assistant Professor of Botany B.S., California State College, Los Angeles; M.A., University of Southern Florida.
ARNES, 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.
ARONE, JOAN F. (1960) Assistant Professor of Physical Education B.S., Sargent College, Boston University; M.S., Springfield College, Massachusetts.
ARRERA, ERNESTO M. (1969) Assistant Professor of Spanish Doctor en Leyes, University of Cartegena, Columbia; A.M., Ph.D., University of South- ern California.
ARRY, 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.
AUER, EDWARD G. (1956) Professor of Mechanical Engineering B.S., U.S. Naval Academy; M.S. and additional graduate study, University of California.
AXTER, ROBERT J. (1962)Associate Professor of Art B.S., M.S., M.F.A., University of Wisconsin.
AXTER, WILLIAM L. (1963)
EARNSON, LEROY W. (1970) Assistant Professor of Electrical and Electronic Engineering
B.S.E.E., University of Otan; M.S.E.E., Syracuse Chiversity, American Stranger, Chiversity of Otan; M.S.E.E., Syracuse Chiversity, American Stranger, Control of Cont
Search. ECKER, GERALD A. (1958)
ECKLUND, LESTER A. (1967) Associate Professor of Secondary Education D.S. M.Ed. Ph.D. University of Minnesota.
BEDORE, ROBERT L. (1959) Professor of Mechanical Engineering BEDORE, MSME Purdue University. Registered Professional Mechanical Engineer.
EE, CLIFFORD P. (1969) Assistant Professor of Secondary Education RA MA Western Michigan University; Ph.D., Michigan State University.
ELASCO, JAMES A. (1971)
On leave, fall 1971–72.

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BELCHER, DAVID W. (1957)
B.B.A., M.A., Ph.D., University of Minnesota.
BENDER, STEPHEN J. (1970)Assistant 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)
BENSON, JACKSON J. (1966)
BENTON, CARL W. (1948)
BERG, MARLOW J. (1970) Assistant Professor of Elementary Education B.S., M.A., Ph.D., University of Minnesota.
BERG, ROBERT V. (1963)
BERGE, DENNIS E. (1963)
B.S.E.M., Lafayette College; M.A., Ph.D., Washington University.
BIALY, RENATE S. (Mrs. J. J.) (1969) Assistant Professor of Russian B.A., M.A., University of California; Ph.D. candidate, University of California, Los
BIANCHINI, VICTOR E. (1971)
BIGELOW, MARYBELLE S. (Mrs. K. G.) (1956)
BIGGER, W. RICHARD (1952) Professor of Public Administration
B.A., M.A., University of Wisconsin; Ph.D., University of California, Los Angeles.
B.M., Youngstown University; M.F.A., Ohio University; Ph.D., University of Iowa.
B.S.E.E., University of Iowa; M.A., San Diego State College.
A.B., M.A., San Diego State College. BLACK BARBARA D. (1949) Assistant Professor of Elementary Education
R.N., E. W. Sparrow Hospital School of Nursing; B.S., University of Minnesota; M.S.,
t BLACKMON, DORA M. (Mrs. J.) (1968)
BLACKMUN, RUPERT B. (1970)
BLANC, SAM S. (1966)
t On leave, year 1971-72.

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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 Business Law A.B., San Diego State College; J.D., University of California.	
BLYTH, JOHN D. (1957)	
BOE, ALFRED F. (1968) Assistant Professor of English B.A., M.A., Ph.D. candidate, University of Arizona.	
BOGGS, WILMA T. (Mrs. A. H.) (1971)	
B.S., Kansas State University.	
BOHMER, PETER G. (1970) Assistant Professor of Economics B.S., Ph.D. candidate, Massachusetts Institute of Technology.	
BOHNSACK, KURT K. (1956)	
BONEY, ELAINE E. (1963)	
BOOSTROM, RONALD L. (1971)Assistant Professor of Public Administration and Urban Studies	
B.A., Long Beach State College; Master of Criminology, University of California, Berke- ley.	
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)	
BRADFORD, MARY (1969)	
BRADLEY, WALLACE W. (1961) Assistant Professor of Secondary Education B.S., University of Maryland; M.A., San Diego State College.	
BRANAN, ALVORD G. (1969) Assistant Professor of French B.A., University of Florida; M.A., Middlebury College; Ph.D. candidate, Tulane Univer- sity.	
BRANDT, CHARLES L. (1957) Professor of Family Studies and Consumer Sciences A.B., M.S., San Diego State.	
BRANDT, WILLIAM R., Captain, USAF (1971) Assistant Professor of Aerospace Studies B.S. M.S., Oklahoma State University.	
BRANSTETTER, R. DEANE (1955)	
BRASHERS, HOWARD C. (1968)	
BRAY, HENRY G. (1962)	
BREEDEN, SHIRLEY O. (Mrs. J. S.) (1971) Assistant Professor of Family Studies and Consumer Sciences	
A.B., M.S., San Diego State College.	

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BRIDENSTINE, DON C. (1956)
 BRIGGS, ROBERT M. (1957)
BROADBENT, HARRY H. (1949) Associate Professor of Physical Education A.B., University of Oklahoma; M.S., University of Pennsylvania.
 BRODSHATZER, ARTHUR (1956)
BROOKES, JOHN A. (1964)
BROOKS, DOUGLAS G. (1971) Assistant Professor of Marketing B.S., M.S., Stanford University; D.B.A., University of Washington.
BROWN, HAROLD K. (1971)
BROWN, RUTH M. D. (Mrs. E.) (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
B.S.E.E., Professional Degree in Electrical Engineering, Mississippi State University.
 BRUCE, PAUL (1957)
BRUDERER, CONRAD (1963)
 BRUNSON, THEODORE R. (1966)
 BRYANT, STEVEN J. (1964)
RYDEGAARD, MARGUERITE A. (Mrs. H.) (1936)Professor of
A.B., San Diego State College; M.A., Ph.D., Claremont Graduate School.
B.A., University of Texas; M.S., Ph.D., Purdue University.
UCK, ROBERT E. (1969)
UCKALEW, JAMES K. (1967)
UMPUS, JERRY D. (1971)
URDICK, DAVID L. (1968)
URGESS, WILLIAM C. (1961)

Faculty BURIAN, ROBERT J. (1968) Associate Professor of Counselor Education B.A., M.A., University of Arizona; Ed.D., Arizona State University. 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. BURTON, JOHN W. (1968) Assistant Professor of Spanish, Imperial Valley B.A., University of Utah; M.A., University of Mexico; additional graduate study, Brigham Young University. BUSH, DOUGLAS P. (1968) Associate Director of Libraries, Reader Services B.S., Brigham Young University; M.L.S., University of Washington. BUTLER, GERALD I. (1968) Assistant Professor of English A.B., University of California; M.A., Ph.D., University of Washington. BUTLER, RAY R. (1967)Associate Professor of Recreation B.A., M.Ed., University of Minnesota. BYRNE, GARY C. (1969) Assistant Professor of Political Science B.A., University of Redlands; Ph.D., University of North Carolina. CALLAHAN, PATRICIA M. (1971) Assistant Professor of Physical Education B.A., Maycrest College; M.A., University of Iowa. CAMPBELL, L. BERYL (1947)Associate Professor of Elementary Education A.B., University of California; M.A., Teachers College, Columbia University. 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. ...Associate Professor of Philosophy CARELLA, MICHAEL J. (1967) B.A., St. Patrick's College, California; M.A., St. Louis University; Ph.L., Ph.D., University of Louvain, Belgium. .Assistant Professor of Botany CARMICHAEL, NANCY M. (1968) B.A., Barnard College, Columbia University; M.A., Ph.D., Columbia University. t CARNEVALE, JAMES P. (1967) Associate Professor of Counselor Education B.A., University of California, Los Angeles; M.A., San Diego State College; Ph.D., University of Southern California. Professor of Zoology CARPENTER, ROGER E. (1963) B.A., University of Arizona; Ph.D., University of California, Los Angeles. CARRIER, WARREN P. (1969) Dean, College of Arts and Letters; Professor of English B.A., Miami University, Ohio; M.A., Harvard University; Ph.D., Occidental College. 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., State University of Iowa. .. Professor of Spanish CASE, THOMAS E. (1961) B.A., St. Thomas College; M.A., Ph.D., State University of Iowa. .. Associate Professor of Zoology CATLETT, ROBERT H. (1964) A.B., M.A., Colorado College; Ph.D., University of California, Davis. t On leave, year 1971-72.

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Faculty
CAVE, MARY F. (1946) Associate Professor of Physical Education B.S., University of North Dakota; M.A., San Diego State College.
CHADWICK, LEONARD E. (1949)Associate Professor of Economics B.S. and additional graduate study at the University of California.
CHAMLEY, JOHN D. (1969)Assistant Professor of Counselor Education B.A., Pacific Lutheran University; M.A., Ed.D., Arizona State University.
CHAN, LILLIAN L. (Mrs. S. Y.) (1969)
CHAN, SHU-YUN (1965) Professor of Electrical and Electronic Engineering B.S., Susquehanna University; B.S.E.E., Columbia University; M.S.E.E., Ph.D., Univer- sity of Michigan.
CHANDLER, SHELLY E. (Mrs. D.) (1966) Associate Professor of Sociology B.A., M.A., Ph.D., University of California, Los Angeles.
CHANG, HAI-YAIN (1967) Associate Professor of Aerospace Engineering B.S., Cheng Kung University, China; M.S., Ph.D., Colorado State University.
CHAPMAN, JAMES L. (1959, except 1961–63) Professor of Business Law B.S., J.D., Northwestern University.
CHARLES, CAROL M. (1961)Professor of Elementary Education B.A., M.A., Eastern New Mexico University; Ph.D., University of New Mexico.
CHATER, ELIZABETH E. (Mrs. M.) (1964) Assistant Professor of English B.A., University of British Columbia; M.A., San Diego State College.
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)
CHILDRESS, WILLIAM A. (1968)
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. (1968)
CHU PAOCHIN (1967)
CHRYSLER, EARL (1970) Assistant Professor of Information Systems B.S., M.S., San Diego State College.
CLAPP, JAMES A. (1968) Associate Professor of Public Administration and Urban Studies
B.S., LeMoyne College; M.R.P., D.S.S., 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. (Mrs. R. B.) (1969)
CLARK, ORRIN H. (1960)
CLARY, VIRGINIA L. (1970) (Under contract 1967-70)Assistant Professor of Social Work

B.A., Municipal University of Omaha; M.S.W., University of Chicago.

+ On leave, spring 1971-72.

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Faculty
CLEMENT, NORRIS C. (1968)Associate Professor of Economics B.A., Sacramento State College; Ph.D., University of Colorado.
CLINGER, LAWRENCE A. (1969) Assistant Building Coordinator B.S., San Diego State College.
COAKLEY, RUTH M. (1961)Professor of Nursing B.S., Hunter College, City University of New York; A.M., Teachers College, Columbia University.
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) Assistant 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)
COLLIER, BOYD D. (1966)
COLLIER, GERALD (1961) Associate Professor of Zoology B.A., M.A., Ph.D., University of California, Los Angeles.
COLLINS, ROBERT N. (1970)Assistant Professor of Health Science and Safety B.A., Whitman College; M.S., Ed.D., University of Oregon.
COLM, C. LELAND (1938)
COLOMBO, ALBERT A. (1967) Assistant Professor of Geography B.S., California State College at Long Beach; M.A., San Diego State College.
CONLY, JOHN F. (1962)
CONNERS, LELAND W.C., Captain, USAF (1972) Assistant Professor of Aerospace Studies
B.S., Air Force Academy, M.A., San Diego State College.
CONNIFF, JAMES J. (1968) Assistant 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, ROBERT L. (1971)
* COOX, ALVIN D. (1964) Professor of History B A New York University; M.A., Ph.D., Harvard University.
CORYELL, DONALD D. (1961)
B.A., M.S., University of Washington.
COTTRELL, ANN W. (Mrs. D.) (1967) Assistant Professor of Sociology B.A., Miami University, Ohio; M.A., Ph.D., Michigan State University.
COTTRELL, DON M. (1967) Associate Protessor of Physics B.S., Ph.D., University of Washington.
COULOMBE, HARRY N. (1969)
* On leave, fall 1971-72.

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Faculty

COVENY, CECELIA T. (1957)Professor of Nursing B.S., University of Minnesota; M.P.H., University of North Carolina.	
COVER, CLARENCE B. (1959)Facilities Planning Assistant B.S., M.A., Ohio State University.	
COVINGTON, DON P. (1965)	
COWAN, ERROL (1971)	
COX, GEORGE W. (1962)	
COX, THOMAS R. (1967)	
CRAIG, GEORGE T. (1968) Associate Professor of Mechanical Engineering B.S., Pennsylvania State University; M.S., Ph.D., Louisiana State University.	
CRAIG, ROBERT L. (1960)	
CRAIN, MELVIN (1959)Professor of Political Science A.B., University of Redlands; M.A., Ph.D., University of Southern California.	
CRANE, NATHALIA (1958) Assistant Professor of English Special study at Barnard College, University of Madrid, and Sorbonne.	
CRAWFORD, JAMES (1968)	
CRAWFORD, MAURICE L. (1954)Professor of Information Systems B.S., M.S., University of Utah; Ed.D., University of California, Los Angeles.	
CRAWFORD, PATRICIA A. (1961)Associate Professor of Philosophy B.A., M.A., University of Rochester; Ph.D., University of Minnesota.	
CRISLEY, CORNELIUS J. (1962)	
CROOKER, ANDREW J. (1968) Assistant Professor of Aerospace Engineering B.S., University of New Hampshire; M.S., Ph.D., University of Illinois.	
CROSS, CHRISTA M. (Mrs. R. K.) (1969) Assistant Professor of German B.A., M.A., additional graduate study, University of California, Los Angeles.	
CROUCH, JAMES ENSIGN (1932)	
CRUM, CLYDE E. (1955)	
CULLEN, F. PATRICIA (1964)	
CUMMINS, EMERY J. (1966) Associate Professor of Counselor Education B.A., Wheaton College; M.S., University of Southern California; Ph.D., Michigan State University.	
CUNNIFF, ROGER L. (1967)	
CUTTER, CHARLES H. (1968) Assistant Professor of Political Science A.B., M.A., University of California; doctoral candidate, University of California, Los Angeles.	
I On leave, year 1971-72	

