

SAN DIEGO
STATE
UNIVERSITY
GRADUATE
DIVISION
CATALOG
1977-78

THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

CATALOG

**ANNOUNCEMENT
OF THE
GRADUATE DIVISION**

1977-1978

Preparation of the Graduate Catalog, completed in January of each year, is under the direction of Jane K. Smith, Curriculum Assistant to the Vice President for Academic Affairs. Catalog cover by Jerry Elliott. The Catalog may be purchased, starting in May of each year, at the Aztec Shops on campus for \$1.05 plus 6% sales tax. To order by mail, send \$1.50 directly to the Aztec Shops, San Diego State University, 5300 Campanile Drive, San Diego CA 92182.

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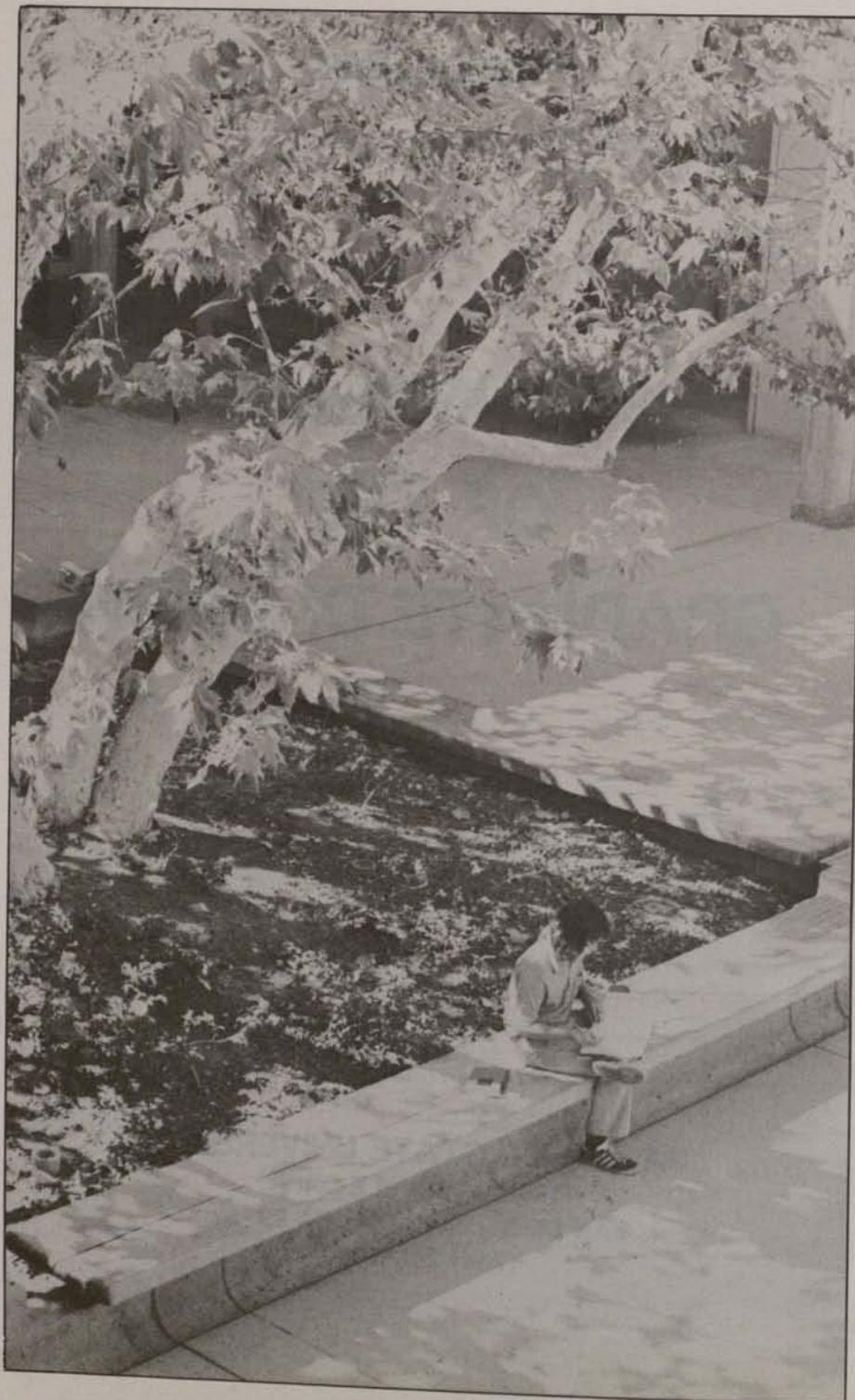


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1977-1978**Academic Calendar****1977 Summer Sessions**

May 31	Earliest date to apply for graduation in the summer session.
May 31-June 17	Term I summer session (3 weeks).
June 11	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
June 20-July 29	Term II summer session (6 weeks).
June 25	Graduate School Foreign Language Test, by appointment five weeks in advance, Test Office.
July 4	Holiday—Independence Day.
July 8	Last day to apply for summer graduation with an advanced degree, Graduate Division Office.
July 23	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
August 1	Final day for submitting theses to the Thesis Review Service, Love Library.
August 1-19	Term III summer session (3 weeks).
August 19	Final day for depositing completed approved theses at Aztec Shops for processing for summer graduation. Also last day for removing incompletes and for reporting results on comprehensive examinations to the Graduate Division Office by department or school.
August 20	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.

Fall Semester

August 1-31	Applications for admission or readmission to San Diego State University for the spring semester 1978. Accepted after this date only until enrollment quotas are met.
August 15-26	Testing, advising and registration.
August 22	Opening date of the academic year.
August 29	First day of classes. Also the earliest date to apply for graduation this semester.
September 5	Holiday—Labor Day.
September 10	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
September 12	Last day to apply for refunds.
September 26	Last day to withdraw from class or change program.
September 30	Last day to apply for mid-year graduation with an advanced degree, Graduate Division Office.
October 8	Graduate School Foreign Language Test, by appointment five weeks in advance, Test Office.
October 15	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
November 1-30	Application for admission or readmission to San Diego State University for the fall semester 1978. Accepted after this date only until enrollment quotas are met.
November 8	Graduate Record Examination Aptitude Test for master's degree applicants, 6:15-10:00 p.m., by appointment five weeks in advance, Test Office.
November 24-27	Thanksgiving Recess.
December 2	Final day for submitting theses to the Thesis Review Service, Love Library.

December 10	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
December 12	Last day of classes before final examinations.
December 14-21	Final examinations.
December 21	Final day for depositing completed approved theses at Aztec Shops for processing for mid-year graduation. Also last day for removing incompletes and for reporting results on comprehensive examinations to the Graduate Division Office by department or school.
December 22	Winter recess begins.
December 28	Grades due.
December 29	Last day of fall semester.

Spring Semester

January 9-20	Testing, advising and registration.
January 14	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
January 16	First day of spring semester.
January 23	First day of classes. Also the earliest date to apply for graduation this semester.
February 4	Graduate School Foreign Language Test, by appointment five weeks in advance, Test Office.
February 6	Last day to apply for refunds.
February 17	Last day to withdraw from class or change program.
February 24	Holiday—Washington's Birthday.
February 27	Last day to apply for May graduation with an advanced degree, Graduate Division Office.
March 2	Graduate Record Examination Aptitude Test for master's degree applicants, 6:15-10:00 p.m., by appointment five weeks in advance, Test Office.
March 17	Last day of classes before spring recess.
March 20-26	Spring Recess.
March 27	Classes resume.
April 8	Graduate School Foreign Language Test, by appointment five weeks in advance, Test Office.
April 22	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
May 1	Final day for submitting theses to the Thesis Review Service, Love Library, for processing for May graduation.
May 11	Last day of classes before final examinations.
May 12	Study and Consultation Day.
May 13-20	Final examinations.
May 21	Commencement.
May 22	Final day for depositing completed approved theses at Aztec Shops for processing for May graduation. Also final day for removing incompletes and for reporting results on comprehensive examinations to the Graduate Division Office by department or school.
May 24	Grades due.
May 26	Last day of spring semester.
May 29	Holiday—Memorial Day.

1978 Summer Session

May 30	Earliest date to apply for graduation in the summer session.
May 30-June 16	Term I summer session (3 weeks).

June 10	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
June 19-July 28	Term II summer session (6 weeks).
June 24	Graduate School Foreign Language Test, by appointment five weeks in advance, Test Office.
June 30	Last day to apply for summer graduation with an advanced degree, Graduate Division Office.
July 4	Holiday—Independence Day.
July 22	Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment five weeks in advance, Test Office.
July 28	Final day for submitting theses to the Thesis Review Service, Love Library.
July 31-August 18	Term III summer session (3 weeks).
August 18	Final day for depositing completed approved theses at Aztec Shops for processing for summer graduation. Also last day for removing incompletes and for reporting results on comprehensive examinations to the Graduate Division Office by department or school.



number of days of instruction which have elapsed before application for refund is made, and the degree to which the campus has provided the services for which the fee has been charged. Details concerning the fees which may be refunded, the circumstances under which fees may be refunded, and the appropriate procedure to be followed in seeking a refund may be obtained from the Controller's Office, A.D. 3rd floor.

Refund of Fees

To be eligible for a refund of a student services fees, a student withdrawing from the university must obtain a withdrawal card from the Registrar's Office and file a refund application with the Cashier's Office, CL-108, not later than 14 days following the day the academic term begins. All but \$10.00 will be refunded. A student dropping from more than six units to six units or less must file an application with the Cashier's Office not later than 14 days following the day the academic term begins. The amount of \$5.00 shall be retained. For additional information contact the Cashier's Office or telephone 286-5253.

Nonresident and Foreign Student Tuition

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

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

Parking fee

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

Nonreserved space per semester:

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

For a refund, the parking sticker must be removed from the vehicle by a University Police Officer. The refund application is obtained from the Cashier's Office, CLS-108.

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

SUMMER SESSION FEES

Tuition, each session	(per unit) \$35.00
Activity Fee:	
Term I	1.00
Term II	2.00
Term III	1.00
Student Union Fee:	
Term I	2.00
Term II	3.50
Term III	2.00
Parking Fees (nonreserved spaces):	
Entire summer period	10.00
Six-week session	6.00
Three-week session	4.00

EXTENSION COURSE FEES

Lecture or discussion course	(per unit) \$33.00
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EXEMPTIONS

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

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

ALAN PATTEE SCHOLARSHIPS

Children of deceased public law enforcement or fire suppression employees, who were California residents and who were killed in the course of law enforcement or fire suppression duties, are not charged fees or tuition of any kind at any California State University or College, according to the Alan Pattee Scholarship Act, Education Code Section 23762. Students qualifying for these benefits are known as Alan Pattee scholars. For further information, contact the Admissions / Registrar's Office, which determines eligibility.