L	DANIELS, MORRIS J. (1956)	Professor of Sociology
	B.A., Southern Methodist University; M.A., Ph.D., Un	niversity of Texas.
Ľ	DARLEY, RICHARD D. (1961) B.S., Cornell University; M.S., University of Missouri;	Professor of Marketing Ph.D., Purdue University.
Ľ	DAUB, CLARENCE T., JR. (1967)A B.A., Carleton College; Ph.D., University of Wisconsi	ssociate Professor of Astronomy n.
Ľ	DAUGHERTY, WAYNE F., JR. (1966) B.A., Long Beach State College; Ph.D., Johns Hopkin	Associate Professor of Biology Is University.
D	DAVIES, THOMAS M., JR. (1968) B.A., M.A., University of Nebraska; Ph.D., University	Assistant Professor of History of New Mexico.
Ľ	DAVIS, CRAIG H. (1967) B.S., Oregon State University; M.S., Ph.D., University	Assistant Professor of Biology of Washington.
Ľ	DAVIS, GLOVER T., II (1966) B.A., Fresno State College; M.F.A., State University of	Assistant Professor of English of Iowa.
D	DAVIS, RICHARD L. (1969) B.S., M.S., University of California, Los Angeles.	Head Coach, Basketball
D	DAVIS, RONALD W. (1968)Ass B.A., Ph.D., University of Colorado.	ociate Professor of Mathematics
D	DEANGELIS, RICHARD A. (1971) B.A., Harvard College; M.A., University of Chicago.	Lecturer in Political Science
D	DEATON, EDMUND I. (1960) B.A., Hardin-Simmons University; M.A., Ph.D., Unive	Professor of Mathematics prsity of Texas.
D	DEFRAN, RICHARD H. (1970)	ssistant Professor of Psychology ing Green State University.
D	DELORA, JACK R. (1955) B.S., Bowling Green State University; M.A., Western R gan State University.	eserve University; Ph.D., Michi-
D	DELORA, JOANN H. (Mrs. J.) (1967) B.A., M.A., Ph.D., University of Texas.	Associate Professor of Sociology
D	DEMARINIS, FREDERICK M. (1969) B.A., M.A., University of Montana.	Assistant Professor of English
D	DERIVERA, RUTH A. (Mrs. C.) (1971) Instructo B.A., Muskingum College.	or in Mexican-American Studies
D	DESSEL, NORMAN F. (1961) B.A., M.A., Ph., State University of Iowa.	Professor of Physical Science
D	DETWEILER, ROBERT C. (1968) B.A., Humboldt State College; M.A., San Francisco Sta Washington.	Associate Professor of History ate College; Ph.D., University of
D	DEXTER, DEBORAH M. (1967) B.A., M.A., Stanford University; Ph.D., University of I	Associate Professor of Zoology North Carolina.
D	DHARMARAJAN, SANGIAH (1960)	essor of Aerospace Engineering Ph.D., University of Illinois.
D	DICKEN, CHARLES F. (1962) B.A., M.A., Ph.D., University of Minnesota.	Professor of Psychology
D	DICKERSON, MARY E. (1967) Assistant	Professor of Family Studies and Consumer Sciences
	B.S., M.S., Kansas State University.	D. Courses Librarian
D	DICKINSON, FIDELIA R. (Mrs.) (1966) B.A., M.A., Immaculate Heart College; M.L.S., Ph.D Angeles.	b., University of California, Los

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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 Lower Division 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. DILL, ROBERT S., JR. (1970) Assistant Professor of History B.A., Kent State University; M.A., Ph.D. candidate, University of Michigan. DIMMICK, KENNETH D. (1970) Assistant Professor of Speech Pathology and Audiology B.A., Northwestern State College; Ph.D., Stanford University. DIRKS, JOHN H. (1947) Professor of Art A.B., San Diego State College; M.F.A., Claremont Graduate School. DIRKSEN, DENNIS A. (1969)Assistant Professor of Industrial Arts B.A., McPherson College; M.S., Kansas State Teachers College; Ed.D., Utah State University. DODDS, LOWELL J. (1957) Associate Professor of Accounting A.B., University of Redlands; M.B.A., University of Denver. Certified Public Accountant. DOEBLIN, RICHARD S. (1971) Lecturer in English B.A., Yale University; B. Litt., D. Litt., University of Oxford. DONAHUE, THOMAS S. (1968) Assistant Professor of English B.A., Denison University, M.A., Miami University; Ohio; Ph.D., Ohio State University. DOORLAG, DONALD H. (1970) Assistant 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. DOWHOWER, RODNEY D. (1970) Lecturer in Athletics A.B., San Diego State College; M.A. candidate, United States International University. 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 College. DRAKE, CHARLES A. (1970) Assistant Professor of Sociology B.S., Brigham Young University; M.A., University of Maine; Ph.D., Michigan State University. DRAKE, GLENDON F. (1966) Assistant Professor of English A.B., Miami University, Ohio; M.A., Oklahoma State University; additional graduate study, Michigan State University and University of Michigan. 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) Assistant Professor of History B.A., M.A., Occidental College; additional graduate study, University of Oregon. DUKAS, VYTAS (1959) Professor of Russian A.B., M.A. (Russian), M.A. (German), Ph.D., University of Michigan.

Facul	1)
DULING, JOHN L. (1970) Assistant Professor of Education, Imperial Vall B.S., B.A., Morningside College; M.A., Iowa State University; Ed.D., University of Ca fornia.	leyali
DUNHOUSE, WILLIAM B. (1968) Assistant Professor of Fren B.A., University of Illinois; M.A., Middlebury College; Ph.D. candidate, University Wisconsin.	o
DUNKLE, HARVEY I. (1963)	ar
‡ DUNN, ROSS E. (1968)	bry L
EAGLE, JOHN E. (1946)	ic
ERNEST, SUE W. (Mrs L. E.) (1947) Professor of Speech Pathology and Audiolo A.B., San Diego State College; M.A., Ph.D., University of Southern California.	gy
EBERT, THOMAS A. (1969)	gy
ECKBERG, CARL F. (1969)	ic
EGGLESTON, DAVID M. (1970) Associate Professor of Aerospace Engineeri B.S., M.S., Ph.D., University of California.	ng
EIDEMILLER, DONALD I. (1956)	hy
EISNER, ROBERT E. (1970)	ic
EL-ASSAL, MOHAMED M. E. (1967) Associate Professor of Sociolo M.S., M.A., Ph.D., Indiana University.	gy
ELLIOTT, ELAINE Z. (Mrs.) (1967) Assistant Education Resource Center Librari A.B., University of California, Los Angeles; M.L.S., University of California, Berkele	iar ey
ELLIOTT, ROSALIE C. (1968) Associate Professor Elementary Educati	ion
B.A., Mount Holyoke College; M.A., Bryn Mawr College; Ph.D., Claremont Gradua School.	in
ELWIN, JOHN D. (1969)	IC
EMERICK, ROBERT E. (1968) Assistant Protessor of Sociolo B.A., University of California, Santa Barbara; Ph.D., Northwestern University.	'gy
ERB, EMERSON C. (1971)	nį
ERICKSON, PAUL (1963)	err
ERIKSON, GLENN C. (1970)Lecturer in Public Administration and Urban Stud BS_MS_Illinois Institute of Technology.	ie
ESTES, RUSSELL G. (1963)	ISIO
ESTUPINIAN, RALPH H. (1971) Associate Professor of Mexican-American Stud A B Son Francisco State College; M.A., University of Oregon.	ie
ETHERIDGE, RICHARD E. (1961) Professor of Zoolo B.S., Tulane University; M.S., Ph.D., University of Michigan.	gy
1 On leave, year 1971-1972.	

EZELL, PAUL H. (1956)
B.A., M.A., Ph.D., University of Arizona. Professor of Anthropology
FABO, CSILLA V. (Mrs. Z.) (1970)
* FARBER, GERALD H. (1968)
FARRIS, DAVID A. (1960)
B.S., Shippensburg State College, Pa.; M.A., Ed.D., Arizona State University.
B.A., Johns Hopkins University; M.A., Ph.D. candidate, University of California, San
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)
B.A., Swarthmore College; M.A., University of California; Ph.D., Yale University.
A.B., Adams State College; M.A., Colorado State College; Ed.D., Boston University.
A.B., graduate study, San Diego State College. FERREL, DALE B. (1957)
B.S., M.B.A., University of Denver. Certified Public Accountant. FETZER, LELAND A. (1966)
FILNER, ROBERT E. (1970) Associate Professor of Russian Associ
versity. FINCH, WILLIAM A, IR, (1001)
B.A., East Carolina College; M.A., University of Oklahoma; Ph.D., University of Illinois.
B.S., Monmouth College; M.D., Northwestern University. FISCH, ARLINE M. (1961)
B.S., Skidmore College; M.A., University of Illinois. FISHBURN, CLARENCE E. (1955) Professor of Sec. 1 (1955)
Stanford University. ISHER HORACE H. (1966)
A.B., University of Utah; M.A., Ph.D., University of Southern California.
B.S., Bethany College; M.A., Teachers College, Columbia University; Ph.D., University
B.S., M.Ed., Wayne State University; Ed. D., Michigan State University; J.D., Wayne
Dn leave, Fall 1971–72. Dn leave, year 1971–72.

FITZ, RICHARD A. (1959) Protessor of Mechanical Engineering B.S., Baldwin-Wallace College; M.S. (Ch.E.), Ph.D., Ohio State University.
FLAGG, DENIS A. (1955)
FLAGG, JOAN M. (Mrs. J. E.) (1969)
FLEMION, JESSIE L. STODDART (Mrs. P.F.) (1966) Assistant Professor of History B.A., Carroll College; M.A., University of Nebraska; Ph.D., University of California.
FLEMION, PHILIP F. (1968)
FLETCHER, WILLIAM, III (1970) Assistant Professor of Social Work B.A., Brown University; M.A., Tulane University.
FLITTNER, GLENN A. (1970)
FLYE, RICHARD C. (1950)
FORBING, SHIRLEY E. (Mrs.) (1969) Associate Professor of Special Education A.B., M.S., San Diego State College; 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, LAWRENCE R. (1970)
FORD, RICHARD F. (1964)
FORMAN, ROBERT B. (1963)
t FORREY, ROBERT J. (1968)
FORT, MARTHA (Mrs.) (1968) Assistant Professor of Social Work A B. Oberlin College: M.S.W., University of Pittsburgh.
FOUNTAIN, LEONARD D. (1960)
FOX, KATHLEEN (1962)
or Southern Camorina.

- of Southern California. FRANKLIN, ROBERT J. (1967)Assistant Professor of History; Imperial Valley B.A., Greenville College; M.A., University of Michigan; Ph.D., University of Southern California.
- Assistant Professor of Physical Education FRANZ, EDWARD P. (1965) B.S., M.A., Washington University.
- .. Assistant Professor of Psychology FRANZINI, LOUIS R. (1969) B.S., University of Pittsburgh; M.A., University of Toledo; Ph.D., University of Pitts-

burgh. Associate Professor of Geology FREDERIKSEN, NORMAN O. (1969) B.A., Hamilton College; M.S., Pennsylvania State University; Ph.D., University of Wisconsin.

† On leave, spring 1971-72 † On leave, year 1971-72.