STUDENT SERVICES FEE

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

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

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

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

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

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

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

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

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

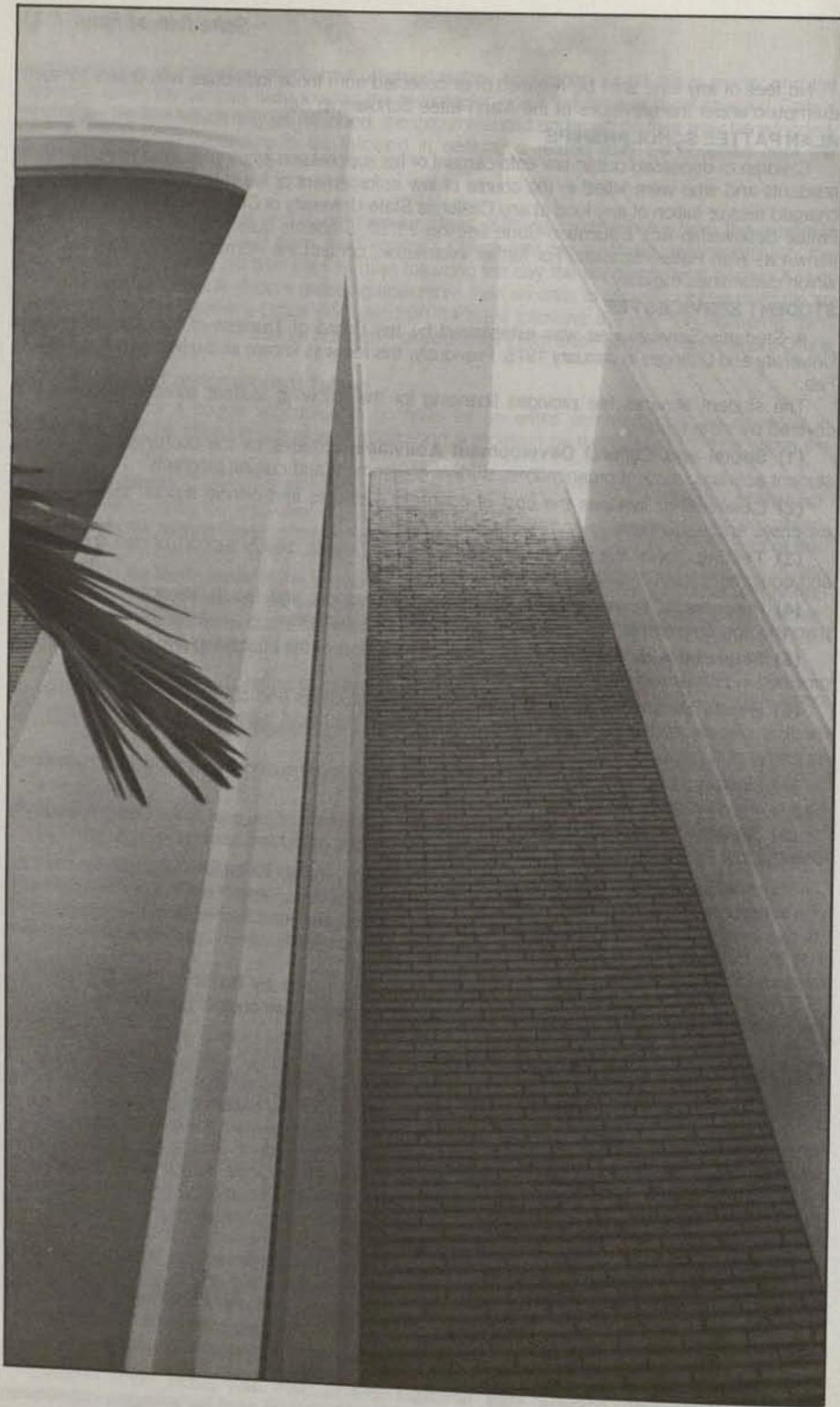
(8) Student Services Administration: covers 50 percent of the cost of the Dean of Students Office which has responsibility for the overall administration of student services.

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

The 1977-1978 Student Services Fee is subject to change by Board of Trustees action as necessitated by budget actions of the executive and legislative branches of government.

Debts Owed to the Institution

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



Principal Officers of Administration

PART ONE

San Diego State University

President
 Vice President for Academic Affairs
 Vice President for Business and Financial Affairs
 Dean of Student Affairs
 Director of University Affairs

Dean of the Graduate Division and Research
 Associate Dean
 Assistant Dean

Department of Psychology
 Department of Sociology
 Department of Anthropology
 Department of History

Department of Geography
 Department of Political Science
 Department of Economics
 Department of Business Administration

Department of Education
 Department of Health, Behavior, and Society
 Department of Environmental Studies
 Department of International Studies

Department of Law
 Department of Public Administration
 Department of Urban and Environmental Studies
 Department of Women's Studies

Department of Art and Art History
 Department of Music
 Department of Theater and Dance
 Department of Visual Arts

Department of Physical Education and Recreation
 Department of Health, Physical Education, and Recreation
 Department of Recreation Management
 Department of Leisure Services

Department of Library and Information Science
 Department of Archives and Records Management
 Department of Publishing and Printing
 Department of Computer Science

Principal Officers of Administration

President	Brage Golding
Vice President for Academic Affairs	Trevor Colbourn
Vice President for Business and Financial Affairs	William L. Erickson
Dean of Student Affairs	Daniel B. Nowak
Director of University Affairs	Frank P. McCreary

Academic Administration

GRADUATE DIVISION

Dean of the Graduate Division and Research	James W. Cobble
Associate Dean	Irving Alan Sparks
Acting Associate Dean	Dennis J. Selder
Assistant Dean	Arthur W. Schatz

THE GRADUATE COUNCIL

The Graduate Council of San Diego State University consists of the Dean of the Graduate Division and Research (chairman), the Vice President for Academic Affairs, the Associate and Assistant Deans of the Graduate Division, and members of the faculty from the various schools and colleges. For the academic year 1976-77, the membership of the Council was as follows:

James W. Cobble	Dean of the Graduate Division and Research
Trevor Colbourn	(ex officio) Vice President for Academic Affairs
Louis A. Kenney	(ex officio) Director of Library Services
Irving Alan Sparks	Associate Dean of the Graduate Division
Dennis J. Selder	Acting Associate Dean of the Graduate Division
Arthur W. Schatz	Assistant Dean of the Graduate Division
William F. Barber	Department of Marketing
James R. Beatty	Department of Management
Stephen M. Brown	Graduate Student, Zoology
Joan F. Curry	Department of Secondary Education
Glendon F. Drake	Department of Linguistics
Barbara E. Gunning	Department of Linguistics
Peggy M. Hawley	Family Studies and Consumer Sciences
Glenn O. Haworth	Department of Counselor Education
Harvey E. Heiges	School of Social Work
William A. Hunrichs	Department of Geography
James Koontz	Department of Psychology
Harriet G. Kopp	Graduate Student, Public Administration
Skaidrite Krisans	Department of Communicative Disorders
Govindarajulu Krishnamoorthy	Department of Biology
Charles D. Smith	Department of Civil Engineering
Stephen M. Brown	Department of History
Jean D. Swiggett	Graduate Student, Zoology
Earl P. Wadsworth	Department of Art
	Department of Chemistry

(Membership for 1977-78 will be determined prior to the beginning of the academic year.)

Colleges, Schools and Departments

	Chairmen
COLLEGE OF ARTS AND LETTERS	Frank Marini, Dean
Associate Dean	Elsie B. Adams
Assistant Dean for Student Affairs	Frances Foster
Afro-American Studies	James N. Kerri
American Indian Studies	John Rouillard
Anthropology	Larry L. Leach
Classical and Oriental Languages and Literatures	Steven C. Schaber
Economics	Fred Sebold
French and Italian Languages and Literatures	Elizabeth Jackson
Geography	Warren Johnson
Germanic and Slavic Languages and Literatures	Ludek Kozlik
History	Robert C. Detweiler
Linguistics	Glendon Drake
Literature	Fred Moramarco
Philosophy	Stanley Weissman
Political Science	Louis M. Terrell
Religious Studies	Christine Downing
Sociology	C. Dale Johnson
Spanish and Portuguese Languages and Literatures	Gustav V. Segade
Women's Studies Program	Marilyn Boxer
COLLEGE OF PROFESSIONAL STUDIES	Norman Rost, Acting Dean
Associate Dean	Millard Biggs
Assistant Dean for Student Affairs	George Hutchinson
Aerospace Studies	Lt. Col. Carl W. Lasiter
Art	Winifred Higgins
Athletics	O. Kenneth Karr, Jr.
Communicative Disorders	Harriet G. Kopp
Drama	Gordon Howard
Family Studies and Consumer Sciences	David Fulcomer
Health Science and Safety	Ralph Grawunder
Industrial Studies	Harold L. Marsters
Journalism	Frederick Whitney
Mexican-American Studies	Jose Villarino, Acting
Music	J. Dayton Smith
Nursing	Dolores A. Wozniak
Physical Education	Richard W. Wells
Public Administration and Urban Studies	James D. Kitchen
Recreation	Donald Peterson
Speech Communication	Fred Sanders
Telecommunications and Film	K. Charles Jameson
COLLEGE OF SCIENCES	Albert W. Johnson, Dean
Associate Dean	John D. Schopp
Associate Dean	Donald Short
Assistant Dean for Student Affairs	Celia Marshak
Astronomy	Burt Nelson
Biology	Adela Baer
Botany	David L. Rayle
Chemistry	Walter Jones
Geological Sciences	Richard W. Berry
Mathematical Sciences	Edmund I. Deaton
Microbiology	Beatrice L. Kelly
Natural Science	James Matthewson
Physics	Stephen B. W. Roeder
Psychology	John Grossberg
Zoology	Michael D. Atkins

SCHOOL OF BUSINESS ADMINISTRATION	Robert P. Hungate, Dean
Associate Dean	Maurice L. Crawford
Assistant Dean for Graduate Studies	William F. Barber
Assistant Dean for Student Affairs	Penny L. Wright
Accounting	Allan Bailey
Finance	Pieter A. Vandenberg
Information Systems	William Spaulding
Management	William R. Sherrard
Marketing	Richard D. Darley
SCHOOL OF EDUCATION	Tomas A. Arciniega, Dean
Associate Dean	Robert R. Nardelli
Assistant Dean for Student Affairs	Jaime Lujan
Coordinator, Clinical Training Center	Joan F. Curry
Coordinator, Counselor Education	John D. Chamley
Coordinator, Educational Administration	Howard B. Holt
Coordinator, Educational Technology and Librarianship	Patrick J. Harrison
Coordinator, Elementary Education	James M. Kaatz
Coordinator, Graduate Programs	Peggy Hawley
Coordinator, Higher Education Programs	Robert D. Smith, Jr.
Coordinator, Secondary Education	Doris A. Meek
Coordinator, Special Education	Francis A. Ballantine
SCHOOL OF ENGINEERING	Glen L. Martin, Dean
Associate Dean	George T. Craig
Assistant Dean for Student Affairs	George T. Craig
Aerospace Engineering	Robert D. McGhie
Civil Engineering	Howard H. Chang
Electrical Engineering	Shu-Yun Chan
Mechanical Engineering	Richard A. Fitz
SCHOOL OF SOCIAL WORK	Harry Butler, Dean
Associate Dean	Glenn Haworth
Assistant Dean for Student Affairs	E. Frederick Anderson
COLLEGE OF EXTENDED STUDIES	William P. Locke, Dean
Director, External Academic Programs	Larry Clinger
Director, Summer Session	Larry Cobb
Director, Conferences & Professional Programs	Hugh Terrell
Director, Military Education Programs	Hollie Elliott

PART TWO

General Information

General Information College of Extended Studies External Degree Programs

General Information

San Diego State University

San Diego State University is a publicly supported institution of higher learning which, since its founding in 1897, has been dedicated to the service of men and women in the pursuit of their educational goals. The southernmost link of the California State University and Colleges system, the University offers postbaccalaureate study and research in a wide variety of professional and graduate programs, leading to credentials, master's, and doctoral degrees.

The campus is situated near the eastern boundary of San Diego on a mesa overlooking Mission Valley, the site of the first mission founded in California by Father Junipero Serra. Greater San Diego is a large metropolitan area located in an ideal climate well suited to academic and cultural pursuits. Three other institutions of higher learning, as well as the famous San Diego Zoo, the Old Globe Theatre, the Fine Arts Gallery, the Timken Gallery, and the Museum of Natural History are within easy driving distance of the campus. The San Diego Stadium, Sports Arena, a number of fine beaches and the nearby Laguna Mountains and desert provide ample opportunity for recreational activities.

The faculty of the University is made up of over 1,400 scholars and teachers who are distinguished members of their professions coming from over 100 colleges and universities in the United States or abroad. Committed to good teaching, they are also engaged in research, scholarship and professional activities, which is necessary in maintaining a stimulating and exciting academic climate for graduate education.

The degree of intellectual leadership which the University plays in higher education has been recognized by a number of learned societies which are located on campus, including the Phi Beta Kappa and Phi Kappa Phi honor societies. The University is fully accredited by the Western Association of Schools and Colleges, the National Council for Accreditation of Teacher Education, the California State Board of Education, and is approved by the Veterans Administration for the education and training of veterans. The master's degree programs in Business Administration are accredited by the American Association of Collegiate Schools of Business. The Department of Chemistry is on the approved list of the American Chemical Society, thereby enabling qualified students to receive the Certificate of the American Chemical Society. The Department of Music is a member of the National Association of Schools of Music. Public Administration and Urban Studies is a member of the National Association of Schools of Public Affairs and Administration. The School of Engineering is accredited in the fields of aerospace, civil, electrical and electronic, and mechanical engineering by the Engineer's Council for Professional Development. The Master of Social Work degree is accredited by the Council of Social Work Education.

San Diego State University also has memberships in the Western Association of Graduate Schools and the Council of Graduate Schools in the United States.

The Malcolm A. Love Library

The centrally located Malcolm A. Love Library, with its open stacks, adjoining study areas, and many individual carrels, has been designed to facilitate study, research and reading. It has spaces for some three thousand readers and will ultimately accommodate over a million volumes.

Presently the collection comprises some 645,000 volumes including books and bound periodicals, and 315,000 bound government documents. Additional resources include 1.1 million microfiche and microopaque cards, 36,000 reels of microfilm, 7,000 college catalogs, 65,000 items of curriculum materials, 24,000 scientific reports, 600,000 archival papers, and 3200 phonograph records. The library receives 10,000 periodical and serial titles, excluding government documents. It is a depository for United States and California government publications. It receives all United Nations and Organization of American States publications, as well as many publications of other national and international bodies.

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

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

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

Research

The importance of research in graduate instruction is recognized by the faculty and all graduate programs contain provisions for research experience on the part of the graduate student. Among the facilities for research which may be utilized by students are those provided in organized bureaus, centers, and institutes located on the campus.

Edwin C. Allison Center for the Study of Pacific Faunas

R. Gordon Gastil, Director

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

Asian Studies

Alvin D. Coox, Director

The Center for Asian Studies is an interdisciplinary organization in the College of Arts and Letters. Drawing upon faculty members from many fields campus wide, it performs such services as (1) securing and administering grants and other support for research and development in Asian studies; (2) coordinating and publicizing the activities of faculty engaged in Asian-centered studies; (3) developing and administering the Asian studies program and relevant curricula at the undergraduate and graduate levels; (4) responding to campus and community requests for information and services; (5) fostering campus and community interest in Asian studies. The center's reading room and study facility, located in LE-471, contains Asian periodicals, books, pamphlets, dictionaries and maps.

Business and Economic Research

Darryl Mity, Director

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

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

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

Counselor Education

Raymond Howard, Director

The Center for the Study of Counselor Education is an interdisciplinary task force under the administrative jurisdiction of the Dean of the School of Education; fiscal matters are coordinated through the San Diego State University Foundation. The center is designed to draw together faculty members from relevant disciplines such as anthropology, economics, education, psychology, social

welfare, social work, sociology, and the University Counseling Center for such purposes as (1) securing and administering grants and other support for research and development in counselor education and guidance and (2) conducting programs or rendering services related to counselor education and guidance through contractual agreements with public or private agencies or organizations.

Economics Research Center

Yannis Venieris, Director

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

Bureau of Educational Research and Evaluation

Peggy M. Hawley, Director

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

European Studies Center

William O. Westervelt, Director

The European Studies Center coordinates and supports teaching and research related to the European area. It supervises the major in European studies for the A.B. degree. It sponsors the annual San Diego State University Summer Seminar and Travel Study Tour to Europe. It administers the European Studies Center Laboratory in LE-470 which contains books, pamphlets, English and foreign language periodicals, and a slide collection on European art and geography. The laboratory room is open several hours each day for study and research by students and instructors in courses dealing with any aspect of European studies. The center also assists in the development of the university library's holdings in the European area and has created a special collection of library materials on European integration and unification which is being steadily and systematically expanded.

Institute of Labor Economics

Adam Gifford, Director

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

Latin American Studies

Philip F. Flemion and Ernst C. Griffin, Co-Directors

The Center for Latin American Studies seeks to encourage teaching and research related to Latin America. It has primary responsibility for the administration of the Latin American undergraduate and graduate degrees. In 1976, the U.S. Office of Education designated the Center as one of the nation's 10 Latin American language and area centers. In conjunction with this award, the center administers programs that focus on: (1) initiation of a problem-oriented approach to Latin American studies through the creation of courses dealing with urbanization and modernization of the area; (2) development of innovative methods of instruction in Spanish and Portuguese; (3) provision of services for the general public through the sponsorship of conferences, workshops, lectures and films. The Center also assists in the development of the University library's Latin American holdings and has created a special collection of Latin American materials which is available in the Center's reading room.

Center for Marine Studies

Richard F. Ford, Director

The Center for Marine Studies was established to coordinate and represent the multidisciplinary marine studies programs offered by departments within the University, to aid in the development of instructional, research, and public services aspects of the program, and to provide special supporting services to those involved. The center is operated as a special unit of the College of Sciences. Supporting services sponsored by the center include advising students concerning marine studies, assistance to faculty and students in research and publication, a boat operations program, and the University Diving Safety Program. The center is administered by a director, associate directors, and an executive committee consisting of faculty members elected from participating departments in the College of Sciences, the College of Arts and Letters, the College of Professional Studies, the School of Business Administration, and the School of Engineering.

Paleobiology Council

Richard D. Estes, Chairman

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

Public and Urban Affairs

W. Richard Bigger, Director

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

Public Economics

George Babilot, Director

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

Regional Environmental Studies

Charles F. Cooper, Director

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

Research in Economic Development

Murugappa Madhavan, Director

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

Sociological Research**Warner Bloomberg, Director**

The Sociological 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. The center is administered for the Department of Sociology by a director whose duties include consulting assistance in the designing and execution of studies and in the preparation of proposals to funding agencies.

Social Science Research Laboratory**Richard Hofstetter, Director**

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

Survey Research**Oscar Kaplan, Director**

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

Computer Center

The Computer Center is established to encourage and support the use of computers in all instructional, research and administrative activities of the University. The present equipment includes a large-size digital computer—an IBM 360 Model 50 with 393,216 bytes of core storage and a large array of peripherals. The supervisor is the Disc Operating System which supports the Assembler, COBOL, FORTRAN, PL/1 and RPG languages. Remote Job Entry facilities are located on the East and West sides of the campus. A smaller digital computer, an 8K IBM 1130, supports the APL and FORTRAN languages, has a plotting capability and serves as a remote job entry facility.

A dual CDC 3300 located at the Chancellor's Office for statewide usage is available to campus users via a high speed data link. Over 70 time sharing terminals are strategically located throughout the campus and are available via dial-up telephone lines to either a DEC 11/45 on campus or to the statewide time sharing system. Programming and data processing courses, and courses related to some specialized applications of computers are offered by several departments within the University. Many of these courses have special purpose minicomputers devoted to their area.

Residence Halls

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

Currently, the cost for room rental is approximately \$373 to \$468 per semester. Three food service plans (10, 14 or 19 meals per week) are offered in the Commons at additional charges presently ranging from approximately \$260 to \$380 per semester, on an optional basis.

IT IS THE RESPONSIBILITY OF EACH STUDENT TO CONTACT THE HOUSING OFFICE IF ONE WISHES TO OBTAIN ON-CAMPUS HOUSING. APPLICATIONS ARE GIVEN PRIORITY IN DATE ORDER AS DEMAND EXCEEDS THE NUMBER OF SPACES ON THIS CAMPUS. To apply for housing, the student should send a self-addressed envelope to the University Housing Service. When the application is completed, it should be accompanied by a deposit and mailed to the Cashier's Office at the University. A request for a room is confirmed after the student is admitted to the University, when a contract is received, and the first payment is received as specified. A student may apply as early as a year in advance. Though consideration will be given to a student's request for an individual hall and roommate, a specific assignment cannot be guaranteed.

No reservation can be confirmed until the student is accepted for admission to San Diego State University. Receipt of a housing contract does not mean that the University is committed to admitting

the student. The deposit will be refunded if a student, after having submitted his housing application, is denied admission to the University.

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

OFF-CAMPUS HOUSING

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

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

University Counseling Center

The facilities of the University Counseling Center are available to graduate students who may desire assistance in the solution of problems of an occupational or personal nature. Counseling appointments may be made at the center or by telephone. Psychological testing is available upon arrangement with a counselor.

Health Services

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

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

Nurse practitioners are also available to assist physicians in providing consultation, treating minor physical conditions, and assisting in emergencies. Full-time nurses as well as X-ray and laboratory technicians are also on duty when school is in regular session. Special clinics include Family Planning, Dermatology, Gynecology, and Orthopedics.

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

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

INSURANCE: The Associated Students offer a student health insurance program that is strongly recommended to students having no private medical insurance coverage. This insurance covers hospitalization and specified medical and surgical services, and may be purchased by the semester or by the year through Aztec Shops. An open enrollment period is available the first 30 days of each semester.

Career Planning and Placement Center

What will I do for a living?

This question is uppermost in the minds of many students when they first arrive on the campus. Students spend increasing amounts of time considering the question as their collegiate career passes, and probably every graduate is concerned with finding the best possible answer to the question. The Career Planning and Placement Center does not find the answer for any student; it does strive to help all students find the answer for themselves.

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

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

In addition to helping the student become established in the World of Work following graduation, the Center also assists individual students in finding part-time and summer employment while in

school. Cooperative education programs between industry and government and the University are established and coordinated through the Center.

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

Career Placement Information

The campus may furnish, upon request, information concerning the subsequent employment of students who graduate from programs or courses of study which have the purpose of preparing students for a particular career field. This information includes data concerning average starting salary and the percentage of previously enrolled students who obtained employment. The information provided may include data collected from either graduates of the campus or graduates of all campuses in The California State University and Colleges. Interested prospective students may request copies of the published information from the School Relations Officer.

Catalogs and Bulletins

The *General Catalog*, published annually in May, may be obtained from the Aztec Shops Bookstore on the campus. The current price is \$1.25 plus tax if purchased at the Bookstore, and \$2.00 if ordered by mail. The catalog carries information on admissions, fees and tuition, programs and degrees, courses, scholarships, residence halls, student services and activities, and a faculty directory.

The *Graduate Catalog*, published annually in May, may be obtained from the Aztec Shops Bookstore on the campus. The current price is \$1.05 plus tax if purchased at the Bookstore, and \$1.50 if ordered by mail.

The *Summer Sessions Bulletin*, issued each April, includes an application form, information on admissions and registration, fees, living accommodations, courses, institutes, workshops and study tours. It may be obtained free upon request to the Summer Sessions Office.

The *Class Schedule* with instructions for registration is published prior to the opening of each semester and may be purchased at the Aztec Shops Bookstore on the campus.

Cost of Living

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

Estimated Expenses for the Academic Year

	Living Off Campus	Living On Campus	Commuting From Home
Materials, service, student activity, student union fee, facilities fee	\$ 188	\$ 188	\$ 188
Books and supplies	200	200	200
Personal	450	450	450
Room, board, health	2295	1575	---
Board, incidentals	---	---	600
Transportation	450	180	540
Total	\$3583	\$2593	\$1978

In addition, foreign students and out-of-state students pay an annual tuition of \$1440. Typical expenses for married students without children average \$4855 for a nine-month period.

College of Extended Studies

Functions

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

Summer Programs

The College of Extended Studies administers a comprehensive summer program for San Diego State University. Approximately 400 regular courses, workshops, short courses, interdisciplinary and experimental offerings, and special programs are available for matriculated students, students from other institutions and special groups. Selected degrees and certificate programs are available for individuals who can only attend school during the summer. Credit earned during the summer is applicable to graduation and residence requirements.

Three sessions are scheduled each summer; two 3-week terms during which four units of credit may be earned and one 6-week term in which students may earn seven units of credit. The summer program is offered from the first of June through the middle of August each year. A graduate student may earn credit in residence which may be used to satisfy the requirements for an advanced degree or for credentials. If a student plans to offer work taken in a summer session to satisfy the requirements for an advanced degree, he must make early application for admission to the University with classified graduate standing at the Office of Admissions.

Students planning to attend the University during the fall semester must be cleared for admission through the Office of Admissions.

A preliminary schedule of summer session terms and class offerings will be available shortly after the spring semester begins. The regular *Summer Sessions Bulletin*, which includes the application form and all necessary information about the summer sessions, is available for distribution after March 15.

Conferences and Professional Programs

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

Military Education Programs

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

Retired Adults Education Program

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

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

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

American Language Programs

The College of Extended Studies, in cooperation with the Department of Linguistics, offers several noncredit English programs for bilingual or international students. Academic English for the university-bound is a program offered in semester-long segments to students who intend to matriculate in American colleges or universities. The American Language and Culture Program is offered in quarterly segments to students whose goals are to improve their spoken English and to better understand American customs and lifestyles. Additionally, the division offers English for Special Purposes. Programs usually sponsored by a governmental agency or firm and Summer Language Institutes, accelerated workshops for students, teachers or business persons.