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 FRENCH, HAROLD S., LLCol, USAF (1969) Professor of Aerospace Studies B.S., University of Missouri, M.B.A., University of Alabama. FREIDELI, THEODORE D. (1969) American Council on Education Intern B.A., M.A., University of Kanasa City; Ph.D., University of Missouri at Kanasa City. I'FREY, LEONARD H. (1956) Professor of English A.B., Dartmouth College; M.A., University of Wisconsin; Ph.D., University of Michigan. FRICK, FAY A. (Mrs.) (1970) Associate Professor of Physical Education B.S., Springfield College, Masachusetts; graduate study, Columbia University, School of Social Work, M.A., San Diego State College; Ph.D., United States International University. FRIEDMAN, ABRAHAM M. (1963) Professor of Secondary Education B.S., Springfield College, M.A., Columbia University; Ed.D., Teachers College, Columbia University. FRIEDRICH, KURT (1949) Professor of Secondary Education A.B., Columbia College; M.A., Columbia University; Ed.D., Teachers College, Columbia University. FUKAMIZU, RAYMOND H. (1969) Assistant Professor of Industrial Arts A.B., MA., San Diego State College, additional graduate study, University of California, Los Angeles. FULKERSON, F. GLEN (1954) Director of Audio-Visual Services; Professor of Education B.S., Staten P.J., University of California, Los Angeles. FUTCH, DAVID G. (1967) Assistant Professor of Political Science A.B., MA., Ph.D., University of California, Los Angeles. FUTCH, DAVID G. (1967) Associate Professor of Management B.S., M.B.A., Northwestern University; Ph.D., University of California, Los Angeles. FUTCH, DAVID G. (1967) Science A.B., Mathematical State School; Ph.D., University of Management B.S., M.B.A., Northwestern University; Ph.D., University of California, Los Angeles. GALBRAITH, OLIVER, III (1955) Science A.B., Mathematical Science A.B., Mathematical Science A.B., Ana, University of California, Los Angeles. GA	Faculty
 PREIDELL, THEODORE D. (1969)American Council on Education Intern B.A., M.A., University of Kansas City, Ph.D., University of Missouri at Kansas City, 1 FREY, LEONARD H. (1956) Assistant Professor of English A.B., Dartmouth College, M.A., Ph.D., University of Oregon. FRICK, FAY A. (Mrs.) (1970) Associate Professor of Physical Education B.S., Springfield College, Massachusetts; graduate study, Columbia University, of Michigan. FRIEDMAN, ABRAHAM M. (1963) Associate Professor of Physical Education B.S., Springfield College, Massachusetts; graduate study, Columbia University, Education of Social Work, M.A., San Diego State College; Ph.D., United States International University. FRIEDMICH, KURT (1949) Professor of Secondary Education A.B., Columbia University. FRIEDRICH, KURT (1949) Professor of Secondary Education A.B., Columbia University. FVAMIZU, RAYMOND H. (1969) Assistant Professor of Industrial Arts A.B., MA., San Diego State College; additional graduate study, University of California, Los Angeles. FULKERSON, E. GLEN (1954) Director of Audio-Visual Services; Professor of Education B.E., Southern Illinois University; M.A., Ed.D., University of California, Los Angeles. FUTCH, DAVID G. (1967) Assistant Professor of Biology B.A., University of California, Los Angeles. FUTCH, DAVID G. (1967) Assistant Professor of Biology B.A., University of California, Santa Barbara; Ph.D., University of California, Los Angeles. FUTCH, DAVID G. (1967)	FRENCH, HAROLD S., Lt.Col., USAF (1969) Professor of Aerospace Studies B.S., University of Missouri; M.B.A., Univesity of Alabama.
 I FREY, LEONARD H. (1965) 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 Michi- gan. 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 College; Ph.D., United States International University. FRIEDRICH, KURT (1949) Professor of Secondary Education A.B., Columbia University; Ed.D., Teachers College, Columbia University. FULKAMIZU, RAYMOND H. (1969) Assistant Professor of Industrial Arts A.B., M.A., San Diego State College; additional graduate study, University of California, Los Angeles. FULKERSON, E. GLEN (1954) Director of Audio-Visual Services: Professor of Education B.E., Southern Illinois University; M.A., Ed.D., University of California, Los Angeles. FUNSTON, RICHARD Y. (1970) Assistant Professor of Biology B.A., University of California, Los Angeles. FUTCH, DAVID G. (1967) Associate Professor of Management B.S., M.B.A., Northwestern University; Ph.D., University of California, Los Angeles. FUTCH, DAVID G. (1967) Associate Professor of Management B.S., M.B.A., Northwestern University; Ph.D., University of California, Los Angeles. * CALLO, PHILLP S., JR. (1968) Professor of Bology B.A., M.A., University of California, Santa Barbara; Ph.D., University of California, Los Angeles. * CALLO, PHILLP S., JR. (1969) Professor of Botany A.B., San Diego State College; M.A., Claremont Graduate School; Ph.D., University of Michigan. CANCE, SAMUEL J. (1969) Professor of Elementary Education B.A., Pacific Lutheran University; M.A., Ed.D., University of California, Los Angeles. * GALLOR, NUERY H. (1952) Professor of Elementary Education B.A., Pacifi	FREIDELL, THEODORE D. (1969)
 FRICK, FAY A. (Mrs.) (1970)	t FREY, LEONARD H. (1956)
 FRIEDMAN, ABRAHAM M. (1963)	FRICK, FAY A. (Mrs.) (1970)
 FRIEDRICH, KURT (1949)	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 College; Ph.D., United States International University.
 FUKAMIZU, RAYMOND H. (1969)	FRIEDRICH, KURT (1949)
 FULKERSON, E. GLEN (1954)	FUKAMIZU, RAYMOND H. (1969)Assistant Professor of Industrial Arts A.B., M.A., San Diego State College; additional graduate study, University of California, Los Angeles.
Professor of Education B.E., Southern Illinois University; M.A., Ed.D., University of California, Los Angeles. FUNSTON, RICHARD Y. (1970)	FULKERSON, E. GLEN (1954) Director of Audio-Visual Services:
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 FUTCH, DAVID G. (1967)	FUNSTON, RICHARD Y. (1970)
 GALBRAITH, OLIVER, III (1955)	FUTCH, DAVID G. (1967)
 * GALLO, PHILIP S., JR. (1963)	GALBRAITH, OLIVER, III (1955)
 GALLUP, AVERY H. (1952)	* GALLO, PHILIP S., JR. (1963)
 A.B., San Diego State College; M.A., Claremont Graduate School; Ph.D., University of Michigan. GANGE, SAMUEL J. (1969)	GALLUP, AVERY H. (1952)
 GANGE, SAMUEL J. (1969)	A.B., San Diego State College; M.A., Claremont Graduate School; Ph.D., University of
 GARRISON, BETTY B. (Mrs. J.) (1962)	B.A., Pacific Lutheran University MA EAD we Counselor
 ‡ GARRISON, JOHN D. (1956)	 GARRISON, BETTY B. (Mrs. J.) (1962)
 GAST, DAVID K. (1963)	t GARRISON, JOHN D. (1956)
 GASTIL, R. GORDON (1959)	 GAST, DAVID K. (1963)
GATES, GERALD F. (1955)	GASTIL, R. GORDON (1959) A.B., Ph.D., University of California. Professor of Geology
	GATES, GERALD F. (1955)

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CHILBERT, JEANNE S. (Mrs. H.) (1965) Assistant Professor of French B.A., B.Ed., University of Puget Sound; M.A., and additional graduate study, University of Washington.
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GINDLER, HERBERT A. (1960)
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B.A., Central Methodist College; M.Crim., D.Crim., University of California.

† On leave, spring 1971-72.

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GJERDE, CLAYTON M. (1948) Dean of Educational Services and Summer Sessions; Professor of Education A.B., Augsburg College; M.A., Ph.D., University of Minnesota.

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GOODSON, ROGER A. (1968)Associate Professor of Elementary Education B.S., University of Virginia; M.A., Ed.D., Teachers College, Columbia University.

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- GRANT, RICHARD H. (1968)Assistant Professor of Health Science and Safety B.S., M.S., University of Oregon; M.P.H., University of California; Ed.D., University of Oregon.
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GRAY, ROBERT T. (1956) Professor of Secondary Education A.B., M.Ed., Ed.D., University of Kansas.

GREENE, JOANNE H. (1967) Assistant Catalog Librarian B.A., Cornell University; M.S.L.S., University of Southern California. GREENE, MYRON (1968).

.. Assistant Professor of History A.B., A.M., University of Colorado; Ph.D. candidate, Indiana University.

GREENFELD, PHILIP J. (1969) Assistant Professor of Anthropology B.A., Pasadena College; M.A., Ph.D. candidate, University of Arizona.

GREENWOOD, NED H. (1964) Associate Professor of Geography B.S., M.S., Brigham Young University; Ph.D., Ohio State University.

GRIFFIN, RONALD W. (1967)Associate 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,

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Professor of Political Science GRIPP, RICHARD C. (1958) 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. GROOVER, DARRYL G. (1966) Assistant Professor of Art B.F.A., M.A., Kent State University; M.F.A., University of Arizona. Professor of English GROSS, GEORGE C. (1961) ... A.B., M.A., San Diego State College; Ph.D., University of Southern California. .Professor of Psychology GROSSBERG, JOHN M. (1962) .. A.B., Brooklyn College; M.A., Ph.D., Indiana University. Professor of Chemistry GRUBBS, EDWARD J. (1961) A.B., Occidental College; Ph.D., Massachusetts Institute of Technology. t GUENTZLER, WILLIAM D. (1968)Assistant Professor of Industrial Arts B.S., M.A., Kent State University. GUERTNER, GARY L. (1970) Assistant Professor of Political Science B.A., M.A., University of Arizona; Ph.D. candidate, Clarement Graduate School. GUIDRY, ROSALIND (Mrs. F. X.) (1970) Assistant Professor of Social Work B.A., M.A., California Western University; Ph.D., United States International 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) Instructor in Physical Education A.B., San Diego State College. Reference Librarian GWINUP, THOMAS R. (1968) B.A., M.A., University of Denver; M.A., Indiana University. ‡ HAAK, HAROLD H. (1962) Professor of Public Administration and Urban Studies B.A., M.A., University of Wisconsin; Ph.D., Princeton University. Associate Professor of Marketing HAAS, ROBERT W. (1967) B.B.A., St. Bonaventure University; M.S., D.B.A., Arizona State University. Assistant Professor of Journalism HABERSTROH, JACK (1968) B.A., Loyola University; M.S., University of California, Los Angeles; Ph.D., University of Iowa. HAFFLY, MARILYN (Mrs. D. B.) (1965) Assiatant Professor of Recreation B.A., Ohio Wesleyan university; M.A., University of North Carolina; additional graduate study, Indiana University. Assistant Professor of Mathematics HAGER, RICHARD A. (1970) .. B.Phys., Ph.D., University of Minnesota. Scholarship Adviser HAINES, RICHARD B. (1969) ... B.A., California State College, Fullerton; M.A., San Diego State College. Professor of Marketing HALE, E. ALAN (1957) ... B.A., Gustavus Adolphus College; M.A., Ph.D., University of Illinois. .. Professor of Secondary Education HALFAKER, PHILIP (1962) B.S., M.A., Ball State Teachers College; Ed.D., Indiana University. Activities Adviser HALLER, JUDITH L. (Mrs. J. L.) (1968) B.A., University of California, Los Angeles. Assistant Professor of Economics HAMBLETON, JOHN W. (1969) B.A., Boston college; M.A., Ph.D., University of Wisconsin.

1 On leave, year 1971-72.

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HAMILTON, RICHARD A. (1969)	
and Urban Studies B.S., University of Pennsylvania; M.B.A., University of Missouri; Ph.D., University of Southern California.	
HAMMER, GERALD K. (1963)	
HAMPTON, DAVID R. (1964)	
HANCHETT, ELIZABETH R. (Mrs. W. F.) (1969) Assistant Professor of French B.A., Reed College; M.A., Wellesley College; doctorat d'Université de Paris.	
HANCHETT, WILLIAM F., JR. (1956)	
HANSON, CHARLES L. (1966)	
HANSON, ROBERT F. (1962)	
HARARI, HERBERT (1966)	
HARDER, DONALD F. (1960) Dean of Counseling and Testing B.S., M.S., Ed.D., University of Kansas.	
HARDESTY, JOHN J. (1968) Assistant Professor of Economics A.B., Stanford University; A.M., University of Chicago; Ph.D., University of California, San Diego.	
HARKANYI, KATALIN (Mrs. T.) (1969) Assistant Catalog Librarian B.A., Wayne State University; M.L.S., Western Michigan University.	
HARMON, JAMES E. (1964) Assistant Professor of Political Science, Imperial Valley A.B., M.S., San Diego State College; Ph.D., United States International University.	
HARNED, W. WALLACE (1962)	
HARPER, LEROY A. (1959) Professor of Health Science and Safety B.S., M.S., Emporia State Teachers College; Ed.D., Teachers College, Columbia Univer- sity.	
 HARRIFF, RICHARD B. (1971) Assistant Professor of Information Systems B.S., University of California, Riverside; Ph.D. candidate, University of California, San Diego. 	
HARRINGTON, AWONA W. (1949)	
‡ HARRINGTON, NEIL J. (1948)	
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B.E.E., Polytechnic Institute of Brooklyn; M.S.E.E., San Diego State College.	
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HARRIS, VINCENT C. (1950) Professor of Mathem B.A., M.A., Ph.D., Northwestern University.	atics
HARRISON, GERALDINE M. (Mrs. R.) (1969) Assistant Catalog Libra A.B., Immaculate College, Pa.; M.S.L.S., Drexel Institute of Technology.	irian
HARRISON, PATRICK J. (1970) Assistant Professor of Secondary Educa B.S., M.S., Stout State University; Ph.D., Michigan State University.	ition
HARRISON, ROBERT C. (1953)Professor of Psycho B.S., M.S., Ph.D., University of Washington.	logy
* HARVEY, A. R. (1949)	atics
HARVEY, MICHAEL L. (1969)Assistant Professor of Dr B.S., Harvey Mudd College; M.A., University of California, Los Angeles; Ph.D., Uni sity of Minnesota.	ama iver-
HASSALL, DOROTHY M. (1971) Assistant Professor of Nur B.S., Hunter College of the University of the City of New York; M.Ed., Teac College, Columbia University.	sing hers
HAWLEY, PEGGY J. (Mrs. P. F.) (1968) Associate Professor of Counselor Educa B.A., California State College, Los Angeles; M.A., University of Redlands; Ph.D., Cl mont Graduate School.	tion lare-
HAWORTH, GLENN O. (1966)	Vork
HAWORTH, JOANNE (Mrs. G. O.) (1970)Associate Professor of Social W B.S., University of Illinois; M.S.W., additional graduate study, University of California	Vork rnia.
HAZEN, WILLIAM E. (1962) Professor of Bio B.S., St. Lawrence University; M.S., Ph.D., University of Michigan.	logy
HEAD, GERALD L. (1964) Associate Professor of Spanish and Portuge B.A., Ph.D., University of California, Los Angeles.	uese
HEG, E. BIDDLE (1969)	elor
HEIGES, HARVEY E. (1968) Associate Professor of Geogra B.A., Principia College; M.S., Pennsylvania State University; Ph.D., University of W ington.	iphy ash-
HELLBERG, LARS H. (1956)	istry
HENIG, SUZANNE (1968)	glish
HERMAN, ELSIE (Mrs. E.) (1969) Assistant Professor of Social W A.B., M.A., University of Chicago.	Vork
HERRMANN, H. HORST (1967)	man
HEUSSER, H. EARL, JR. (1968)	ition jon.
HEYMAN, NEIL M. (1969)	C A -+
HIGGINS, WINIFRED H. (Mrs. J.) (1964) Professor of B.S., Massachusetts College of Art; M.A. (History), Boston College Graduate Sci M.A., (Art History), Boston University; Ph.D., University of Caifornia, Los Ang M.A., (Art History), Boston University; Ph.D., University of Caifornia, Los Ang	hool; eles.
HILL, HOWARD (1967)	ach-

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Faculty

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 HILL, RICHARD B., JR. (1969) Assistant Professor of Sociology, Imperial Valley B.A., M.A., University of Missouri at Kansas City; Ph.D. candidate, University of Missouri, Columbia.
HILL, WAYNE O. (1955)
HILLIX, WILLIAM A. (1963, except 1967–69)Professor of Psychology B.A., M.A., Ph.D., University of Missouri, Columbia.
HIMES, JOAN K. (1967)
HIMES, RONALD S. (1969) Assistant Professor of Anthropology B.S., Georgetown University; M.A., Ateneo de Manila University, Philippines; Ph.D., University of Hawaii.
HINKLE, JAMES C. (1961)
HINTZMAN, WILLIAM R. (1969) Assistant Professor of Mathematics B.A., University of Wisconsin, Milwaukee; M.A., University of Michigan; Ph.D., Univer- sity of Wisconsin.
HIPPAKA, WILLIAM H. (1957) Professor of Business Law and Real Estate B.S.C., Jur.D., State University of Iowa.
‡ HIRD, ROBERT C., II (1967)Assistant Professor of Real Estate B.A., Pomona College; M.B.A., Stanford University; D.B.A., Arizona State University.
HO, HUNG-TA (1966) Associate 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.
HODGE, STANLEY B. (1968) Assistant Professor of Art B.A., M.A., University of California, Los Angeles.
HOGG, MERLE E. (1962)
t HOIDAL, ODDVAR K. (1967)
HOLLANDER, EARL D. (1970)
HOLLANDER, NANCY C. (Mrs. F. A.) (1971) Assistant Professor of Women's Studies B.A., M.A., University of California, Los Angeles.
HOLLYFIELD, CYNTHIA A. (1968) Assistant Professor of Physical Education B.S., Southwest Texas State College; M.A., Ball State University.
HOLMAN, DOROTHY J. (Mrs.) (1966) Associate Professor of Secondary Education B.S., M.S., North Texas State University, Ed.D., University of Kansas.
HOLMES, CALVIN V. (1956)
HOLOWACH, FRANK S. (1960)
1 On leave, year 1971-72.