Information about and applications for these programs may be obtained from the Director of the Foreign Study Programs.

Foreign Travel/Study Programs

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

Extension Programs

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

Extension

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

The amount of extension course credit acceptable on master's degree programs is limited to a total of nine units for the Master of Arts, the Master of Science, the Master of Business Administration, and the Master of Public Administration degrees; 26 units (including a maximum of nine units of extension credit) for the Master of City Planning degree; and 35 units (including a maximum of nine units of extension credit) for the Master of Social Work degree. To be accepted as a part of the requirements for these degrees, all credit earned in other colleges or in extension courses must be approved by the appropriate graduate adviser and the Dean of the Graduate Division. It is the responsibility of the student to determine prior to enrollment in an extension course whether that course has been approved by the Graduate Council for inclusion on a master's degree program. Credit earned by correspondence or by examination is not accepted as satisfying degree requirements.

Concurrent Enrollment

A limited number of regular, on-campus classes are open to qualified extension students by special permission of the department and the instructor. Students who take advantage of "Concurrent Enrollment" are required to pay regular extension fees. They are permitted to enroll only after matriculated students have completed their registration. Credit earned through one semester of concurrent extension enrollment at the University may be considered to be residence credit for students who subsequently matriculate at the University in an advanced degree program.

Wintersession

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

International Programs

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

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

Eligibility for application is limited to those students who will have upper division or graduate standing by September 1978 at a CSUC campus; who have demonstrated the ability to adapt to a new cultural environment; and, who, in the cases of France, Germany, Mexico and Spain, will have completed at least two years of college-level study in the language of instruction at the host university, or possess equivalent knowledge of the language. At the time of application, students must have a minimum cumulative grade point average (g.p.a.) for all college-level work of 2.5, except for the programs in Israel, New Zealand, and the United Kingdom where a minimum g.p.a. of 3.0 is required. Selection is competitive and is based on home campus recommendations and the applicant's academic record. Final selection decisions are made by a statewide committee of faculty members, except for the programs in New Zealand and the United Kingdom where final selections are made by the respective host universities.

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

Applications for the 1978-79 academic year must be submitted before February 10, 1978, except for New Zealand and the United Kingdom. Applications for the New Zealand program must be submitted by May 12, 1978, for participation during calendar year 1979. (The academic year in New Zealand begins in February and ends in October.) United Kingdom applications must be submitted by January 6, 1978.

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

External Degree Programs

Purpose

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

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

Admission Requirements

Master of Arts Degree in Public Administration (M.P.A.)

Students may be admitted to the program who hold a baccalaureate degree or who are unusually qualified and who have an appropriate academic background in the collective opinion of the student's adviser and the Regional Academic Program Coordinator.

The adviser and coordinator may require the applicant for admission to take courses in addition to those listed as requirements for the degree in order to remove background deficiencies. The program is designed to serve those who are administrative practitioners in the public service; however, others may be admitted whose educational and professional background warrant the conclusion that the program would be educationally and professionally appropriate for them.

Application for admission must be submitted prior to the time a student has completed nine semester units of academic credit.

Master of Arts Degree in Vocational Education (M.A.V.E.)

Students may be admitted to the program who:

1. Have a baccalaureate degree from an accredited institution;
2. Hold a valid California Teaching Credential in a vocational subject;
3. Have completed their last 16 semester units of academic work with a grade point average of 2.5 or higher;
4. Are individuals whose maturity, experience, previous academic background and scholastic aptitude indicate a probability of success in the program;
5. Are persons who by reasons of geography, employment, family responsibility, or other personal circumstances would find it difficult to spend extensive periods of time in residence on a college campus.

Application for Admission

Application for admission to external degree programs may be obtained from the College of Extended Studies. An application fee of \$20 must be submitted with the application.

The application for admission must be supported by:

1. Official transcripts of all previous academic work;
2. Employment history (M.P.A.);
3. Verification of current professional experience (M.P.A.).

Enrollment Procedures

Students may enroll in courses without having been admitted to the program. Priority will be given to those persons who have applied for admission and have been accepted into the degree program. Students who have not been admitted to the program may enroll in courses upon the recommendation of their adviser, and with the approval of the campus program coordinator. Such enrollments shall be on a "space available" basis following enrollment of all students who have been admitted to the program. A maximum of nine semester units of work taken in this program under the nonadmitted status may be counted toward the degree.

Instruction and Scheduling

The quality of instruction in external degree programs is maintained at the same high level as that in campus programs. While the length of the instructional term for external degree programs may vary from 5 to 16 weeks, depending on the time constraints of the student population being served, the contact time per unit of credit is the same as required in campus programs. All courses offered in external degree programs earn semester units and resident credit.

Fees

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

Degree Requirements

The following is a description of the specific requirements for graduate external degree programs administered by the College of Extended Studies.

Master of Arts Degree in Vocational Education

The external program in vocational education is designed for adult Californians employed in education, business and industry whose job mobility, geographic location, personal circumstances, or work schedules limits their ability to complete a graduate program in residence at one of the campuses of The California State University and Colleges. The program combines philosophy and theory of vocational education with the specific skills of administration, curriculum development, and evaluation.

It is offered through the Consortium of The California State University and Colleges in conjunction with San Diego State University. The degree is awarded by the Consortium in the name of the Board of Trustees of The California State University and Colleges.

The program of study totals 30 semester units. Requirements are:

1. Four core courses (12 units)
 - a. I.A. 795A Introduction to Vocational Education (3)
 - b. I.A. 795B Elements of Vocational Education, Administration, Curriculum and Research (3)
 - c. I.A. 795O Implementing Change in Vocational Education (3)
 - d. I.A. 795P Program Evaluation of Vocational Education (3)
2. An area of specialization (6 units) selected from:
 - a. Program Administration and Management
 1. I.A. 795E Administration and Management of Vocational Education and Personnel (3)
 2. I.A. 795G Budget Development and Fiscal Management (3)
 - b. Curriculum Development
 1. I.A. 795H Vocational Education Curriculum Design (3)
 2. I.A. 795J Vocational Education Curriculum Development (3)
 - c. Research and Evaluation
 1. I.A. 795L Research Procedures in Vocational Education (3)
 2. I.A. 795N Data Collection and Research Analysis (3)
3. Electives (6 units). Courses selected will be relevant to the various areas within vocational education, and will relate to the area of specialization selected.
4. I.A. 796 Field Study (3 units)
5. I.A. 600 Integrative Seminar (3 units)
6. I.A. 795R Graduate Directed Study (1-2 units). Maximum 2 units.

Master of Arts Degree in Public Administration

The program is designed for practicing public administrators whose job mobility, geographic location, personal circumstances, or work schedule limits their ability to complete a graduate program in residence at one of the campuses of The California State University and Colleges. It offers flexibility in content and delivery/methodology—an educational experience suited to the public administrator's experience, knowledge, time commitments, and lifestyle.

It is offered through the Consortium of The California State University and Colleges in conjunction with San Diego State University. The degree is awarded by the Consortium in the name of the Board of Trustees of The California State University and Colleges.

Program Requirements

The course of study will consist of 10 classes (30 semester units) and a thesis or graduate project. Students will usually take five core seminars (one in each of five areas of public administration) plus an integrative seminar. The five areas of concentration and core seminars are:

1. The Environment of Public Administration
P.A. 600 Scope of Public Administration (3 units)
 2. Analytical Processes
P.A. 605 Seminar in Empirical Approaches to Public Administration:
Qualitative Analysis (3 units)
 3. Organizational Behavior
P.A. 642 Seminar in Administrative Theory (3 units)
 4. Administrative Processes
P.A. 606 Seminar in Empirical Approaches to Public Administration:
Quantitative Analysis (3 units)
 5. Public Policy Processes and Analysis
P.A. 660 Administration and Public Policy Development (3 units)
 6. Integrative Seminar
P.A. 792 Problem Analysis (3 units)
- Graduate Project or Thesis
P.A. 799A Thesis (3 units)
P.A. 799B Thesis Extension (0 units)

The remaining four courses are professional electives which may be taken as Advanced Tutorial Studies (Directed Study) with participating faculty, or as graduate courses at San Diego State University. Students must take Advanced Tutorials (or approved equivalents) in at least three of the five core areas.

Credit may be granted toward the MPA degree for three relevant graduate courses taken prior to admission to this program.

Advanced Tutorial Series

Core Area I

P.A. 798A-798B Special Study in Political, Societal and Economic Environment of Public Administration (3 units)

Core Area II

P.A. 798C-798D Special Study in Measurement and Computation in Public Administration (3 units)

Core Area III

P.A. 798E-798F Special Study in Organizational Theory and Human Behavior (3 units)

Core Area IV

P.A. 798G-798H Special Study in Analytical Processes in Public Administration (3 units)

Core Area V

P.A. 798I-798J Special Study in Analysis of Public Policy (3 units)

Credit may be granted toward the degree for three relevant graduate courses taken prior to admission to the program.

Contact the Director of Extension for additional information on Extension, External Degrees, The Wintersession, Concurrent Enrollment, and International Programs.

Elective Courses

P.A. 630 Seminar in Public Personnel Administration (3 units) (543)

P.A. 650 Seminar in Public Financial Management (3 units) (544)

PART THREE

Graduate Division

The Graduate Division Admission Regulations Requirements for Doctoral Degrees Requirements for Master's Degree

The Graduate Division

The Graduate Division is composed of all departments and academic units of the University that offer graduate study and programs leading to advanced degrees. The Graduate Council is delegated University-wide jurisdiction over all matters relating to graduate studies, subject only to the right of review by the Senate. The Council's responsibility is broad and includes, but is not limited to, the development of University-wide policy on graduate programs, graduate student affairs, graduate research and scholarship, and the participation of faculty in graduate programs.

The Dean of the Graduate Division and Research is the chief administrative officer of the Graduate Division, and is assisted by two Associate Deans and a half-time Assistant Dean. The Graduate Dean takes general responsibility for the development improvement and administration of all postbaccalaureate and graduate study at the University, as well as for the research activities of faculty and graduate students.

Graduate study is highly exacting and requires in-depth study and scholarship and not merely the completion of a prescribed set of courses. Further, thesis and dissertation research requires the development of intellectual skills and the demonstration of creativity which can only be achieved through dedicated and persistent scholarship. The University has the necessary faculty and facilities to offer such opportunities in over fifty different areas of knowledge.

Authorized Graduate Degrees

DOCTOR OF PHILOSOPHY

Chemistry Ecology Genetics

MASTER OF ARTS

American Studies	Geography	Physics
Anthropology	German	Political Science
Art	Health Science	Psychology
Asian Studies	History	Radio and Television
Biology	Industrial Arts	Russian
Chemistry	Latin American Studies	Social Science
Drama	Linguistics	Sociology
Economics	Mathematics	Spanish
Education	Music	Speech Communication
English	Philosophy	Speech Pathology and
French	Physical Education	Audiology

MASTER OF SCIENCE

Aerospace Engineering	Home Economics
Astronomy	Mass Communications
Biology	Mathematics
Business Administration	Mechanical Engineering
Chemistry	Microbiology
Civil Engineering	Physics
Computer Science	Psychology
Counseling	Radiological Physics
Criminal Justice Administration	Rehabilitation Counseling
Electrical Engineering	Statistics
Geology	

MASTER OF BUSINESS ADMINISTRATION

MASTER OF CITY PLANNING

MASTER OF FINE ARTS IN DRAMA

MASTER OF PUBLIC ADMINISTRATION

MASTER OF SOCIAL WORK

Graduate Teaching Assistantships

Graduate teaching assistantships may be obtained by qualified graduate students in the areas of anthropology, art, astronomy, biology, business administration, chemistry, drama, economics, educational technology, engineering, English, French, geography, geological sciences, German, health science and safety, family studies and consumer sciences, industrial arts, mathematical sciences, microbiology, natural science, physical education, physics, political science, psychology, public administration, Russian, sociology, Spanish, speech communication, and telecommunications and film.

Qualifications for appointment include admission to San Diego State University with classified graduate standing for the purpose of obtaining an advanced degree, and enrollment in not less than six units each semester on the official program of study, except during the terminal semester.

Appointment to a graduate teaching assistantship is for a period of either one semester or the academic year. Reappointment following an appointment of one semester or one year, and continuation for a second semester of a one-year appointment, is dependent upon satisfactory performance in graduate studies, as prescribed by the Graduate Division, and upon departmental need for the continued service in the department.

The combined teaching assignment and course work permitted during one semester is 15 units unless an excess of this amount is authorized by the Dean of the Graduate Division.

Information concerning an appointment as a graduate teaching assistant may be obtained from the head of the department, school, or college in which the applicant wishes to obtain the master's degree. A *Handbook for Graduate Teaching Assistants* is published annually by the Graduate Division Office.

Graduate Assistantships

Graduate assistantships not involving teaching duties and requiring 20 hours of service per week for full-time appointment are available in several departments and schools. Applicants for graduate assistantships must be admitted to San Diego State University with classified graduate standing, and enroll in and complete at least six units each semester on the official program of study.

Appointment to a graduate assistantship is for a period of either one semester or the academic year. Reappointment following an appointment of one semester or one year, and continuation for a second semester of a one-year appointment, is dependent upon satisfactory performance in graduate studies, as prescribed by the Graduate Division, and upon departmental need for the continued service in the department.

Information concerning an appointment as a graduate assistant may be obtained from the head of the department, school, or college in which the applicant wishes to obtain the master's degree.

Graduate Scholarships and Awards

Graduate students interested in the following scholarships and awards may obtain application forms and further information from the Scholarship Office, unless otherwise indicated.

California Congress of Parents and Teachers, Inc.

Six Education Scholarships of \$500 to be granted only to upper division or graduate students planning to teach in the public schools of California. A scholarship recipient must assume an obligation to teach in the public schools of California for one year immediately following graduation, or the award must be repaid in full. Applications available in Scholarship Office.

Dorothy Cranston Stott

A \$100 per year scholarship to a graduate of San Diego State University with a major in English. Selection is made by the faculty of Literature in May of each year.

K. W. Stott

A \$100 per year scholarship to a graduate of San Diego State University with a major in history. Selection is made by the Department of History in May of each year.

Stipends for Social Work

Graduate students admitted to the School of Social Work and to the University may be considered for a stipend if they need financial help to undertake the program for the Master of Social Work degree. Eligibility for such stipends differs and it is, therefore, best if the student applying for admission to the School of Social Work indicates on his application whether he is in need of a stipend and the amount required. The School of Social Work will then initiate action necessary for consideration of the request as soon as appropriate.

Fellowships

The San Diego State University Scholarship Office receives the annual announcements on the Danforth, Kent, and other similar fellowship programs. Since limitations are placed on each college and university as to the number of applications it may endorse, students interested in fellowships of this type are encouraged to discuss their applications with members of the University faculty who have themselves in the past received these fellowships. These Faculty Fellows may nominate students to the San Diego State University Graduate Fellowships and Scholarship Committee. Since scores from the Graduate Record Examination Aptitude Test are required in applying for most fellowships, students should take this examination no later than the early fall of their senior year. The examination may be scheduled through the University Test Office.

California State Graduate Fellowship Program

State Fellows may attend any California college or university accredited by the Western Association of Schools and Colleges and offering recognized graduate or professional degrees in the academic areas approved by the California State Scholarship and Loan Commission. Fellowships may be used for graduate or professional work. Entering and currently enrolled students in graduate and professional schools are eligible to receive a State Graduate Fellowship. Fellowships are in the amount of tuition and/or required fees at the graduate or professional school the student will attend and may not be used for books, supplies, room, board, or other college expenses. Fellowships may be less than the full amount of tuition and fees in instances where the Commission determines that the student has need for less than a full tuition award because of his own or other resources. State Graduate Fellowships will range from \$300 to full fees at the University of California; from \$500 to full tuition and/or fees at independent colleges; and are in the amount of fees charged at state universities and colleges, usually approximately \$160. State Fellowships are granted for one academic year (September through June). They are awarded after consideration of both academic and financial characteristics and critical manpower needs. In determining whether or not financial need exists and in what amount, the Commission has developed standards of financial need assessment of each applicant as an individual in his own right. Financial need is determined by comparing the applicant's own estimate of his resources for the academic year with an annual college cost estimate developed by the Commission for each graduate and professional school. Budgets vary for single and married students and do give consideration for special factors which pertain to each applicant. Original application forms are available from the Scholarship Office between October 1 and December 15. State Fellowships are renewable for up to three additional years. Renewal applications are automatically mailed to each State Graduate Fellowship recipient in mid-April.

Scholarships and Fellowships Administered by Departments

During the 1974-75 academic year, about 150 graduate students received scholarships, fellowships, grants, or stipends totaling approximately \$250,000 through the various departments. Students should check with the department of their major to determine what scholarship, fellowship, grant or stipend might be available to them.

Financial Aid

At San Diego State University every effort is made to see that students who wish to attend are not prevented from doing so because of inadequate financial resources. To this end, financial aid in the form of loans and opportunity for part-time employment on or off campus is made available to qualified applicants. In a majority of cases, a student will be offered a package financial aid plan which may include a loan and part-time employment. The programs explained below are administered by the Financial Aid Office located in the Campus Laboratory School.

San Diego State University Foundation Loan Program

Through the generosity of a number of individuals and groups, funds have been established to assist students with emergency loans. Completion of at least one semester of full-time attendance at the University is required before the student is eligible. The student borrower must also be currently in full-time attendance. The amount that may be borrowed, based on college-related need, is normally \$100 or less but may not exceed \$200. Repayment is generally made during the semester. Most loans under this program are free of interest. Applications are available throughout the academic year.

National Direct Student Loan Program

National Direct Student Loans under the National Defense Education Act of 1958 are available to entering and continuing students who can meet the specific qualifications. The amount that may be borrowed, based on college-related need, may not exceed \$2,000 per year for a graduate student. The interest rate is three percent simple interest per year starting nine months after the student ceases to carry at least one-half the normal full-time work load. The repayment period may be interrupted when a borrower enters the military service, Peace Corps, VISTA, or continues as a student at an institution of higher education. This loan program may provide a borrower with partial cancellation of his loan each year for service as a full-time teacher in certain public or other nonprofit elementary or secondary schools. The loan may be cancelled at the rate of 12½ percent per year up to a maximum of 50 percent for certain specified military service performed after July 1, 1970.

United Student Aid Fund Program

United Student Aid Fund Loans in conjunction with the student's participating home town bank are available to graduate students meeting specific requirements. The amount that may be borrowed, based on college-related need, may not exceed \$1,500 per year for graduate students. Repayment begins nine months from the time the borrower ceases to carry at least one-half the normal full-time academic work load, and may extend between three and ten years depending on the amount borrowed. Interest at the rate of seven percent per year begins when the loan is granted. In most cases this interest cost may be fully subsidized by the federal government while the student is in college and for nine months thereafter.

Federally Insured Loan Programs

These long-term loans are made by participating banks and credit unions and provide deferred payment until graduation or the termination of higher education. Graduate students may borrow up to \$2,500 per academic year. Interest at the rate of seven percent per year begins when the loan is made. This interest, however, may be subsidized by the federal government during the period of full-time attendance and for nine months thereafter, if the student meets prescribed criteria. Repayment is over a period of three to ten years depending on the amount borrowed. Application forms are available at the Financial Aid Office. Students from other states may also secure forms from their home town banks.

University Work-Study Program

Students demonstrating financial need may be employed in positions for up to an average of twenty hours per week when classes are in session and up to a maximum of forty hours per week during vacation periods. The rate of pay for such employment, based upon individual skills, is from \$1.90 to \$3.01 per hour. Job opportunities are available both on campus and with selected community and government agencies in the San Diego area.

Minimum Requirements for All Applicants

San Diego State University participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. As a participant the institution subscribes to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists the university in determining the student's need for financial assistance. All students who have resided with their parents for over two weeks during the past year, or who have received over \$600 of financial assistance from their parents, are required to submit a copy of the Parent's Confidential Statement form to CSS, designating San Diego State University as one of the recipients. Other necessary forms and an information brochure may be obtained at the Financial Aid Office. Students who are independent of their parents must file a Student Financial Statement with the CSS.

Eligibility for Aid

All the above aid programs, except the San Diego State University Foundation Loan Program, are available only to United States citizens or persons who are in the United States on an immigrant basis.

Applying for Aid

Students may request assistance for all programs explained above on financial aid forms contained in the Application for Admission booklet.

Graduate Study in the Summer Sessions

In San Diego State University summer sessions, a graduate student may earn credit in residence which may be used to satisfy the requirements for an advanced degree or for credentials. If a student plans to offer work taken in a summer session to satisfy the requirements for an advanced degree, he must make early application for admission to the University with classified graduate standing at the Office of Admissions.

Students planning to attend the University during the fall semester must be cleared for admission through the Office of Admissions.

The acceptance of courses taken in the summer sessions by other colleges or by a teacher's local school board for salary schedule purposes is entirely optional with the college or school board concerned.

A preliminary schedule of summer session terms and class offerings will be available before the spring semester begins. The regular *Summer Sessions Bulletin*, which includes the application form and all necessary information about the summer sessions, is available for distribution after April 1.

Graduate Study for Foreign Students

The facilities of San Diego State University for graduate study are available to qualified graduates of foreign universities on the same basis and under the same regulations as apply to graduates of colleges and universities in the United States.

Admission procedures for foreign graduate students are stated in the section on Admission of Graduate Students in this catalog.

Veterans and Graduate Study

San Diego State University has been approved by the Veterans Administration and the California State Department of Education to offer graduate study for veterans leading to the master's degree, graduate teaching credentials, and other programs that require graduate training. Veterans who are interested in graduate work should visit the campus Veterans Affairs Office at 5525 Hardy Avenue for information and counseling regarding veteran's benefits, prior to the date of registration.

Admission to Postbaccalaureate and Graduate Study

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

Application Procedures

All applicants for postbaccalaureate study (e.g., advanced degree applicants, those seeking credentials, and those interested in taking courses for professional growth, etc.) must file a complete application within the appropriate filing period. **Second baccalaureate degree aspirants should apply as undergraduate degree applicants.** A complete application for postbaccalaureate study includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. Postbaccalaureate applicants who completed undergraduate degree requirements and were graduated from this University the preceding term are also required to complete and submit an application and the \$20.00 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that a postbaccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each. Applications may be obtained from the Admissions Office or the Graduate Studies Office of any California State University or College campus.

General Admission Requirements

All applicants for any type of postbaccalaureate study at San Diego State University must: (a) hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by the Dean of the Graduate Division; (b) have attained a grade point average of at least 2.5 (when A equals 4) in the last 60 semester (90 quarter) units attempted; and (c) have been in good standing at the last college attended. An applicant who does not qualify for admission under provisions (a) and (b) may be admitted by special action of the Dean of the Graduate Division if on the basis of other evidence he is judged to possess sufficient academic, professional, and other potential pertinent to his educational objectives to merit such action.

Members of the faculty of San Diego State University holding appointments at or above the rank of instructor or lecturer may not be admitted to the University as matriculated students.

NOTE: Beginning with the fall semester, 1977, students being graduated with an advanced degree in or after the fall semester, 1977, will be required to file an application for readmission in order to return to the University and enroll in courses.

Admission Categories

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

Postbaccalaureate Standing (Unclassified)

A student wishing to enroll in courses at the University with a personal or professional growth objective, but not necessarily with an objective of an advanced degree or credential, may be considered for admission with postbaccalaureate standing (unclassified) when the student meets the criteria specified under General Admission Requirements. Students admitted in this category may enroll in 500-numbered courses, but are ineligible to enroll in 600- and 700-numbered courses. Admission with postbaccalaureate standing (unclassified) does not constitute admission to, or assurance of consideration for admission to, advanced degree curricula.

Postbaccalaureate Standing (Classified)

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

Graduate Standing (Classified)

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

- Achieve a satisfactory score on the Graduate Record Examination Aptitude Test. (Students holding an advanced degree from an institution which is a member of the Council of Graduate Schools are exempted from this requirement; students applying to the School of Business Administration will take the Graduate Management Admissions Test.)
- Have completed an undergraduate major appropriate to the field in which he desires to earn an advanced degree.
- Satisfy the special departmental or school requirements as stated in Part Five of the Graduate Catalog under "Fields of Study and Courses of Instruction."
- Meet the professional, personal, and scholastic standards for graduate study established by the Graduate Council.