† On leave, spring 1971–72.

HOLT, HOWARD B. (1961) Professor of Educational Administration B.S., Ed.M., Oregon State College; D.Ed., University of Oregon.
HOOVER, GRACE V. (1956)
HOPKINS, JACK R. (1961)
HORNBECK, FREDERICK W. (1968)
HOROWITZ, GIDEON (1968)
HOSTETLER, DAVID K. (1966)
HOWARD, EDGAR J. (1966)
HOWARD, GORDON S. (1968)
HOWARD, ROY J. (1963)
HOWELL, MAXWELL L. (1972)
HUBBARD, EVANGELINA B. (Mrs. L. J.) (1971)
B.A., M.A., Arizona State University.
* HUFFMAN, EDWARD W. (1955)
HUFFORD, LYLE E. (1967)
HULS, HARRY E. (1961)
HUNGATE, ROBERT P. (1961, except 1965–69) Dean, School of Business Administration Professor of Finance
B.A., University of Washington; Ph.D., University of Camorina, des range
HUNRICHS, WILLIAM A. (1957) 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)
B.A., M.S., Texas Technological College; Ph.D., University of Texas.
HUNT, A. MARK (1970) B.A., Candidate, University of California, San Diego. Associate Professor of Art
HUNTER, LAWRENCE B. (1963) A.B., San Diego State College; M.A., University of California, Los Angeles. Professor of Music
HURD, LYMAN C., III (1958) A.B., M.M., Syracuse University.
† HURLBERT, STUART H. (1970)
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HURWITZ, SAMUEL J. (1971)
HUSSAIN, NIHAD A. L. (1969) Assistant 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)
IKEDA, MASATOSHI G. (1971) Lecturer in Mathematics M.S., Ph.D., Osaka University.
IKEDA, MIYOSHI (1970) Assistant Professor of Education, Imperial Valley B.A., University of Hawaii; M.A., Ph.D., University of New Mexico
INGHAM, MURIEL B. (1967)
INGMANSON, DALE E. (1968) Assistant Professor of Physical Science B.S., Rollins College; M.Ed., Rutgers University: Ed D. University of Florida
INSKEEP, JAMES E., JR. (1960)
IRGANG, FRANK J. (1956)
IRONHILL, STEPHEN J. (1970)
IRWIN, MICHAEL A. (1964)
ISENSEE, ROBERT W. (1948)
ISHIKAWA, WESLEY H. (1969)
JACOBSON, EDWARD A. (1968)
JACOBSON, PETER (1971)
JAMESON, K. CHARLES (1965) Associate Professor of Telecommunications and Film B.A., M.A., University of Michigan.
JANSSEN, HENRY L. (1953)
JENCKS, CLINTON E. (1964)
ENSEN, REILLY C. (1958)
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Faculty	
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JOHNSON, ALBERT W. (1964) Dean, College of Sciences; Professor of Biology B.S., Colorado Agricultural and Mechanical College; M.S., Ph.D., University of Colo- rado.	
JOHNSON, BEVERLY M. (Mrs.) (1964) Catalog Librarian B.A., University of Alaska; M.A.L.S., University of California, Los Angeles.	
JOHNSON, C. DALE (1963) Professor of Sociology B.A., M.A., Ph.D., University of Minnesota.	
JOHNSON, ELIZABETH B. (1966) Assistant Professor of Telecommunications and Film B.A., University of Washington; M.S., Syracuse University.	
JOHNSON, EULALIA G. (1962)	
JOHNSON, JOSEPH S. (1967) Associate Professor of Telecommunications and Film B.A., University of Utah; Ph.D., Michigan State University.	
JOHNSON, PHILIP E. (1958)	
JOHNSON, WARREN A. (1969) Associate Professor of Geography B.S., University of California; M.S., Ph.D., University of Michigan.	
JOHNSON, WAYMAN H. L. (1969) Director, Educational Opportunities Program A.B., San Diego State College.	
JOKELA, ALICE C. (Mrs. A. W.) (1969) Assistant Professor of Microbiology B.S., National Taiwan University, Taiwan; M.S., Massachusetts Institute of Technology; Ph.D. University of California, San Diego.	
JONASSON, J. FRANKLIN (1968)	
JONES, KENNETH K., JR. (1948) Professor of Telecommunications and Film B.S., Northwestern University; M.A., Stanford University.	
JONES, RICHARD D. (1968)	
JONES, WALTER D. (1962)	
JORDAN, G. RAY, JR. (1966)	
JOY, NED V. (1953) Dean of Undergraduate Studies; Professor of Political Science A.B., Ph.D., University of California.	
JULIAN, JAMES L. (1951)	
KAATZ, JAMES M. (1967)	
KAHN, MARION J. (Mrs.) (1967)	
KAHNG, TAE JIN (1962)Professor of Pointeal Science B.A., Kent State University; M.A., Ph.D., Columbia University.	

+ On leave, spring 1971-72.

Faculty

bind, Marth, Oniversity of California, Los Angeles; Ph.D., University of California.	KAPLAN, OSCAR J. (1946) B.A., M.A., University of		Professor of Psychology iversity of California.
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KARNATH, DAVID L. (1968) Assistant Professor of English B.A., Notre Dame University; M.A., Stanford University; Ph.D. candidate, University of Minnesota.

- ‡ KARTMAN, ARTHUR E. (1968) Assistant Professor of Economics A.B., MacMurray College; M.A., Ph.D., University of Washington.

KARR, O. KENNETH, JR. (1969) Director of Athletics; Professor of Physical Education B.S., Illinois State University; M.S., Ph.D., University of Illinois.

KASKOWITZ, DAVID H. (1970) Assistant Professor of Mathematics B.A., University of Michigan; M.S., Stanford University.

KAY, JAMES N. (1971) Assistant Professor of Civil Engineering B.E., University of New South Wales; M.S., Ph.D., Northwestern University.

KEEN, ELMER A. (1967) Associate 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.

- 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)Associate Professor of Microbiology A.B., University of California; M.A., University of California, Los Angeles; Ph.D., University of Southern California.

KEMP, MAUDE BON P. (1964)Associate Professor of Social Work A.B., Wittenberg College, Ohio; M.A., Johns Hopkins University.

KENNEY, LOUIS A. (1961)

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)

A.B., Ph.D., University of California, Los Angeles.

1 On leave, year 1971-72.

KESSEL, ROBERT W. (1969)Associate Professor of Social Work A.B., Boston University; M.S.W., University of Michigan; D.S.W., University of Southern California.	
KESSLER, LOIS P. (Mrs. A.) (1969)Assistant Professor of Health Science and Safety R.N., the Hospital of the Good Samaritan, Los Angeles; B.S., University of Rochester; M.A., San Diego State College.	
KHALIL, ISSA J. (1969)	
KHAZANIE, RAMAKANT G. (1969) Associate Professor of Mathematics B.Sc., M.Sc., Bombay University, India; Ph.D., Purdue University.	
KIEWIET DE JONGE, ENGBERT J. C. (1963)Professor of Geography B.A., M.A., Ph.D., Clark University.	
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, STEPHEN W. (1971) Assistant Professor of Speech Communications B.A., M.A., University of Washington; Ph.D., University of Southern California, Los Angeles.	
KINNON, WILLIAM D. (1956)	
KIRBY, BERNARD C. (1954) Professor of Sociology	
A.B., Denison University; M.A., Fi.D., University of Administration and Urban Studies KITCHEN, JAMES D. (1957) Professor of Public Administration and Urban Studies	
B.A., M.A., Ph.D., University of California, Los Angeles.	
B.A., Western Washington College; M.A., Teachers College, Columbia University. B.A., Western Washington College; M.A., Teachers College, Columbia University.	
KLAPP, ORRIN E. (1948) M.A., Ph.D., University of Chicago.	
KLEINBERGS, SKAIDRITE (Mrs. V. F.) (1909)	
KOCHANSKI ADRIAN J. (1969)	
go. Executive Dean; Professor of Education	
B.S., Midland College; M.A., University of Colorado; Ph.D., University of Minnesota. Assistant Professor of English	
KOHLER, RICHARD C. (1969) B.A., Colorado State University; M.A., Ph.D., University of California, Los Angeles.	
KOPP, HARRIET G. (Mrs. G. A.) (1970) Professor of Speech radiology and the second seco	
KOPP, ROBERT P. (1966)	
KOPPELMAN, WALTER H. (1965, except 1967–68)Associate Professor of Philosophy KOPPELMAN, WALTER H. (1965, except 1967–68)Associate Professor of Philosophy	
B.S., City College of New York, J.D., 100 Associate Professor of Psychology KOPPMAN, JERRY W. (1963) Associate Professor of Psychology	
B.S., University of Kentucky; A.M., Ph.D., University of American Instructor in Nursing	
B.A., Jersey City State College; M.A., New York University. B.A., Jersey City State College; M.A., New York University. Assistant Professor of Mathematics	Sec. 11
KOREVARR, PIA R. (MIS. J.) (astronogy, Zurich, Switzerland. Ph.D., Federal Institute of Technology, Zurich, Switzerland.	

Faculty

KOZLIK, LUDEK A. (1965)	Professor of Russian
KREKORIAN, CHARLES O. (1970)	Assistant Professor of Zoology
KRISHNAMOORTHY, GOVINDARAJALU (1968)	Associate Professor of
B.E., College of Engineering, India; M.S.C.E., Ph.D.,	Illinois Institute of technology.
M.S. (Chemistry), M.S. (Geology), Ph.D., University	Associate Professor of Geology of Geneva.
KURTZ, DONALD V. (1967) Ass B.A., M.A., University of California; Ph.D. candidate	istant Professor of Anthropology University of California, Davis.
KWALLEK, NANCY B. (Mrs. V. F.) (1969) Assis	tant Professor of Family Studies and Consumer Sciences
I AIHO FTHELE (1064)	ersity.
Diploma, Mount Zion Hospital School of Nursing, Sa State College; M.S., University of Oregon.	n Francisco; A.B., San Francisco
LAKER, LASH H. (1970) B.S., Utah State University; M.Ed., Willamette University	
LALLY, HARVEY J. (1970) B.A., University of Queensland, Australia; M.A., Ph.E	Assistant Professor of Sociology , University of Minnesota.
LAMB, ALMA S. (Mrs. G. F.) (1962) Assistant Educa B.S., University of Alabama.	tion Resource Center Librarian
LAMBERT, ARTHUR A. (1960) B.S., M.A., M.F.A., Ph.D., State University of Iowa.	Professor of Music
LAMM, ROGER (1971) Ass B.S., M.B.A., Ph.D. candidate, University of Californi	istant Professor of Management a, Berkeley.
La MONICA, GRACE (Mrs. J.) (1966) R.N., St. Francis School of Nursing; B.S., University of California; M.S. (Public Health Nursing) Universit	Assistant Professor of Nursing Connecticut; B.S., University of y of california. Los Angeles.
LANDIS, JEAN (Mrs.) (1968) Assistant A.B., San Diego State College; M.S., Wellesley Coll University of Delaware.	Professor of Physical Education ege; additional graduate study,
LANDIS, VINCENT J. (1954) B.S., Washington State College; Ph.D., University of	
LANGENBACH, ROBERT G. (1959)P B.A., M.A., Montana State University; Ed.D., Unversi	rofessor of Information Systems ty of California, Los Angeles,
LA PRAY MARGARET H. (1959)Pro B.S., M.A., University of Minnesota; Ph.D., Cornell U	fessor of Elementary Education niversity.
LATTA, WILLIAM S. (1971) B.A., M.A., Ph.D., University of Cincinnati.	Counselor
LAUER, ROSEMARY Z. (1969)A B.A., University of Dayton; M.A., Ph.D., St. Louis Un	ssociate Professor of Philosophy
LAWSON, RICHARD H. (1957) B.A., M.A., University of Oregon; Ph.D., University of	f California, Los Angeles
EACH, LARRY L. (1968) Asso B.A., M.A., Ph.D., University of Colorado.	ciate Professor of Anthropology
On leave, year 1971–72. On leave, fall 1971–72.	

LEARNED, VINCENT R. (1968) Professor of Electrical and Electronic Engineering B.S., University of California; Ph.D., Stanford University.
LEASURE, J. WILLIAM (1962)
LEBARRON, EVANGELINE 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.
LECKART, BRUCE T. (1968) Associate Professor of Psychology B.A., M.A., Ph.D., Michigan State University.
LEE, GORDON F. (1958) Publications and Public Relations Officer A.B., Drew University; M.S., Columbia University.
LEE, PHOEBE J. (1960)Professor of Nursing Diploma, B.S., Stanford University School of Nursing; M.S., University of California, Los Angeles.
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 College; M.S.W., D.S.W., University of California.
LEERHOFF, RUTH E. (1964)
LEGERRETTE, CARLOS E. (1970) Director, Educational Opportunities Program Study at San Diego State College.
LEMME, MAURICE M. (1948) Dean of the Graduate Division; Professor of Mathematics A.B., Oakland College; M.A., Indiana University; Ph.D., Purdue University.
LEMON, DELORES D. (1970) Tutorial Coordinator, Educational Opportunities Program A.B., San Diego State College.
LEMUS, GEORGE (1960)
LEONHARDT, KARLFRITZ (1970) Associate Professor of Civil Engineering Dipl. Ing., Technical University, Munich, Germany; M.S.C.E., Ph.D. candidate, Univer- sity of Washington.
LESLEY, FRANK D. (1970)
LESLIE, NORMAN C. (1969) Assistant Professor of Nursing R.N., Rockland State Hospital; B.S., California State College, Long Beach; M.N., Univer- R.N., Rockland State Hospital; B.S., California State College, Long Beach; M.N., Univer-
LESSLEY, MERRILL J. (1970)
LEUKEL, FRANCIS P. (1956)
LEVINE, JOSEPH R. (1965) Associate Professor of Psychology
B.A., Brooklyn Conege, Mina, 2001 Assistant Professor of Nursing LEVY, SANDRA G. (Mrs. R. M.) (1971)
B.S., M.S., University of Maryland. LEWIN, HARLAN J. (1967) Associate Professor of Political Science
A.B., Harvard College; M.A., Ph.D., University of Camorina
§ Assigned duty in Brazil, 1971-72.