Students admitted with graduate standing (classified) are admitted to authorized advanced degree curricula and may enroll in 600- and 700-numbered courses. Such admission does not imply that a student will be advanced to candidacy for an advanced degree.

Conditional Graduate Standing (Classified)

A student wishing to be admitted to a program of study leading to an advanced degree and meeting the criteria specified under General Admission Requirements but having deficiencies in the criteria for graduate standing (classified) may be granted conditional graduate standing (classified), if the deficiencies can be met by specific additional preparation, including qualifying examinations. Students admitted with conditional graduate standing (classified) are admitted to authorized advanced degree curricula and may enroll in 600- and 700-numbered courses. Once the conditions established by the department or school have been met, the student will be accorded full graduate standing (classified).

Continuing Students

A student who is enrolled in the University with postbaccalaureate standing may request acceptance into an advanced degree curriculum with graduate standing (classified). Applications for such continuing students are available at the Graduate Division Office. Score reports of the Graduate Record Examination Aptitude Test must be on file at the University before continuing students may apply for graduate standing (classified).

Required Official Forms

The following official forms must be submitted to the Admissions Office:

- Application for admission or readmission, accompanied by a \$20 nonrefundable application fee. Make check or money order payable to San Diego State University. (Fee may be waived for readmission application if student was regularly enrolled as a graduate student in either of the two semesters immediately preceding the semester for which the application is submitted, unless such student was enrolled at another institution in a regular session subsequent to such previous semester.)
- Health history record
- Residency statement

These forms may be obtained from the Admissions Office. Letters from applicants signifying intention to enroll will not be considered as applications for admission. The official forms must be filed.

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

Filing of Records

The applicant must file promptly with the Admissions Office transcripts from EACH college attended (including all extension, correspondence, summer session, or evening courses). Graduate students must file transcripts in duplicate if they plan to enter an advanced degree program.

A transcript will be considered official and accepted to meet the regulations governing admission only if forwarded directly to San Diego State University by the institution attended. The applicant must request the school or college to send the transcript to the Admissions Office, San Diego State University. All records or transcripts received by the University become the property of the University and *will not be released nor will copies be made.*

Timely filing of official transcripts is absolutely essential. Failure to furnish such records will delay or preclude consideration for admission to postbaccalaureate and graduate study at the University.

Applicants are advised to send additional copies of transcripts to the school or department in which they are seeking an advanced degree to facilitate early departmental consideration.

Residency Determination

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

The following statement of the rules regarding residency determination for nonresident tuition purposes is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes by The California State University and Colleges is found in *Education Code* Sections 68000-68090, 90403, 89705-89707.5 and 68122, 68124 and 68121, and in Title 5 of the *California Administrative Code*, Article 4 (commencing with Section 41900) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

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

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

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

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a "resident student" for tuition purposes. A residence determination date is set for each academic term and is the date from which residence is determined for that term. The residence determination dates for the 1976-77 academic year are September 20, 1976 and January 25, 1977. If you have any questions regarding the applicable date, the campus Admissions Office can give you the residence determination date for the term for which you are registering.

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

- Persons below the age of 19 whose parents were residents of California but who left the state while the student who remained, was still a minor. When the minor reaches age 18, the exception continues for one year to enable the student to qualify as a resident student.
- Persons below the age of 19 who have been present in California for more than a year before the residence determination date, and entirely self-supporting for that period of time.

3. Persons below the age of 19 who have lived with and been under the continuous direct care and control of an adult, not a parent, for the two years immediately preceding the resident determination date. Such adult must have been a California resident for the most recent year.
 4. Dependent children and spouses of persons in active military service stationed in California on the residence determination date. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year. The exception, once attained, is not affected by transfer of the military person directly to a post outside the 50 states and District of Columbia.
 5. Military personnel in active service stationed in California on the residence determination date for purposes other than education at state-supported institutions of higher education. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
 6. A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States; provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if both the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the United States, provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the University.
 7. Certain refugees. Certain alien graduates of California public high schools.
 8. Certain credentialed, full-time employees of school districts.
 9. Full-time State University and Colleges employees and their children and spouses. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
 10. Certain exchange students.
 11. Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties.
 12. A person in continuous full-time attendance at an institution who had resident classification on May 1, 1973, shall not lose such classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the degree for which currently enrolled.
- Any student, following a final decision on campus on his residence classification, may make written appeal to:

Office of General Counsel
400 Golden Shore
Long Beach, California 90802

within 120 calendar days of notification of the final decision on campus of his classification. The Office of General Counsel may make a decision on the issue, or it may send the matter back to the institution with instructions for a further review on campus. Students classified incorrectly as residents or incorrectly granted an exception from nonresident tuition are subject to reclassification as nonresidents and payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the *California Administrative Code*. Resident students who become nonresidents, and nonresident students qualifying for exceptions whose basis for so qualifying changes, must immediately notify the Admissions Office. Applications for a change in classification with respect to a previous term are not accepted. The student is cautioned that this summation of rules regarding residency determination is by no means a complete explanation of their meaning. The student should also note that changes may have been made in the rate of nonresident tuition, in the statutes, and in the regulations between the time this catalog is published and the relevant residence determination date.

Admission as an International (Foreign) Student

An international (foreign) student holding the equivalent of a U.S. baccalaureate degree from a recognized foreign university and wishing to engage in graduate study at San Diego State University should write directly to the Dean of Admissions, San Diego State University, San Diego, California 92182 for information on admission requirements and procedures.

The admission of international (foreign) students is governed by separate requirements. Prospective applicants from abroad should consult the individual campus catalogs and international (foreign) student informational brochures available from the campuses. Health insurance coverage is mandatory for international (foreign) students. Present acceptable health insurance is available on campus at \$42 per year or \$21 per semester. Applicants for admission as either graduates or undergraduates whose education has been in a foreign country should file an application for admission, official certificates and detailed transcripts of record from each secondary school and collegiate institution attended several months in advance of the opening of the semester in which the applicant expects to attend. International students from outside the United States will be considered for admission only for the fall semester. Only those foreign students already in the United States will be considered for the spring semester. Students applying to transfer from a college or university in the United States must have completed a full year at that institution. If certificates and transcripts are not in English, they should be accompanied by certified English translations. Credentials will be evaluated in accordance with the general regulations governing admission to San Diego State University.

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

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

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

Limitation of Enrollment

Admission to the University 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. Since spring 1976, San Diego State University has been limiting graduate enrollment on the basis of field and aptitude of the applicant.

Members of the faculty of San Diego State University holding appointments at or above rank of instructor or lecturer may not be candidates for degrees on this campus. Faculty may register for courses outside their own departments or schools by means of concurrent enrollment through the College of Extended Studies at a reduced fee.

Registration

After a student has been admitted to the University, the first basic step is to register for classes. Registration at San Diego State University is held prior to the beginning of each semester and each summer session. The dates for registration are announced in the Class Schedule, which is issued each semester. Schedules are obtainable at the University bookstore, just before registration. They contain general information on registration, a listing of the times students are permitted to register, the courses offered for the term, and a listing of the fees required for registration. Fees are payable at the time of registration and depend on the number of units selected. Students who cannot be present at registration may have another person register for them at their scheduled time. The person designated must have his alternate's ID card and must pay his fees. He will also be required to provide necessary data on the student information card. Late registration at San Diego State University is possible only in cases of genuine emergency. This involves petition action and additional fees and in no case is permitted beyond the first week of class.

Postbaccalaureate (Unclassified) Enrollment

A postbaccalaureate student (unclassified) is not eligible to enroll in 600- and 700-numbered courses. All credit earned by a postbaccalaureate student (unclassified) is subject to evaluation as to its acceptance for graduate credit in a master's degree curriculum.

Changes in Class Schedule

A student is responsible for any change in his semester's schedule of classes after the official study list has been filed. Forms for changes in the official study list may be obtained at the Registrar's Office.

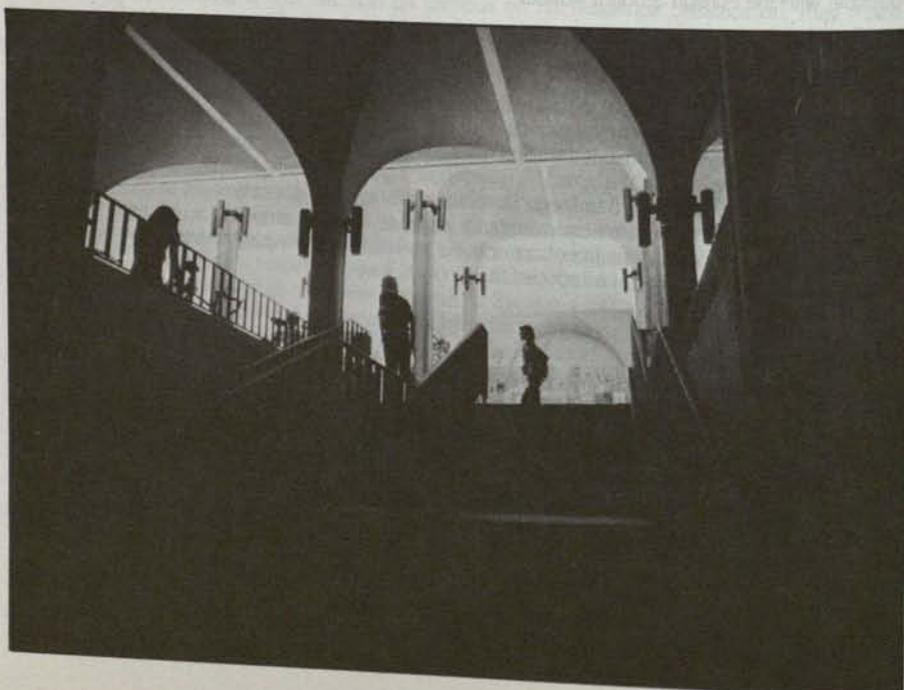
A change in schedule of classes includes the following: withdrawal from a class; adding a class; adding or reducing units to a class for which the student is already registered; changing sections of the same course. Consult calendar for deadline dates for change of schedule.

Concurrent Master's Degree Credit

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

Second Master's Degree

A student desiring to work for a second master's degree must petition the Graduate Council for permission to enter a curriculum leading to the second master's degree. A student may be admitted into only one master's degree program at a time.



Regulations of the Graduate Division

Graduate students are individually responsible for complying with the procedures, regulations, and deadlines as set forth in the General Catalog of the university and in the Graduate Catalog. All questions concerning graduate study at San Diego State University should be referred to the Graduate Division Office.

All graduate students admitted to San Diego State University after August, 1977 will be required to follow the procedures and regulations stated in the 1977-1978 editions of the Graduate Catalog. A student who was admitted to a graduate degree curriculum at this university prior to that date and who has been enrolled in one or more courses during each consecutive semester since first enrolling as a graduate student, or whose attendance has not been interrupted by more than two consecutive semesters, will be held responsible for the regulations in effect at the time his official master's degree program was approved.

Student Responsibility for Catalog Information

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

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

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

Privacy Rights of Students in Education Records

The federal Family Education Rights and Privacy Act of 1974 (20 U.S.C. 1232g) and regulations adopted thereunder (45 C.F.R. 99) and California Education Code Section 22509 et seq., set out requirements designed to protect the privacy of students concerning their records maintained by the campus. Specifically, the statute and regulations govern 1) access to student records maintained by the campus, and 2) the release of such records. In brief, the law provides that the campus must provide students access to official records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate; the right to a hearing under the law does not include any right to challenge the appropriateness of a grade as determined by the instructor. The law generally requires that written consent of the student be received before releasing personally identifiable data about the student from records to other than a specified list of exceptions. The institution has adopted a set of policies and procedures concerning implementation of the statutes and the regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Dean of Student Affairs. Among the types of information included in the campus statement of policies and procedures are: 1) the types of student records and the information contained therein; 2) the official responsible for the maintenance of each type of record; 3) the location of access lists which indicate persons requesting or receiving information from the record; 4) policies for reviewing and expunging records; 5) the access rights of students; 6) the procedures for challenging the content of student records; 7) the cost which will be charged for reproducing copies of records, and 8) the right of the student to file a complaint with the Department of Health, Education and Welfare. An office and review board have been established by the Department to investigate and adjudicate violations and complaints. The office designated for this purpose is The Family Educational Rights and Privacy Act Office (FERPA), Department of Health, Education and Welfare, 330 Independence Avenue, SW, Washington DC 20201.