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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 College; M.B.A., Ph.D., University of California, Los Angeles.
LILLEGRAVEN, JASON A. (1969) Associate Professor of Zoology B.A., California State College, Long Beach; M.S., South Dakota School of Mines and Technology; Ph.D., University of Kansas
LILLY, ROGER A. (1968)
LIN, MAO-SHIU (1966) Associate Professor of Electrical and Electronic Engineering B.S.E., National Taiwan University, Taiwan; M.S.E., Ph.D., University of Michigan.
LINDGREN, DONALD A. (1965) Associate Professor of Marketing B.B.A., M.B.A., Ph.D., University of Wisconsin.
LINGREN, PAUL A. (1957)
‡ LINTON, MARIGOLD L. (Mrs.) (1964)Professor of Psychology B.A., University of California, Riverside; M.A., State University of Iowa; Ph.D., Univer- sity of California, Los Angeles.
LIPPOLD, LOIS K. (1968) Assistant Professor of Anthropology B.S., M.S., Ph.D., University of Wisconsin.
LITROWNIK, ALAN J. (1971)
LOCKMAN, EVELYN (1948)
LODGE, CHESTER R. (1954) Professor of Electrical and Electronic Engineering B.S.E.E., M.S., Ph.D., State 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)
LOOMIS, DAVID M. (1961)
B.A., Ph.D., University of California, Los Angeles.
DOWREY, NORMAN E. (1971)Assistant Professor of Music B.Mus., Texas Christian University; M.M., Ph.D. candidate, Eastman School of Music.
LuPONE, ORLANDO J. (1964)
YBARGER, ALVIN E. (1970)Assistant Professor of Industrial Arts B.A., Kearney State Teachers College; M.A., Colorado State College; Ed.D., Utah State University.
YNN, ELIZABETH (1963)
On Jeans 1971 70

* On leave, year 1971–72.

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MACKY, DAVID W. (1969)
‡ MADHAVAN, MURUGAPPA C. (1968)Associate Professor of Economics B.A., M.A., Annamalai University, India; M.Sc., Ph.D., University of Wisconsin.
MADSEN, ROY P. (1966) Associate Professor of Telecommunications and Film B.F.A., University of Illinois; M.A., Ph.D., University of Southern California.
MAHONEY, LEO J., JR. (1969)Ombudsman A.B., M.S.W., San Diego State College.
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)
MALLEY, MICHAEL M. (1970) Assistant Professor of Chemistry B.S., Stanford University; Ph.D., University of California, San Diego.
MANESE, WILFREDO R. (1971)Lecturer in Psychology B.A., Ateneo De Manila University; M.S., San Diego State College; 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 College; Ph.D., New York University.
MANN, RICHARD L. (1968) Associate Professor of Electrical and Electronic Engineering B.S.E.E., Ohio University; M.S.E.E., University of New Mexico. Registered Professional Electrical Engineer.
MANSFIELD, GEORGE A., JR. (1968) Assistant Professor of Mechanical Engineering B.M.E., University of Detroit; M.S.M.E., San Diego State College. Registered Mechani- cal Engineer.
MARCO, COREY (1967)
MARCUS, BERNARD (1966) Associate Professor of Mathematics B.S., M.S., Ph.D., University of Arizona.
MARCUSE, INGE S. (Mrs. H.) (1970) Lecturer in French M.A. (History), Columbia University; M.A. (French), Boston 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)Lower Division Librarian BA State University of Iowa; M.A.L.S., University of Wisconsin.
MARSTERS, HAROLD L. (1962)Assistant Professor of Industrial Arts
MARTIN, DONALD R. (1969) Assistant Professor of Telecommunications and Film MARTIN, DONALD R. (1969) Assistant 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. Assistant Professor of Family Studies
B.S., University of Idaho; M.S., Oregon State College.
1 On leave, year 1971-72.

Faculty

MARTINEZ, JESSE (1970) Lecturer in Mexican-American Studies A.B., University of the Americas; M.A. candidate, San Diego State College.
MATHEWSON, JAMES H. (1964) Associate Professor of Chemistry A.B., Harvard College; M.A., Ph.D., Johns Hopkins University.
MAX, STEFAN L. (1964)
MAXWELL, JEAN M. (1963)Professor of Social Work B.A., University of Minnesota; M.S.S., Western Reserve University.
MAY, THOMAS L. (1971)
McADAMS, HENRY E. (1966)
McALLISTER, T. WAYNE (1966)Assistant Professor of Educational Technology and Librarianship
B.A., Arizona State University; M.A., University of Denver.
McAMIS, LESSLEY J. (Mrs.) (1963) Documents Librarian B.A., University of Southern California.
McBLAIR, WILLIAM (1948)
McCABE, ROBERT E. (1968) Associate Professor of Secondary Education B.A., Michigan State University; A.M., Ph.D., University of Michigan.
McCLARD, Q. DONAVON (1966) Associate Professor of Special Education A.B., M.A., San Diego State College; Ph.D., University of Minnesota.
McCLINTIC, JOSEPH O. (1946)
McCLURG, JACK (1962)
McCORDICK, SHARON M. (1969)Assistant Professor of Psychology B.A., M.A., Ph.D., University of Colorado.
McCORNACK, ROBERT L. (1968)
McCOY, PAUL W. (1970)
McCOY, C. ROBERT (1960) Assistant Professor of English B.A., M.A., Drake University.
McCOY, LEONE D. (Mrs. W.) (1967) Associate Professor of Secondary Education B.A., M.A., Ph.D., University of California.
McDEAN, HARRY C. (1971)
McDONALD, JOHN A. (1968) Assistant Professor of History B.A., M.A., University of San Francisco; Ph.D. candidate, University of California, Los Angeles.
McDONALD, PAMELA S. (Mrs. R. C.) (1971) Lecturer of Nursing B.S., San Diego State.
* McDONALD, ROY D. (1963) Associate Professor of Psychology B.A., Ph.D., University of Texas.
McELMURY, SCOTT S. (1970) Assistant Professor of Mechanical Engineering B.S.M.E., M.S.M.E., San Diego State College: Ph.D., University of California, San Diego.

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* On leave, fall 1971-72.

McEOWEN, ROBERT H. (1967) Associate Professor of Industrial Arts B.S., M.S., Abilene Christian College; Ph.D., East Texas State University.
McEUEN, ROBERT B. (1969) Associate Professor of Geology B.A., M.A., University of California; Ph.D., University of Utah.
McFALL, JOHN (1966)
McGHIE, ROBERT D. (1967) Associate Professor of Aerospace Engineering B.S., University of California; M.S.M.E., San Diego State College; Ph.D., University of California, Davis.
McKERROW, MARGARET (1971)
McLEAN, NORMAN, JR. (1965) Associate Professor of Zoology B.S., Ph.D., University of California.
‡ McLEOD, DAN D. (1964)
McLEVIE, JOHN G. (1970) Assistant Professor of Secondary Education B.A., M.A., Victoria University of Wellington; Ph.D., Michigan State University.
McLONEY, WIRT L. (1949)
McMULLEN, JAMES D. (1958)
McTAGGART, AUBREY C. (1962) Professor of Health Science and Safety B.P.E., University of British Columbia; M.S., Ph.D., University of Illinois.
MEADOR, BRUCE S. (1970)
MEADOR, THOMAS C. (1966) Assistant Professor of Telecommunications and Film B.A., M.A., Michigan State University.
MEEK, DORIS A. (Mrs. J. R.) (1968) Associate Professor of Secondary Education B.A., M.Ed., Mills College; Ed.D., University of California.
MELCHIOR, HERBERT R. (1967) Assistant Professor of Biology A.B., Middlebury College; M.S., University of New Hampshire; Ph.D. candidate, University of Wisconsin.
MELTON, JOSEPH (1967)Associate Professor of Elementary Education B.A. M.Ed. Ed.D., Wayne State University.
MERRILL, JOHN E. (1946) Professor of History A B. Stanford University; A.M., Harvard University; Ph.D., Stanford University.
 MERZBACHER, CLAUDE FELL (1947)
Chemical Engineer. Professor of French
MESSIER, LEONARD N. (1946) A.B., San Diego State College; M.A., Ph.D., University of California. Officer dans l'Or- dre des Palmes Académiques.
METZGER, ROBERT P. (1968) Associate Professor of Physical Science B.S., University of California, Los Angeles; M.S., San Diego State College; Ph.D., San Diego State College and University of California, San Diego.
t On leave, year 1971-72.

MILES, ELIJAH W. (1966) Associate Professor of Political Science A.B. Prairie View Agricultural and Mechanical College, Texas; A.M., Ph.D., Indiana University.
MILLER, ALLAN W. (1963)
MILLER, F. EVAN (1971)
MILLER, PHILIP C. (1965)
MILLER, RALPH L. (1963) Professor of Counselor Education B.A., Houghton College, New York; B.D., 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)
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 College.
MINCH, JOHN A. (1971)
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)
MITTON, DARYL G. (1966) Associate Professor of Management B.C.E., M.B.A., Ph.D., University of Minnesota.
MOANEY, ERIC R. (1968)
* MOE, CHESNEY R. (1931)
* MOE, JEAN T. (Mrs. S.) (1970)
MOFFITT, MYRNA J. (Mrs. F. L.) (1968)
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)
MOOERS, JACK D. (1968)Associate Professor of Elementary Education A.B., San Jose State College; M.A., San Diego State College; Ed.D., University of Cali- fornia, Los Angeles.
MOORE, HAROLD B. (1960)

* On leave, fall 1971-72.

MOORE, PATRICIA J. (1964)
MOORE, ROBERT J., JR. (1968) Assistant Professor of Physical Education B.S., M.S., and additional graduate study, University of Illinois.
MORAMARCO, FRED S. (1969)
MORENO, STEVE G. (1969) Assistant Professor of Elementary Education B.A., M.A., Ed.D., Colorado State College.
MORGAN, CHARLES (1949)
MORGAN, RUTH H. (1968)
MORRIL, RICHARD A. (1970)
MORRIS, JOYCE (Mrs.) (1969) Assistant Professor of Elementary Education B A San Jose State College: M.A., Ph.D., University of New Mexico.
MORRIS, RICHARD H. (1957)
MORRIS, WILLIAM P. (1970) Assistant Professor of Secondary Education P. A. Antioch College: Ed M. Tufts University: Ph.D., Indiana University.
MORTENSEN, CARL F. (1970)
MOSER, JOSEPH M. (1959)
MOSES, DOROTHY V. (1958)
MOURATIDES, NICOS N. (1960)
MOYE, KENNETH G. (1965)Lecturer in Engineering A.B., San Diego State College.
MRACEK, JAROSLAV J. S. (1965)
MUNTER, ROBERT L. (1964)
MURPHY, JAMES R. (1970)
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) Assistant Professor of Elementary Education R A. Colorado State College; M.A., Ph.D., University of Iowa.
MURPHY, ROBERT J. (1964) Professor of mechanical Engineering PSME MSME, Ph.D., Carnegie Institute of Technology.
NAGEL, THOMAS S. (1969) Assistant Professor of Elementary Education R.S. University of Idaho; Ph.D., Michigan State University.
b.s., Ontersity of Alarah (1968)
10- Lana year 1971-72

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NARANG, BALBIR S. (1968) Associate Professor of Aerospace Engineering B.S., M.S., Ph.D., University of Illinois.
NARDELLI, ROBERT R. (1953)Professor of Elementary Education B.A., M.A., Arizona State College; Ph.D., University of California.
NASATIR, ABRAHAM PHINEAS (1928) Professor of History A.B., M.A., Ph.D., University of California.
NEEL, JAMES W. (1963)
NELSON, BURT (1957)
NELSON, HILDA B. (Mrs. B.) (1965) Associate Professor of French M.A., Ph.D., University of Wisconsin.
NELSON, SHERWOOD M. (1956)
NELSON, THOMAS A. (1968)
NESVIG, DAVID T. (1967)
NESVOLD, BETTY A. (Mrs. A.) (1967) Associate Professor of Political Science A.B., M.A., San Diego State College; 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 Univer- sity.
NEUMAN, DONALD R. (1967)
NEUNER, EDWARD J., JR. (1957)
NEYNDORFF, HANS (1962)
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)
NICHOLS, PRESCOTT S. (1966) Assistant Professor of English A.B., M.A., Stanford University; Ph.D., University of Redlands.
NOORANY, IRAJ (1963)
I NORLAND, CALVERT E. (1947) Associate Professor of Zoology A.B., Pomona College; M.S., University of California; additional graduate study, Clare- mont College.
NORMAN, NELSON F. (1960)
NOTO, JAMES V. (1969)Assistant Professor of Health Science and Safety B.S., Slippery Rock State College; M.S., H.S.D., Indiana University
NOWER, LEON (1963)

NUÑEZ, 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.
OADES, RIZALINO A. (1969) Assistant Professor of History B.A., Far Eastern University, Philippines; M.A., University of Hong Kong; Ph.D. candi- date, University of Hawaii.
O'BRIEN, ALBERT C. (1965)
O'BRIEN, BOB R. (1966) Associate 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)
O'DAY, EDWARD F., JR. (1957)Professor of Psychology B.S., M.A., Ph.D., University of Florida.
ODENDAHL, ERIC M. (1964)
ODMARK, VERN E. (1952)
OHNESORGE, JAMES P. (1969) Assistant Professor of Psychology A.B., Indiana University; Ph.D., candidate, University of Minnesota.
OHNYSTY, BASIL (1967) Associate Professor of Mechanical Engineering B.S. M.S., University of Illinois. Registered Professional Metallurgical Engineer.
OLSEN, ALBERT W. (1957)
* OLSEN, LYLE I. (1961)
OLSON, ANDREW C., JR. (1946)
OLSON, JON R. (1969)
O'NEAL, H. EDWARD (1961)
ONSTAD, GWEN (Mrs.) (1966)
ONTELL, ROBERT (1965)
O'REILLY, PETER (1968)
ORTH, FREDERICK J. (1965)
OSGOOD, JUDITH A. (1970)

* On leave, fall 1971-72.

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† On leave, spring 1971-72.

OVERTON, FRIEND R. (1969) B.S., A.M., University of Missouri, Columbia.	Lecturer in Music
OWEN, MACK (1969)	ssistant Professor of Drama ; Ph.D., University of Michi-
PADGETT, L. VINCENT (1956)P B.S., Ph.D., Northwestern University.	rofessor of Political Science
PALMER, DENNIS (1965)	ssistant Professor of French University and University of
PANOS, NICHOLAS (1968) Assis	stant Professor of Electrical
B.S.E.E., Columbia University; M.S.E.E., San Diego State sional Electrical Engineer.	nd Electronic Engineering College. Registered Profes-
PAOLINI, PAUL J., JR. (1970) As B.S., M.S., Rensselaer Polytechnic Institute; Ph.D., Univer	sistant Professor of Biology sity of California, Davis
‡ PAPE, JANE REEL (Mrs.) (1958) Assistant Professo A.B., M.A., San Diego State College.	r of Elementary Education
PAPWORTH, FRANK R. (1967) A.B., San Diego State College; M.A., University of Californ	Assistant Professor of Art
PARKER, CHRISTOPHER E. (1966) Associa A.B., M.A., San Diego State College; Ph.D., University of (te Professor of Psychology California, Los Angeles,
 PARSONS, JOHN A. (1965) A.B., Washington and Jefferson College; M.S., Pennsylvan Florida State University. 	
PATTERSON, EMILY H. (Mrs.) (1967)Ass B.S., Bowling Green State University; M.A., Ph.D., Univer-	ociate Professor of English
PAULIN, HARRY W. (1962) B.A., North Central College, Illinois; A.M., Ph.D., Universi	
PAYNE, WILLIAM H. (1970) Lecture B.S., Virginia Union University; M.A., New York University	er in Secondary Education
PEARSON, THOMAS R. (1968)Co B.S., U.S. Naval Academy; M.S., Purdue University.	ordinator of Financial Aid
PEHRSON, ROBERT B. (1969) Assistant Professo B.A., M.A., Ph.D., University of Utah.	or of Secondary Education
A.B., University of California, Los Angeles; M.A., Ph.D., Sta	s; Professor of Psychology anford University.
B.A., Grinnell College; M.A., State University of Iowa; Ed.I	Coordinator of Counseling D., Oregon State College.
A.B., A.M., Colorado State College; Ed.D., University of Ca	or of Information Systems lifornia, Los Angeles.
A.B., Ph.D., University of California.	Professor of Anthropology
A.B., M.A., San Diego State College; Ph.D., Carnegie Instit	Professor of Psychology ute of Technology.
A.B., Ph.D., Stanford University.	Professor of English
B.A., University of Washington; M.A., San Diego State Colle	Science, Imperial Valley

t On leave, year 1971-72.

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Faculty

PERSON, GERALD A. (1957)
PETERS, LYNN H. (1959)
PETERSON, GARY L. (1963)
PETERSON, TENOLD A. (1966) Assistant Professor of Art B.A., M.A., California State College, Long Beach.
PETRIE, ELIZABETH A. (1972)
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, GEORGE L. (1947)
PHILLIPS, JOHNNIE L. (1965) Assistant Education Resource Center Librarian B.A., Loyola University, New Orleans; M.A.L.S., University of Illinois
PHILLIPS, WILLIAM D. (1970)
† PHILLIPS, WILLIAM H. (1963) Professor of Physical Education A.B., M.A., Ed.D., University of California.
PHLEGER, CHARLES F. (1971)Lecturer in Physical Science M.A., San Diego State College.
† 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)
PILCHER, ANN HARPER (Mrs. D. M.) (1965)Associate Professor of Social Work
B.A., M.A., Oniversity of Videonautorian Professor of Social Work PILCHER, DONALD M. (1966)
B.S., Kalisas State Chiversity (1955) Professor of History
PINCETL, STANLET J., JR. (1960) B.A., M.A., Ph.D., University of California; Doctor of University, University of Paris (Sorbonne), France.
PISERCHIO, ROBERT J. (1966)
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)
PLYMALE, HARRY H. (1962) Associate Professor of Zoology B.S., D.V.M., Michigan State University.

+ On leave, spring 1971-72. 1 On leave, year 1971-72.

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Faculty	
POLICH, JOHN L. (1969)Assistant Professor of History, Imperial Valley B.S., Loyola University; M.S., M.A., University of Southern California; Ph.D., University of New Mexico.	T
POLLACK, DONALD (1968)	4
POPP, DEAN O. (1969) Assistant Professor of Economics B.A., Willamette University; M.S., Ph.D., Purdue University.	
POROY, IBRAHIM I. (1967)	
 POSNER, WALTER H. (1962)	J
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.	
OUQUET, JEAN (1970) Visiting Professor of Geography and History Licence, Master, Agregation, Ph.D., University of Paris.	
POWELL, DON W. (1953)	
OWERS, MICHAEL E., Captain, USAF (1969) Assistant Professor B.S., University of Puget Sound: B.S. Pennsylvania State University	
PRESTON, DAVID L. (1971)	
PRESTON, DUDLEY A. (1948)	1
PRICE, KARL F. (1970) Assistant Professor of Management B.S., Drexel Institute of Technlogy; Ph.D., University of Pennsylvania.	T
PRICE, QUENTON L. E. (1966) Associate Professor of Family Studies and Consumer Sciences	T
B.A., La Sierra College; M.A., California Western University; Ph.D., United States International University.	T
PRICHETT, GORDON D. (1970) Assistant Professor of Mathematics B.A., Williams College; M.A., Ph.D., University of Wisconsin.	T
ROUTY, HELEN L. (1950) Professor of Secondary Education B.S., University of Nebraska; M.A., Ph.D., University of California	T
RYDE, PHILIP R. (1969)	
SOMAS, THEMISTOCLES (1957)	1
TACEK, ANTON D. (1965)	
 DUASTLER, IMRE E. (1967)	T

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)
RAGEN, KATHERINE M. (1947)
RAO, M.V. RAMA (1957)
RASMUSSEN, AARON P. (1971)
RATTY, FRANK J. (1954)
RAY, EUGENE (1969) Assistant Professor of Art M.F.A., Tulane University.
RAY, ROBERT C. (1961)
RAYLE, DAVID L. (1970)
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)
REDDING, ROBERT W. (1966)
REHFUSS, DONALD E. (1962)
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)
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)
B.A., Omitensity of Assistant Professor of Education, Imperial Valley RICE, ERIC D. (1969)
RICHARDS, TERI L. (1970
RICHARDSON, ROBERT W. (1939, except 1946–48)Professor of Geography A.B., Ph.D., University of California.
PICHARDSON WILLIAM H. (1963) Protessor of Chemistry
B.S., University of California, Los Angeles; Ph.D., University of Illinois.

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RICHMAN, PAUL T. (1969)
RIDOUT, LIONEL U. (1946, except 1949–50)
RIEDMAN, RICHARD M. (1962) Professor of Speech Pathology and Audiology B.A., M.A., University of Redlands; Ph.D., University of Pittsburgh.
RIGGS, LESTER G. (1950, except 1951–52)
RINEHART, ROBERT R. (1964)
RING, MOREY A. (1962)
RIVAS, ANTHONY R. (1970)
RIXMAN, EUNICE E. (1960)
‡ ROBERTS, ELLIS E. (1949)
ROBERTSON, FRANK O. (1953)
ROBINSON, DUDLEY HUGH (1928)
ROBINSON, LAURIE R. (Mrs.) (1960)
ROBLEDO, GILBERT (1971) Assistant Professor of Mexican-American Studies B.A., University of California, Santa Barbara; M.A., San Diego State College.
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) Director, Imperial Valley Campus; A.B., M.A., San Diego State College: Ed D. University of Control Education
ROEDER, STEPHEN B. W. (1968)
ROEMMICH, HERMAN (1958)
ROGERS, JOHN J. (1963)
ROGERS, WILLIAM N., II (1968)
ROHFLEISCH, KRAMER J. (1947)
1 On leave, year 1971-72.

Faculty
ROHFLEISCH, MARJORIE C. (Mrs. K.) (1966)Assistant Professor of Music B.A., Pomona College; M.A., San Diego State College.
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)
ROSENSTEIN, LEON (1969) Lecturer in Philosophy A.B., Ph.D. candidate, Columbia University.
ROSS, JAMES E. (1969) Assistant 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.
ROST, NORMAN (1951)
ROTHER, JAMES (1969)
ROWLAND, MONROE K. (1960)Associate Professor of Elementary Education B.S., M.A., Ph.D., University of Michigan.
ROY, ELSIE L. (Mrs. O. A.) (1959) Assistant Catalog Librarian A.B., San Diego State College.
* RUETTEN, RICHARD T. (1960)
RUJA, HARRY (1947)
RUNNELS, MARY M. (1971) Assistant Professor of Family Studies and Consumer Sciences
B.S., M.H.E.Ed., Ph.D., Texas Woman's University.
RUSH, RICHARD R. (1971) Assistant Professor of English B.A., Gonzaga University; Ph.D., Uniersity of California, Los Angeles.
SALERNO, M. CONSTANCE (Mrs. V.) (1964) Associate Professor of Nursing B.S., M.S., University of San Diego, College for Women; M.S., University of California, Los Angeles.
SALTZ, DANIEL (1959)
SAMOVAR, LARRY A. (1963)Professor of Speech Communication B.A., Los Angeles State College; M.S., Ph.D., Purdue University.
SAMPLES, HOWELL GORDON, JR. (1950)
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. G.) (1968)
SANDERLIN, GEORGE W. (1955)
SANDERS, FREDERICK C. (1967) Assistant Professor of Speech Communication A.B., M.A., San Diego State College.

* On leave, fall 1971-72.

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Faculty

- SANTALO, JOAQUIN (1968) Assistant Professor of Spanish A.B., San Diego State College; M.A., Ph.D., University of Arizona.
- SANTANGELO, GENNARO A. (1967)Associate Professor of English B.S., Fordham College; M.A., Ph.D., University of North Carolina.
- SARDINAS, MARIA A. (1968) Assistant 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., New York University.
- SARFATT, ROBERTA F. (Mrs. J.) (1969) Assistant Professor of English B.A., Cornell University; Ph.D., University of California, San Diego.
- 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.
- SCHABER, STEVEN C. (1967) Associate Professor of German A.B., San Diego State College; 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.
- SCHECK, DENNIS C. (1968) Assistant Professor of Sociology B.A., MacMurray College; M.S., Ph.D., Purdue University.
- SCHIFF, MAURICE (1969) Lecturer in Speech Pathology and Audiology M.D., Boston University; M.Sc., University of Pennsylvania.
- SCHMIER, WALTER D. (1967)Assistant Professor of Business Law A.B., J.D., Wayne State University.
- SCHRUPP, MANFRED H. (1948) .. Dean, School of Education; Professor of Education B.S., M.Ed., Ph.D., University of Minnesota.
- SCHULTE, RICHARD H. (1965) Associate Professor of Psychology A.B., Michigan State University; M.A., Ph.D., University of Illinois.
- SCHULTZE, 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.
- SCHUNERT, JIM R. (1948) Professor of Secondary Education B.S., M.A., Ph.D., University of Minnesota.

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.
SCHUTZ, BARRY M. (1971)
SCOTT, FRANK L. (1947)
SEARGEANT, SALLIE (1968)
SEBOLD, FREDERICK D. (1969)
SEGADE, GUSTAV V. (1967) Assistant Professor of Spanish B A M A Ph D condidate University of Arizona
SELDER, DENNIS J. (1968)
SELF, WILLIAM M. (1970)
 B.A., University of Kansas, M.A., Th.D., University of Visconsin. SENDER, FLORENCE H. (Mrs.) (1964)
University. 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)
SHARKEY, GERALD K. (1956)
t SHARTS, CLAY M. (1962)
SHAW, LARRY J. (1968)
SHAW, PETER W. (1955)
SHELDON, JOHN M. (1962)
SHEPARD, DAVID C. (1956)
SHEPOSH, JOHN P. (1968)
SHERES, ITA G. (Mrs. D.) (1971)
SHERR, STEVEN D. (1969)

† On leave, spring 1971-72. † On leave, year 1971-72.

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Faculty
SHERRARD, WILLIAM R. (1968) Associate Professor of Management B.A., M.B.A., D.B.A., University of Washington.
SHIDELER, JAMES H., JR. (1966) Assistant Professor of Physical Science B.S., Oregon State College; M.S., University of Washington.
SHIELDS, ALLEN 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)
SHOJAI, DONALD A. (1971)
SHORT, DONALD R., JR. (1969) Assistant Professor of Mathematics B.A., University of California, Los Angeles; Ph.D., Oregon State University.
SHULL, CHARLES M., JR. (1969)
SHUTLER, MARY E. (Mrs. R.) (1967)
SHUTT, JERRY L. (1970)Assistant Professor of Finance B.S., Indiana University; M.A.S., University of Michigan; D.B.A. candidate, Indiana University.
SHUTTS, WILLIAM H. (1958)
SIMPSON, DOROTHY V. (Mrs.) (1970) Activities Adviser A.B., Talladega College.
SINGER, ARTHUR, JR. (1959)
SKAAR, DONALD L. (1960)Associate Professor of Electrical and Electronic Engineering B.E.E., University of Minnesota; M.S., Oregon State University. Registered Professional Engineer.
SKOLIL, LESTER L. (1951)
SLOAN, WILLIAM C. (1961) Professor of Biology B.S., M.S., Ph.D., University of Florida.
SMITH, ALAN C. (1963) Associate 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)
SMITH, CHARLES R. (1969)
SMITH, CRAIG R. (1969) Assistant Professor of Speech Communication B.A., University of California, Santa Barbara; M.A., City University of New York, Queens College; Ph.D., Pennsylvania State University.
SMITH, DONALD B. (1971) Assistant Professor of English, Imperial Valley B.A., M.A., San Diego State College; Ph.D., University of New Mexico.
SMITH, HAYDEN R. (1957)

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SMITH, JANE K. (Mrs. R.D.) (1968, except 1970)Assistant to Associate Dean, Curriculum
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, JIMMIE B. (1968) Professor of Music B.A., B.S., Rice University; M.A., Ph.D., University of Arizona.
SMITH, JOHN R. (1957) Associate Professor of Psychology B.A., Occidental College; M.A., Ph.D., University of California, Los Angeles.
SMITH, LARRY E. (1969)
SMITH, LOUIS E., JR. (1946) Professor of Physics A.B., San Diego State College; Ph.D., University of Washington.
SMITH, NEWTON B. (1954) Professor of Mathematics B A. Reed College: M.A., Oregon State College; Ph.D., Iowa State College.
SMITH, RAY T., JR. (1964)
SMITH, ROBERT D., JR. (1963)
SNIDER, MERVIN S. (1953)
SNODGRASS, HERSCHEL R. (1967)
SNUDDEN, LESLIE W. (1959)
SNYDER, WILLIAM S. (1960)
SOLBUE, GARY A. (1964)
SOLDNER, HELMUT K. (1969)
SOMERVILLE, ROSE M. (Mrs. J.) (1967) Associate 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)
SOPER, JOANN P. (Mrs.) (1968)
SORENSEN, GEORGE W. (1967) Associate Professor of Journalism A.B., Antioch College, Ohio; M.S., Boston University; Ph.D., University of Iowa.
SORENSON, CAROL L. (Mrs. R. E.) (1971) Lecturer in Family Studies and Consumer Sciences
B.S., Stout State University; M.A., University of Northern Colorado.
SORENSON, GEORGE N. (1946)

SORENSON, RICHARD E. (1971)Assistant Professor of Industrial Arts B.S., M.S., Stout State University.