The campus is authorized under the Act to release public directory information concerning students. Directory information includes the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student and any other information authorized in writing by the student. The above designated information is subject to release by the campus at any time unless the campus has received prior written objection from the student specifying information which the student requests not be released. Written objections should be sent to the Dean of Student Affairs.

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

Nondiscrimination on the Basis of Sex

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

Numbering of Courses

Courses numbered from 100 to 299 are lower division (freshman or sophomore) courses; those numbered 300 to 499 are upper division (junior or senior) courses intended for undergraduates; those numbered 500 to 599 are upper division courses also acceptable for advanced degrees; those numbered 600 to 799 are graduate courses. Courses numbered X-900 to X-999 are those courses offered exclusively in the extension program to meet the professional needs of specific community groups and are listed in the Extension Bulletin only. These courses are not acceptable on advanced degree programs.

In addition, courses below the 500 level are not acceptable for advanced degree programs.

Grading System

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

The symbol "Cr" is used to report the satisfactory completion of Courses 796, 797, 798, 799A, and certain specified 600- 700- and 800-numbered courses in Biology, Chemistry, the School of Education and Speech Pathology and Audiology. Failure to satisfactorily complete such courses will result in the assignment of "NC." No 500-numbered courses graded credit/no credit are acceptable on a master's degree program.

No course in which a final grade below "C" was earned may be used to satisfy the requirements for an advanced degree.

Grade Point Averages

Grade point averages are determined by dividing the total number of grade points earned by the total number of units attempted in courses in which letter grades are assigned. For details see the section of this bulletin under Basic Requirements for the Master's Degree.

Incomplete Grade

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

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

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

Students desiring to have their names listed on the May Commencement Program must have removed all incomplete grades received in courses listed on official master's degree programs before the deadline date listed in the Academic Calendar of this catalog.

Satisfactory Progress Grade

The "SP" symbol is used in connection with courses that extend beyond one academic term. It indicates that work is in progress and has been evaluated and found to be satisfactory to date, but that assignment of a precise grade must await completion of additional work. Work is to be completed within a stipulated time period. This may not exceed one year. Any extension of time limit must receive prior authorization by the Dean of the Graduate Division and Research (for graduate courses 797, 798 and 799).

Uncompleted Theses

A student who registers for Course 799A, Thesis, but does not complete the thesis by the end of the semester or summer session in which he registers for it will, upon the recommendation of the Thesis Committee Chairman, receive an SP (satisfactory progress) grade. This grade symbol will remain on the student's record until the thesis is completed. *A second registration in Course 799A, Thesis, is expressly prohibited.*

A student who has been assigned the grade symbol SP for the thesis is required to register for Course 799B (0 units, Cr/NC) in any semester or term (within the two-year period, as outlined above) in which the student expects to use the facilities and resources of the university; also he must be registered in the course when the completed thesis is granted final approval.

Withdrawals

A graduate student who has been admitted to a graduate degree curriculum but has completed no courses at this university within the last calendar year is considered to have withdrawn from the curriculum. He may be required to file application for readmission to the Graduate Division if he wishes to resume his graduate study. A student who withdraws from a graduate curriculum will be required to comply with regulations and requirements in effect at the time he gains readmission to the Graduate Division.

Any student who was not in attendance during the semester preceding the semester in which he wishes to enroll and was not granted a leave of absence for that period must apply for readmission to San Diego State University.

Official Withdrawal

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

Withdrawal from a course, or courses, is permitted without restriction or penalty before the end of the third week of classes. Such courses will not appear on the permanent record.

Withdrawal from a course, or courses, after the third week of classes and prior to the last three weeks of instruction is permissible only for serious and compelling reasons. Permission to withdraw during this time period is to be granted only with the approval of the instructor and the Department Chairman, and approvals are made in writing on the prescribed forms.

Withdrawal shall not be permitted during the final three weeks of instruction except in cases such as accident or serious illness where the cause of withdrawal is due to circumstances beyond the student's control and the assignment of an Incomplete is not practicable. Ordinarily, withdrawals in this category will involve total withdrawal from the University, except where sufficient work has been completed to permit an evaluation to be made. Requests for permission to withdraw under these circumstances are to be handled as indicated above, except that such requests also must be endorsed by the Dean of the Graduate Division or his designee.

Improper Registration in Graduate Courses. The unauthorized registration of undergraduate students in all courses numbered in the 600 and 700 series, and the registration of graduate students who have not met the stated prerequisites for Course 799A, Thesis, at the time of registration, will be cancelled.

Unofficial Withdrawal

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

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

Educational Leave of Absence

Students are permitted to take a total of two semesters of approved leave of absence during their matriculation at San Diego State University *if it can be clearly established that the leave will contribute to a student's educational objective*. No fees are involved.

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

Approval for leaves of absence will not be granted to students who have been admitted but will not have completed at least one semester before the leave of absence period, or to students who are disqualified. To be eligible for leave an undergraduate must be eligible to return as an undergraduate; students qualifying for change in status from undergraduate to graduate are not eligible.

Readmission

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

Repeated Courses

Ordinarily a graduate student may not repeat courses which have been taken as part of the official master's degree program. A graduate student may, with prior written permission of the graduate adviser, repeat one course on the official program of study in which a grade of C, D or F has been received. Both grades will remain on the student's permanent record, and both grades will be calculated in the grade point average.

Probation and Disqualification

Scholastic Probation

A student who is enrolled in a graduate degree program in conditionally classified or classified standing shall be placed on academic probation if he fails to maintain a cumulative grade point average of at least 3.0 in all units attempted subsequent to admission to the program.

A student who is enrolled in any postbaccalaureate status other than in conditionally classified or classified standing shall be placed on academic probation if he fails to maintain a cumulative grade point average of at least 2.5 in all units attempted subsequent to admission to the University.

A graduate or postbaccalaureate student shall be subject to disqualification if, while on probation, he fails to earn sufficient grade points to remove himself from probationary status. Disqualification may be either from further registration in a particular program or from further enrollment at the University, as determined by the Dean of the Graduate Division.

Scholastic Disqualification

Any postbaccalaureate student who has been admitted to a graduate degree curriculum and whose performance therein is judged to be unsatisfactory with respect to scholastic or professional standards as judged by the Graduate Council will be required to withdraw from all graduate degree curricula and his official status will be changed from classified graduate standing to unclassified postbaccalaureate standing.

Departments or Schools of the University may recommend that the Dean of the Graduate Division and Research dismiss from the University any graduate student whose performance in a degree, credential, or certificate program is judged unsatisfactory with respect to the academic or professional standards of the program.

Administrative-Academic Probation

A student may be placed on administrative-academic probation by action of appropriate campus officials for any of the following reasons:

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

Administrative-Academic Disqualification

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

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

Petition for Readmission

A postbaccalaureate student disqualified from the university under the foregoing regulations may be readmitted to the University by the Dean of the Graduate Division and Research. Application for readmission must be made on forms available at the Office of Admissions.

Student Discipline and Attendance

Any student may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be campus related:

- (a) Cheating or plagiarism in connection with an academic program at a campus.
- (b) Forgery, alteration or misuse of campus documents, records or identification, or knowingly furnishing false information to a campus.
- (c) Misrepresentation of oneself or of an organization to be an agent of a campus.
- (d) Obstruction or disruption, on or off campus property, of the campus educational process, administrative process or other campus function.
- (e) Physical abuse on or off campus property of the person or property of any member of the campus community or of members of his family or the threat of such physical abuse.
- (f) Theft of, or nonaccidental damage to, campus property or property in the possession of, or owned by, a member of the campus community.
- (g) Unauthorized entry into, unauthorized use of, or misuse of campus property.
- (h) On campus property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.
- (i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on campus property or at a campus function without prior authorization of the campus president.

- (j) Engaging in lewd, indecent or obscene behavior on campus property or at a campus function.
- (k) Abusive behavior directed toward, or hazing of, a member of the campus community.
- (l) Violation of any order of the campus president, notice of which had been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the other provisions of this Section.
- (m) Soliciting or assisting another to do any act which would subject a student to expulsion, suspension or probation pursuant to this Section.

No fees or tuition paid by or for the student for the semester or summer session in which he is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester 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 immediately notify his parent or guardian of the action by registered mail to the last known address, return receipt requested. (Reference: California Administrative Code, Chapter 5, Sections 41301 and 41302.)

Student Grievances

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

Transcripts of Record

A student may obtain an official transcript of his record by filing an application at the Registrar's Office. A fee of \$1 is charged for all transcripts and must be paid in advance. One week should be allowed for the processing and mailing of the transcript. Transcripts from other schools or colleges become the property of this university and will not be released nor will copies be made.

Auditors

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

Final Examinations

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

Transfer or Extension Course Credit

Subject to lower limitations for individual programs, as indicated in Part Four of this catalog, the maximum amount of transfer and San Diego State University extension course credit acceptable on master's degree programs is nine units. Exceptions are the Master of City Planning degree which permits 26 units (including a maximum of nine units of extension credit) and the Master of Social Work which permits 35 units (including a maximum of nine units of extended credit). All credit earned in other colleges or in San Diego State University extension courses is subject to approval by the appropriate graduate adviser and the Dean of the Graduate Division and Research.

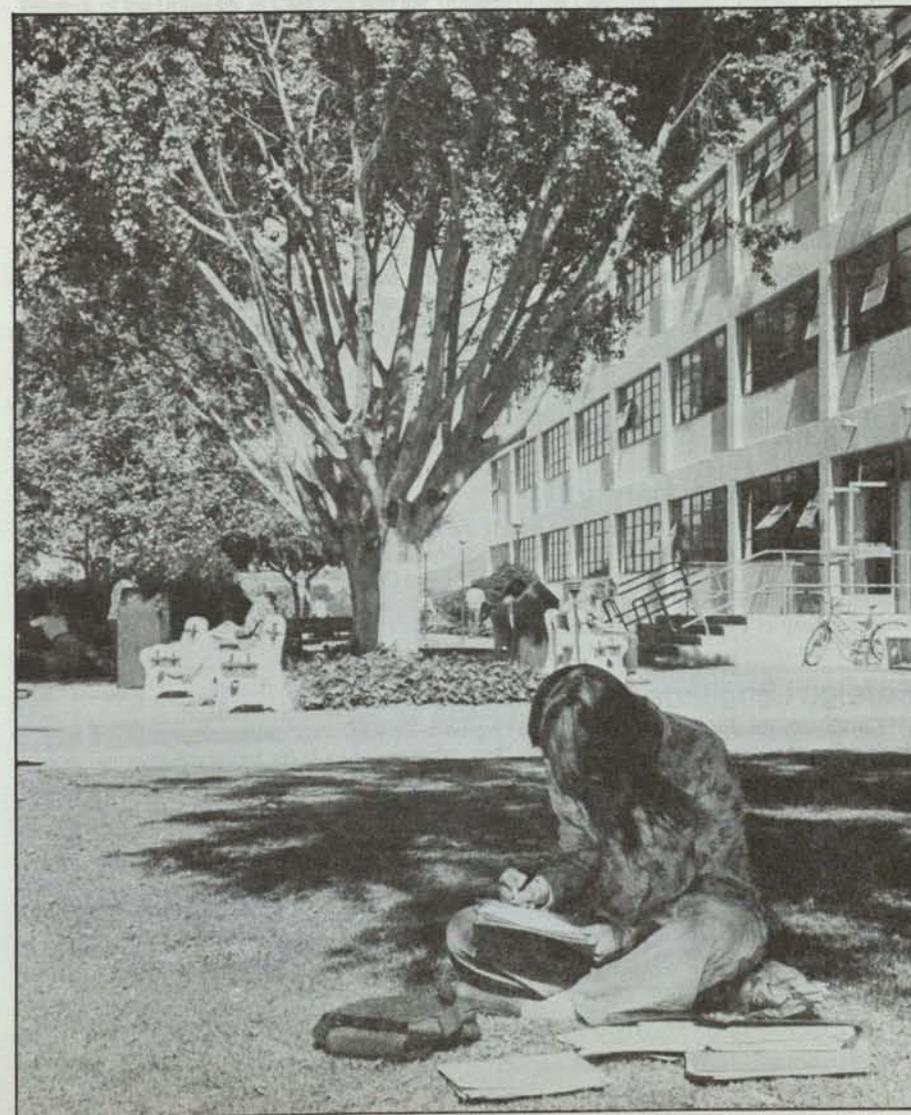
Credit earned through one semester of concurrent extension enrollment at this University may be considered residence credit for the master's degree. Concurrent extension enrollment allows nonmatriculated students who have completed individual course prerequisites and who meet the standards for regular enrollment to enroll in regular campus classes on a space available basis with the approval of the course instructor, department chairperson, graduate adviser, and Dean of the Graduate Division and Research.