- 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.
- SPANGLER, JOHN A. (1946) Professor of Chemistry A.B., Ph.D., West Virginia University.
- SPAULDING, WILLIAM E., JR. (1970) Assistant 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. candidate, University of Iowa.
- SPONSELLER, DORIS M. (1965) Assistant Professor of Information Systems B.S., Ohio University; M.A., New York 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.
- STANIFORD, PHILIP S. (1967)..... Assistant Professor of Anthropology B.A., University of California, Santa Barbara; M.A., University of Hawaii; Ph.D., London School of Economics and Political Science.
- STAUTLAND, SIGURD (1966) Associate Professor of Secondary Education B.Fag., University of Oslo, Norway; M.A., College 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 College; Ed.D., University of California, Los Angeles.
- 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.
- STEPHENSON, JOHN S., III (1969) Assistant Professor of Sociology B.A., Boston University; M.A., University of Denver; Ph.D. candidate, Ohio State University.

f On leave, spring 1971-72. § Assigned duty in Brazil, 1971-72.

	Faculty
STEVENS, WALTER R. (1956) A.B., Park College; M.A., Ph.D., Michigan State U	Professor of Psychology niversity.
STEWART, CHARLES J. (1955)	
STEWART, DOUGLAS B. (1971) B.S., University of Portland; M.S., Ph.D., Universit	Visiting Lecturer in Economics y of Oregon.
STIEHL, HARRY C. (1969) B.A., University of Texas; M.A., University of Calif	Assistant Professor of English fornia; Ph.D., University of Texas.
STITES, FRANCIS N. (1968) B.A., Marian College; M.A., Ph.D., Indiana Univer-	Associate Professor of History sity.
STONE, SANFORD H. (1956) B.S.E., M.S.E., University of Michigan; M.S., Universional Civil Engineer.	Professor of Civil Engineering ersity of Illinois. Registered Profes-
STOUGH, MORROW F. (1950, except 1966–71) F A.B., Wittenberg University; M.A., University of I California.	Professor of Elementary Education Pennsylvania; Ph.D., University of
STRAND, MARGUERITE R. (Mrs. R. L.) (1955)	Counselor; Professor of Secondary Education
A.B., M.A., Florida State University; Ph.D., Univer-	sity of Washington.
STRATTON, FRANK E. (1966) Associ B.S., San Diego State College; M.S., Ph.D., Stanford neer.	ate Professor of Civil Engineering University. Registered Civil Engi-
STRAUB, LURA LYNN (1948) A.B., Jamestown College; M.C.S., Indiana University sities of Wyoming, Denver and Colorado.	Professor of Information Systems ; additional graduate study, Univer-
STROM, DAVID W. (1968)Associate P B.A., M.A., Ed.D., Wayne State University.	Professor of Elementary Education
STRONG, DOUGLAS H. (1964) B.A., M.A., University of California; Ph.D., Syracus	e University.
STUART, ROBERT J. (1969) As	ssistant Professor of Electrical and Electronic Engineering
B.S., Massachusetts Institute of Technology; M.S., P Angeles.	h.D., University of California, Los
† STUMPF, JACK E. A. (1965) B.S., George Williams College, Chicago; M.S.W., U Ph.D., Brandeis University.	University of Southern California;
STUTZ, FREDERICK P. (1970) B.A., Valparaiso University; M.S., Northwestern University.	. Assistant Professor of Geography versity; Ph.D., Michigan State Uni-
SUCEC, ANTHONY A. (1967) Associat A.B., M.A., San Diego State College; Ed.D., Univer	te Professor of Physical Education sity of California.
SULLIVAN, EDWARD D. S. (1967) B.A. University of Santa Clara; M.A., Ph.D., University	Assistant Professor of English rsity of California, Santa Barbara.
SUMMERFIELD, JOHN D. (1970) Educa B F A. M.A., University of Texas.	tional Television Station Manager
t SUTHERLAND, JON N. (1967)	Associate Professor of History California, Los Angeles.
SWANSON, ROBERT W. (1968) B.S., Columbia University.	Manager, ADP Services

† On leave, spring 1971-72. † On leave, year 1971-72.

SWIFT, C. SHUFORD (1968)
SWIGGETT, IFAN D (1946)
A.B., San Diego State College; M.F.A., University of Southern California; additional graduate study at Claremont College.
SZABO, ANDREW (1955)
M.S. in L.S., Drexel Institute of Technology; Ph.D., University of Pecs, Hungary.
 B.A., University of London; M.A., Ph.D. candidate, State University of New York at Binghamton.
* TALAMANTES, FLORENCE I. (1962)
TALBERT, FREDDIE D. (1968) Assistant Professor of Astronomy B.A., Ph.D., University of Texas.
LL.B., Tokyo University; B.A., M.A., Ph.D., University of California, Los Angeles,
TANZER, JOANN L. (Mrs. J. L.) (1956)
A.B., Reed College, Oregon; Ph.D., University of Washington.
A.B., Northwestern State College; M.A., Ph.D., Louisiana State University
A.B., M.A., Ph.D., University of California, Los Angeles.
A.B., Ph.D., University of California, Los Angeles.
I TEBOR, IRVING B. (1957)
TEMPLETON, GENE A. (1970)
TEMPLIN, JACQUES D. (1962)
TERRELL, LOUIS M. (1969)
 TERRY, WILLIAM L. (1946)
THIEL, DONALD W. (1957)
THILE, EDMUND L. (1967) Associate Professor of Speech Pathology and Audiology A.B., San Diego State College; M.A., Ph.D., University of Southern California
THOMAS, ALICE E. (Mrs. H.) (1955)
B.S., Bethany College, Kansas; M.A., Columbia University; additional graduate study at Universities of California and Washington.
* On leave, fall 1971-72. † On leave, spring 1971-72. † On leave, year 1971-72.

Faculty

THOMAS, BLAKEMORE E. (1956)
THOMPSON, GORDON M. (1969)Assistant Professor of Counselor Education B.A., Muskingum College; B.D., Pittsburgh Theological Seminary; M.A., San Diego State College; Ph.D. candidate, Arizona State University.
THOMPSON, WILLIS H., JR. (1967) Assistant Professor of Physical Science B.S., B.A., Stanford University; M.A., San Jose State College.
THRANE, JAMES R. (1966)
THREET, RICHARD L. (1961)
THWAITES, WILLIAM M. (1965)
TIDWELL, JAMES N. (1947)
TILARO, MARIO (1968) Assistant Professor of Information Systems B.S., University of Akron; M.S., San Diego State College.
TIMIN, MITCHELL E. (1969)
TOLLEFSEN, DOROTHY J. (1946) Professor of Physical Education A.B., M.A., University of California.
TOSSAS DE IRIZARRY, LEILA V. (1961) Professor of Elementary Education B.S., M.A., Ed.D., Teachers College, Columbia University.
TOTMAN, JANE M. (Mrs.) (1970)
TOZER, LOWELL (1954)
TREADWAY, GERALD H., JR. (1970) Assistant Professor of Elementary Education A.B., M.A., San Diego State College; Ed.D., University of Arizona.
TRIMMER, RUSSELL L. (1955)
TROXELL, EUGENE A. (1966) Assistant Professor of Philosophy A.B., Gonzaga 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.
TURNER, MERLE B. (1950)
UGARTE, MARIO M. (1971) Assistant Professor of Spanish, Imperial Valley B.A., M.A., California State College, Los Angeles; Ph.D., University of Southern Cali- fornia.
URISTA, ALBERTO H. (1970) Director of Centro de Estudios Chicanos; Instructor in Mexican-American Studies
A.B., San Diego State College.
VAN BEEK, JOHANNES L. (1970)

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. Vice President for Academic Affairs;

... Assistant to the President

Professor of Art

Professor of Spanish

Associate Professor of

Elementary Education

and Urban Studies

Professor of English

. Assistant Professor of English

Professor of Sociology and Public Administration

Faculty

	VANDENBERG, PIETER A. (1969)Assistant Professor of Finance B.S., California State Polytechnic College, Kellogg-Voorhies; M.B.A., D.B.A., University of Southern California.
	VANDERBILT, KERMIT (1962)
	VANDERWOOD, PAUL J. (1969) Assistant Professor of History B.A., Bethany College; M.A., Memphis State University; Ph.D., University of Texas.
A lot all and	VAN DE WETERING, R. LEE (1960)
	VANIER, DINOO T. (Mrs. D. K.) (1970) Assistant Professor of Marketing B.Com., Sydenham College of Commerce & Economics, Bombay; M.B.A., M.A., Ph.D., University of California.
	VARTANIAN, PERSHING (1968)
	VASQUEZ, CARLOS L. (1971) Assistant Professor of Mexican-American Studies B.A., University of California, Los Angeles; M.A., Stanford University.
	VENIERIS, JOHN P. (1967)
	VERDERBER, ANNE (1971)
	VERGANI, GIANANGELO (1963)
	VERGANI, LUISA (Mrs. G.) (1969) Assistant Professor of Italian Dottorato in Lettere, University of Milan.
	VEZIS, TIM T. (1970)
	VILLARINO, JOE R. (1969) Assistant Professor of Mexican-American Studies B.S., M.A., Northern Arizona University.
	VILLONE, ARNOLD L. (1968)
	VINTON, ROBERT C. (1969)
	VOLZ, ELAINE C. (Mrs.) (1951)
	‡ WADE, KENNETH S. (1964)
	WADSWORTH, EARL P., JR. (1956)

..... Assistant Professor of Anthropology

Professor of Chemistry

Professor of Microbiology

WANLASS, DOROTHY C. (1955) 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 College; Ed.D., University of California, Los Angeles. Professor of Music WARD-STEINMAN, DAVID (1961) B.M., Florida State University; M.M., D.M.A., University of Illinois. Dean of Activities; WARMER, MARGERY ANN (Mrs. J. C.) (1956) ... Professor of Family Studies and Consumer Sciences A.B., M.S., and additional graduate study at the University of Southern California. WARNER, BRADFORD B. (1967) Educational Television Station Program Director B.S., Kent State University. ... Lecturer in Nursing WARNOCK, Florence N. (Mrs. B. B.) (1971) B.S., Wayne State University; M.A., University of Michigan. * WARREN, EDWARD W. (1963) Professor of Philosophy and Classical Languages B.A., Stanford University; Ph.D., Johns Hopkins University. Dean of Admissions and Records WARREN, E. JUNE (Mrs.) (1957) ... B.S., Northern State Teachers College, South Dakota; M.A., San Diego State College; doctoral candidate, University of California, Los Angeles. Professor of Mathematics WARREN, LEROY J. (1955) ... B.A., College of Idaho; M.A., Ph.D., University of Oregon. WATSON, CATHERINE M. (Mrs.) (1970) Assistant Professor of Social Work B.S., Temple University; M.S.W., University of Michigan. Assistant Professor of Social Work WATSON, ELIZABETH V. (1968) B.A., Scripps College; M.S., University of Southern California. ... Associate Professor of Anthropology + WATSON, LAWRENCE C. (1967) B.A., University of California, Los Angeles; M.A., University of Southern California; Ph.D., University of California, Los Angeles.

A.B., M.Th., University of Southern California; Ph.D., Stanford University.

B.A., University of Michigan; Ph.D., Stanford University.

WALSH, M. AGNES (Mrs. W. E.) (1955)

B.A., M.A., Stanford University; D.Litt., University of Geneva.

B.Ed., University of California, Los Angeles; graduate study, New York University and

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

B.A., University of Nevada; M.A., Mexico City College; Ph.D., University of Illinois.

B.S., Northwestern University; M.A., Teachers College, Columbia University. WALSHOK, MARCO G. (1969)Assistant Professor of Public Administration

B.A., University of Southern California; doctoral candidate, Indiana University.

* On leave, fall 1971-72. † On leave, spring 1971-72.

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WALKER, DONALD E. (1968)

WALKER, LLOYD A. (1965)

San Diego State College.

WALLACE, ROBERT D. (1957) ...

WALL, CAREY G. (1971)

State University.

WALSH, JAMES L. (1962) ...

1 On leave, year 1971-72.

WAGNER, RICHARD V. (1969) ...

WALBA, HAROLD (1949)

WALCH, HENRY A., JR. (1955)

B.A., M.A., Ph.D., University of California.

B.A., Ph.D., University of California, Los Angeles.

B.S., Massachusetts State College; Ph.D., University of California.

t WEBB, C. R., JR. (1949, except 1964–66) Professor of History A.B., M.A., University of California; M.A., Ph.D., Harvard University.
WEBB, EDWARD M. JR. (1964) Director of Placement, Career Planning, and Financial Aids
A.B., M.S., San Diego State College; Ph.D., United States International University.
WEBER, DAVID J. (1967)
WEDBERG, HALE L. (1959)
 WEETER, RAYMOND D. (1966)
WEINBERGER, PAUL E. (1968)
WEINER, RICHARD (1970)
WEIR, MARY J. (1970)Assistant Professor of Educational Technology
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)
WELLS, RICHARD W. (1961) Associate Professor of Physical Education A.B., Occidental College; M.A., San Diego State College.
WENDLING, AUBREY (1954)
WERNER, JOAN T. (Mrs. R.) (1965) Assistant Professor of Sociology B.S., State College, Pennsylvania; M.E., Pennsylvania State University; Ph.D., Syracuse University.
WESTERVELT, WILLIAM O. (1964)
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. candidate, 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) Assistant Professor of Mathematics B.A., M.S., Emory University; Ph.D., University of California, Riverside.
WHITNEY, DANIEL D. (1966) Associate Professor of Anthropology B.A., M.A., Ph.D., Michigan State University.
WHITNEY, FREDERICK C. (1970)
1 On leave, year 1971-72.

Faculty
WICK, ARNE N. (1958) Professor of Chemistry B.S., M.S., Ph.D., University of Minnesota.
WIDMER, KINGSLEY (1956)
WIJNHOLDS, HEIKO W. J. (1967)
WILCOX, ROBERT F. (1950) Professor of Public Administration and Urban Studies A.B., M.A., Stanford University; M.A., Columbia University; Ph.D., Stanford 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 Mathmatics A.B., Harris Teachers College; M.A., Ph.D., St. Louis University.
WILLIAMSON, GLORIA R. (Mrs. C.) (1961) Assistant Professor of Physical Education
A.B., M.A., Los Angeles State College. WILLIAMSON, JAMES E. (1968)
WILLIAMSON, NANCEE B. (1969)
WILLIS, GEORGE C. (1967) Assistant Professor of Physical Education B.A., M.A., California State College, Los Angeles.
WILSON, GALEN (1969)
VILSON, WILFRED J. (1963)
VINDSOR, HENRY H., III (1968) Assistant Professor of Spanish B.A., M.A., Arizona State University; Ph.D. candidate, University of Arizona.
VINSLOW, ROBERT W. (1965)
VOLF, ERNEST M. (1947)
VOLF, FRED A. (1964)
VOLTER, GERHARD H. (1957)
VOO, YI-YU CHO (Mrs. P.C.) (1970) Assistant Professor of Classical and Oriental Languages
A.B., San Diego State College.
VOODLE, 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.

t On leave, year 1971-72.

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WOTRUBA, THOMAS R. (1962) Professor of Marketing B.B.A., M.B.A., Ph.D., University of Wisconsin. WRIGHT, RICHARD D. (1964) Associate Professor of Geography A.B., A.M., Indiana University; Ph.D., University of Kansas. WULBERN, JULIAN H. (1966) ... Associate Professor of German A.B., University of California; M.A., University of Colorado; Ph.D., Northwestern University. WYLIE, DONALD G. (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. YARBOROUGH, JOHN M. (1959) ... B.S., Texas Agricultural and Mechanical College; M.A., Ed.D., Stanford University. Director of Housing YAREMKO, ROBERT M. (1969) Assistant 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 College; M.A., California State College, Long Beach; additional graduate study, University of Southern California. YESSELMAN, CHARLOTTE B. (Mrs. M.) (1967) Associate Professor of B.A., Hunter College; M.S., New York University; Ph.D., University of New Mexico. Secondary Education YOUNG, ARTHUR (1967) B.S., Allegheny College; M.A., Ph.D., Indiana University, ...Associate Professor of Astronomy YOUNG, JOHN A. (1970) Assistant Professor of Anthropology B.A., Macalester College; M.A., (Philosophy), University of Hawaii; M.A., (Anthropology), Ph.D., Stanford University. YOUNG, RONALD R. (1971) Assistant Professor of Spanish and Portuguese A.B., Wisconsin State University; A.M., Ph.D. candidate, University of Illinois. YUN, CHANG SIK (1972) Assistant Professor of Classical B.A., M.A., University of Michigan; Ph.D., Princeton. and Oriental Languages ZAK, R. BETTY (1969) B.A., Immaculate Heart College; M.D., Woman's Medical College of Pennsylvania. Physician ZAMPESE, ERNEST E. (1967) Assistant Professor of Athletics; Coach, Football B.S., M.A., California State Polytechnic College, San Luis Obispo. ZEDLER, PAUL H. (1969) B.S., University of Wisconsin, Milwaukee; M.S., Ph.D., University of Wisconsin, Madi-ZIEGENFUSS, GEORGE (1948)

B.A., University of Washington; M.A., Ed.D., Teachers College, Columbia University.

San Diego State Foundation— Appointments Under Grants From Outside Funds

BREWER, JACK L. (1967) A.B., M.S.W., San Diego State College.	Lecturer in Social Work
KUKKONEN, RUTH M. (1966) B.A., Wayne State University; M.S.W., University of Michi	Lecturer in Social Work gan.
SCHRIFFRIN, MARK (1967) B.S., New York University; M.S.W., University of Californi	Lecturer in Social Work ia, Los Angeles.
SHENKO, BARBARA E. (Mrs.) (1966) B.A., University of Chicago; M.S.S., Smith College, Mass.	Lecturer in Social Work
TRESKE, PAUL S. (1969) B.A., M.S.W., University of Connecticut.	Lecturer in Social Work

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Faculty

Emeritus Faculty

MALCOLM A. LOVE, Ph.D., President;	
Professor of Public Administration and Urban Studies	1952–1971
WALTER R. HEPNER, Ed.D., President	1935–1952
JOHN W. ACKLEY, Ph.D., Professor of Speech Communication	n 1947–1971
JOHN R. ADAMS, Ph.D., Chairman, Division of Humanities; Professor of English	1928-1968
MARVIN D. ALCORN, Ed.D., Professor of Secondary Education	n 1941–1969
JULIA G. ANDREWS, M.A., Associate Professor of Art	1947-1957
JOE A. APPLE, Ed.D., Professor of Secondary Education	1947-1972
GUINIVERE K. BACON, M.A., Associate Professor of	
Elementary Education	1928–1969
KENNETH E. BARNHART, Ph.D., Professor of Sociology	1939–1964
BAYLOR BROOKS, B.A., Professor of Geology	1931–1966
ELIZABETH M. BROWN, Ph.D., Professor of French	1926-1968
EUGENE P. BROWN, M.A., Professor of Accounting	1947-1966
LESLIE P. BROWN, Ph.D., Professor of Spanish and French	1922–1959
GAIL A. BURNETT, Ph.D., Professor of English and Classics	1947-1968
HILDING B. CARLSON, Ph.D., Professor of Psychology	1948–1969
NORITA N. COMIN, M.A., Associate Professor of Home	Contraction of
Economics	1949-1963
HELEN S. CLARK, B.A., Assistant Professor of Mathematics	1952–1967
KATHERINE E. CORBETT, M.A., Associate Professor of	1001 1056
LOBENZ E doll'U IEN M P.A. Lostera in M. L.	1921-1950
FLORENCE & DICKHALT MA D.C. K. Lecturer in Marketing	1949-1907
APTHUR T EMERSON BS Arith i D S	1917–1952
Mathematics	1052_1964
WALTER B. FORD, B.E. Assistant Professor of Industrial	1302-1304
Arts	1953-1963
LULA E. GERMANN, B.S., Supervising Librarian	1925-1956
E. DANA GIBSON, Ph.D., Professor of Information Systems	1947-1971
SIDNEY L. GULICK, Ph.D., Dean of Arts and Sciences:	
Professor of English	1945-1969
EDITH C. HAMMACK, B.A., Associate Professor of Education	1911-1950
ISABELLA S. HAMMACK, M.A., Associate Professor of	
Education	1936–1957
DOROTHY R. HARVEY, M.A., Assistant Professor of Botany	1924–1961
ROBERT D. HARWOOD, Ph.D., Professor of Zoology	1928-1969
HARRIET HASKELL, Ph.D., Professor of English1940-1971 (exc	ept 1943-45)
GERALDINE K. HAYNES, B.S.L.S., Supervising Librarian	1931-1961

Faculty CHARLES M. HUFFER, Ph.D., Professor of Astronomy1961-1968

JAMES J. HUNTER, JR., Ph.D., Professor of Secondary Education	.1946-1971
EVERETT GEE JACKSON, M.A., Professor of Art	.1930-1963
FRANK L. IOHNSON, Ph.D., Professor of English	.1939-1966
LIONEL JOSEPH, Ph.D., Professor of Chemistry	.1947-1971
IOSEPH S. KEENEY, Ph.D., Professor of English	.1933-1963
CHESTER B. KENNEDY, Ph.D., Professor of English	.1937-1969
WILLIAM M. KIDWELL, Ed.D., Director of Placement	
and Financial Aid; Professor of Psychology	.1949–1970
JAMES S. KINDER, Ph.D., Professor of Education	.1953-1966
ANGELA M. KITZINGER, Ph.D., Professor of Health Education	1945-1969
DONALD B. LEIFFER, Ph.D., Professor of Political Science	.1948-1971
JAMES M. LINLEY, Ph.D., Professor of Secondary Education	.1945-1970
LAWRENCE W. LUCE, Ed.D., Professor of Industrial Arts	1949-1969
RICHARD MADDEN, Ph.D., Professor of Education	ACCULTOR OF
(except 1961-64)	1939-1966
ERNEST L. MARCHAND, Ph.D., Professor of English	1946-1968
IVAN N. McCOLLOM, Ed.D., Professor of Psychology	1946-1970
MARY MENDENHALL, Ph.D., Professor of Philosophy	1939-1963
VINNIE C. MOLITOR, A.B., Associate Professor of Geography	1914-1938
MABEL A. MYERS, Ph.D., Professor of Microbiology	1946-1970
NEVA E. NYE, M.Litt., Professor of Nursing	1953-1970
PAUL L. PFAFF, Ph.D., Professor of Speech Pathology	1931-1971
LAUREN C POST Ph D Professor of Geography	1937-1969
E VINCSI EV POVENMIRE M.F.A., Professor of Drama	1946-1971
SPENCER I BOCERS Ph D. Professor of Anthropology	1930-1971
POPERT D. ROWE Ph D. Professor of Chemistry	1946-1971
ROBERT D. ROWE, Th.D., Tropessor of Art	1934-1967
EDEDERICK I RVAN Ph D Professor of Economics	1946-1965
FREDERICK L. MINH, THE, Education and Curriculum	
Materials Librarian	1950-1968
MARION L. SCHWOB, M.S., Associate Professor of	1024 1060
Physical Education	1934-1900
HUNTON D. SELLMAN, M.S., Professor of Drama	1940-1971
FLORENCE S. SHANNON, M.S., Associate Professor of	1933-1963
Physical Education	1946-1972
CLAUDE F. SHOUSE, Ph.D., Professor of Astronomy	1937-1969
CLIFFORD E. SMITH, Ph.D., Professor of Astronomy	1939-1970
DEANE F. SMITH, M.Mus., Associate Professor of Music	1922-1948
I FU A D. SMITH, M.A., Protessor of Music	NOTES STORES

CHARLES C. SPORTSMAN, M.S., Associate Professor of	
CUBROTINE CORDUCTION	1947-1968
CHRISTINE SPRINGSTON, M.A., Professor of Music	1930-196
HARRY C. STEINMETZ, Ph.D., Associate Professor of Psychology	gy1930-1954
HAMILTON L. STONE, B.S., Associate Professor of	
Mechanical Engineering	
ALVENA S. STORM, M.A., Professor of Geography	
RUTH A. TALBOY, M.A., Associate Professor of Home	
Economics	1947-1963
JOHN A. TERHUNE, M.S., Assistant Professor of Physics	1947-1965
JOHN R. THEOBALD, Ph.D., Professor of English	1946_1960
FRANCES B. TORBERT, M.A., Professor of Management	1027 1060
WOLCOTT C. TREAT, Ph.D. Professor of Psychology	1937-1909
VIRGINIA W. VOEKS Ph D. Professor of Brach J	1950-1960
HILDE K. WALKER MA Assistant D. C.	1949–1971
CURTIS B WALLING FF D. C.	1931–1951
Electronic Engineering	SPIRE REPORT
DONALD B WATSON FAD W	1931–1969
Affairs; Professor of Physical Science	
ALFRED E WHITE Ed D Arith the D	1939–1968
Professor of Education	
ARTHUR C. WIMER MA Professor CI	1946–1964
ERNEST F WITTE PLD D. C.	1950–1971
Dean of the School of Social Work;	
WILLIAM H WRICHT PLD P C	1963-1969
rotessor of Accounting	1921-1962

Lecturers (Part Time)

Faculty

Corona, Bert N., Mexican-American Stud-Abrams, Alvin J., Ph.D., Psychology Aiken, Edwin G., Ph.D., Psychology Aikens, Inez M. (Mrs.), A.M., Social Work Aldrich, Charlotte B., B. Mus., Music Safety Allen, James W., A.B., Information Systems Anderson, Bettye V., B.A., Music (Afro-American) Anderson, Donald E., M.A., Information tion Systems Anderson, Gayle F., J.D., Accounting Andriola, Joseph, Ph.D., Social Work Applegate, Robert M., B.S.C.E., Public Administration & Urban Studies English Atwood, Marjie H., Ph.D., Imperial Valley Barnes, Richard R., M.S., Journalism Barnier, Barbara E., A.B., Elementary Education Barrons, John C., Ed.D., Information Syscation Bartlett, Gloria J., M.S., Counseling Bartlett, Grant R., Ph.D., Chemistry Basart, Paul E.R., M.B.A., Accounting Beale, Patrice K., Juilliard Graduate School of Music, Music Bearden, Margaret F., M.A., History Berry, Sylvia, M.A., Elementary Education ing Bitar, Joseph N., M.A., Classical & Oriental Languages Bledsoe, Martha T., A.B., Special Educa-Bogner, Delmar, A.M., Secondary Educa-Boyer, John L., M.D., Physical Education Bray, Nancy J., A.B., Mathematics Studies Brereton, Thomas B., M.S., Information Systems Briscoe, Lonnie L., A.B., English (Afrotion American) Brooks, Richard D., B.S., Marketing tion Brown, Richard H., M.A., Sociology Bryant, Cedric G., English (Afro-Americation Bryson, Rebecca B., Ph.D., Psychology Bunch, Philip B., M.S.A.E., Civil Engineer-Cantrell, Robert W., M.D., Speech Pathology & Audiology Cassen, Balfour B., Ph.D., History Charters, Nancy I., M.A., Speech Pathology & Audiology Clayton, Thomas E., M.A., Telecommunications & Film Clothier, Donald C., Jr., M.S., Marketing Cole, Gloria G., B.A., Anthropology Collins, Henry, Mexican-American Studies

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