Study List limits in the Graduate Division

Section 40601 (j) of the Administrative Code defines the term "full-time student" to mean any student whose program while in attendance at a college averaged twelve or more semester units per semester, or the equivalent.

Graduate students are advised that 12 units of 600- and 700-numbered courses or 15 units of a combination of 500-, 600- and 700-numbered courses are the recommended maximum programs for one semester. Graduate students who are employed full time should not attempt to earn more than six units per semester.

Graduate students who are employed as graduate teaching assistants at San Diego State University are limited to 15 units of combined teaching assignments and coursework unless a request for excess load is approved by the Dean of the Graduate Division and Research. Graduate teaching assistants who enroll for more units than authorized will not receive credit on their official degree programs for the excess number of units completed.



General Requirements for Doctoral Degrees

The degree Doctor of Philosophy (Ph.D.) is offered by three disciplines at San Diego State University in cooperation with their counterparts at University of California campuses—in chemistry with the University of California, San Diego; in ecology with the University of California, Riverside, and in genetics with the University of California, Berkeley. The general requirements in these programs are identical; however, each program has some specific requirements which will be found in Part Four of this catalog under Chemistry, Ecology, and Genetics.

Students who wish to become candidates for the degree Doctor of Philosophy in Chemistry, Ecology or Genetics should realize that the degree is granted for the capacity for original, independent, imaginative, and self-critical research rather than for the fulfillment of residence or course requirements alone. For those candidates who wish to prepare for a career in an academic institution the degree is also oriented toward excellence and enthusiasm in teaching. Students with acceptable baccalaureate degrees will normally spend at least three years of full-time study in earning the degree.

Admission to Graduate Study

An applicant for admission to a doctoral program must first be admitted to regular graduate standing in the University of California campus appropriate to his degree program and to San Diego State University. Fees and regulations governing the doctoral programs are found in the Graduate Division Catalog of San Diego State University and in the Graduate Studies Catalogs of each of the cooperating University of California campuses.

Admission to the Programs

After a student has been formally admitted to the two Universities with appropriate graduate standing, he must declare his intention to enter the doctoral program by filing an application with the Graduate Adviser. The application must be approved and signed by the Graduate Adviser on each campus and forwarded to the Graduate Deans for formal certification of admission to the doctoral program. Entry occurs when the student is formally accepted by the Graduate Deans of each of the two Universities. The Graduate Adviser on each cooperating campus is the person consulted by the student for assessment of his background and research interests and for planning of his program.

Residency Requirements

After formal admission to a doctoral program, the student must spend at least one year in full-time residence on each of the two campuses. The definition of residence must be in accord with the regulations of the University of California campus. At San Diego State University the minimum of one year of full-time residence consists of registration in and completion of at least seven semester units each semester of the required year's residence.

Foreign Language Requirements

Candidates for the Doctor of Philosophy degree in Ecology must have demonstrated a reading knowledge of at least one foreign language. This requirement must be satisfied before the student takes his qualifying examination. In Genetics foreign language preparation will usually be required for students whose area of research necessitates extensive reading of foreign language papers. The foreign language requirement in Chemistry has recently been discontinued.

Qualifying Examinations, Advancement to Candidacy and the Dissertation

Although the procedural details of each doctoral program vary somewhat within the different programs, the general requirements are:

1. The student is examined by a committee representing the faculty of the cooperating institutions for his knowledge of the field in which he is enrolled. This examination, called a Qualifying Examination, ordinarily consists of written and oral parts. The student must satisfy the cooperating departments that he is prepared in his field by passing this examination.

2. After passing the Qualifying Examination the student must apply to the Graduate Dean at the University of California campus with which he is associated for advancement to candidacy. After approval by both Graduate Deans, the student will be notified of his advancement to candidacy by the Graduate Dean, University of California (San Diego, Riverside, or Berkeley).
3. A dissertation (or thesis) on a subject chosen by the candidate and approved by a committee chosen by the Graduate Councils of the cooperating institutions is required of every candidate. Approval of the dissertation by this committee implies that the candidate has conducted an organized, independent investigation which has added significantly to the body of knowledge in his particular field and which has been reported in a satisfactory manner. Upon completion of the dissertation, the candidate must pass an oral examination conducted by a joint committee in which he is required to show the relationship of the dissertation to the general field in which the subject lies and to answer specific questions concerning his investigations.

Award of Degree

The degree Doctor of Philosophy in Chemistry, Ecology or Genetics will be awarded jointly by the Regents of the University of California and the Trustees of the California State University and Colleges in the names of the University of California (San Diego, Riverside or Berkeley, respectively) and San Diego State University.

Procedures

The time required for a student to complete the requirements for the degree is not expressed in terms of units of credit or number of semesters but will ultimately depend upon the amount of time required to master the subject matter field and to complete a satisfactory dissertation.

Information on records, transcripts, fees, details of registration, petitions and rules and regulations governing graduate students enrolled in the doctoral program is available from the Graduate Dean at each of the two cooperating institutions for each degree program.



Basic Requirements for the Master's Degree

To receive the master's degree at San Diego State University, the candidate must have completed the following general requirements of the Graduate Division and the specific requirements listed in the appropriate sections of Part Four of this catalog.

Examinations

As part of the admission procedure, all students desiring an advanced degree must take the Graduate Record Examination Aptitude Test, except for students holding a master's or higher degree from an institution which is a member of the Council of Graduate Schools of the United States.

Examinations required in the various subject matter fields of study are listed in the appropriate sections of Part Five, Courses and Curricula under Specific Requirements for the Master's Degree. (See below for the foreign language examinations and for the comprehensive examination required in lieu of thesis under Plan B.)

Official Programs of Study

Official programs of study may be submitted to the Office of the Graduate Division and Research for approval after the student has been granted full or conditional classified graduate standing. The program must be submitted prior to the time the students wish to be considered for advancement to candidacy. The catalog governing the official program will be the catalog in effect at the time the program is submitted to the Office of the Graduate Division and Research for approval.

Official master's degree programs of study, as signed or revised by the graduate adviser and approved by the Graduate Council, are binding unless the student withdraws from the University. Withdrawal is defined as having taken no courses during a calendar year.

A student who withdraws from the University and is later readmitted with classified graduate standing may, with the consent of the graduate adviser and the Graduate Council, continue his original official program of study or he may be required to submit a new program which complies with the requirements of the current *Graduate Catalog*.

When courses listed on an official master's degree program deviate from the prescribed requirements as stated in the *Graduate Catalog*, a statement indicating justification for approval must be submitted to the Dean of the Graduate Division and Research by the department concerned.

It is the student's responsibility to complete the specific courses listed on the official program of study. No changes will be permitted unless approved by the graduate adviser and the Dean of the Graduate Division and Research. No course can be deleted from an official program of study after the course has been completed.

Foreign Language Requirement

When a student is required to satisfy this requirement in French, German, Russian or Spanish, he should make arrangements with the Test Office to take the appropriate Graduate School Foreign Language Test developed by the Educational Testing Service, 1947 Center Street, Berkeley, California 94704. Passing scores on these examinations are established by the Graduate Council.

Advancement to Candidacy

A student who holds classified graduate standing at San Diego State University and who meets its scholastic, professional, and personal standards may be considered for advancement to candidacy for the master's degree provided he has filed an official program of study approved by the graduate adviser and the Dean of the Graduate Division. For the Master of Arts, the Master of Science, the Master of Business Administration, and the Master of Public Administration degrees, a student may be advanced to candidacy after he has earned at least 12 units of postbaccalaureate study with a minimum grade point average of 3.0 (B); for the Master of City Planning degree, the student must have earned at least 24 units of postbaccalaureate study with a minimum grade point average of 3.0 (B); for the Master of Science in Rehabilitation Counseling degree, the student must have earned at least 24 units of postbaccalaureate study with a minimum grade point average of 3.0 (B); and for the Master of Social Work degree, the student must have earned at least 24 units of postbaccalaureate study with a minimum grade point average of 3.0 (B).

In addition to having classified graduate standing and the grade point averages specified above, the student must (1) have maintained the grade point averages listed above in this section; (2) have completed all the undergraduate deficiencies and the special requirements of the department or school concerned; (3) have passed the foreign language examination if required; (4) have been recommended for advancement to candidacy by the department or school concerned; and (5) have been approved for advancement by the Graduate Council. Written notification of advancement to candidacy will be sent to the student from the Office of the Graduate Division and Research.

A minimum of nine units of courses listed on the official program of study must be enrolled in and completed *concurrent with or after* advancement to candidacy for the Master of Arts, the Master of Science, the Master of Public Administration, and the Master of Business Administration degrees. A minimum of 24 units on programs of study for the Master of City Planning, the Master of Fine Arts in Drama, the Master of Science in Rehabilitation Counseling, and the Master of Social Work degrees must be enrolled in and completed *concurrent with or after* advancement to candidacy. Removal of incomplete grades does not meet this requirement.

Unit Requirements

Credit earned by correspondence or by examination is not acceptable on advanced degree requirements. Courses applied toward one advanced degree may not be applied toward another advanced degree.

Master of Arts, Master of Science, and Master of Public Administration Degrees

Thirty units (36 units for the Master of Science in Counseling degree and the Master of Science degree in Psychology with a concentration in clinical psychology) of approved 500-, 600- and 700-numbered courses earned in graduate standing, at least 24 of which must be completed in residence. At least 15 units must be in 600- and 700-numbered courses. Not more than a total of six units in approved extension and transfer courses may be used to satisfy the minimum 30 units required for the degree. Courses required to remove undergraduate deficiencies are in addition to the minimum 30 units required for the degree. *Not more than a total of six units in courses numbered 797 and 798 will be accepted for credit toward the degree.*

Master of Business Administration Degree

Between 30 and 60 units (depending upon the student's background) of 600- and 700-numbered courses specified by the School of Business Administration at least 24 of which must be completed in residence. Not more than six units of approved transfer credit are acceptable for this degree. Credit earned by correspondence is unacceptable. *Not more than a total of six units in Course 797, Research, and Course 798, Special Study, will be accepted for credit toward the degree.*

Master of City Planning Degree

Fifty-six units of approved 500-, 600- and 700-numbered courses earned in graduate standing, at least 30 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 56 units for the degree. Credit earned by correspondence is unacceptable. *Not more than a total of nine units in courses 797 and 798 will be acceptable for credit toward the degree.*

Master of Fine Arts in Drama Degree

Sixty units of 500-, 600- and 700-numbered courses specified by the Department of Drama, at least 30 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 60 units for the degree. Credit earned by correspondence is unacceptable. Not more than a total of six units in course 798 will be accepted for credit toward the degree.

Master of Science in Rehabilitation Counseling Degree

Sixty units of 600- and 700-numbered courses specified by the Rehabilitation Counselor Program, at least 30 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 60 units for the degree. Credit earned by correspondence is unacceptable. *Not more than a total of nine units in courses 740 and 750 will be accepted; not more than a total of nine units in courses 720 and 730 will be accepted.*

Master of Social Work Degree

Fifty-six units of 600- and 700-numbered courses specified by the School of Social Work at least 24 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 56 units for the degree. Credit earned by correspondence is unacceptable. *Not more than a total of nine units in courses 797A, 797B, and 798 will be accepted for credit toward the degree.*

Course Requirements

In all master's degree curricula offered at San Diego State University, any course completed more than seven years prior to the date on which all requirements for the degree are completed cannot be used to satisfy the foregoing unit requirements except that the Graduate Council, on the recommendation of the department or school concerned, may extend the time for students who pass a comprehensive examination in the relevant course. *A maximum of six units may be validated for recency by examination.* With the approval of the graduate adviser and the Dean of the Graduate Division, a more recently completed course may be substituted for an outdated one, or substitute coursework of equal unit value, not yet completed, may be assigned.

In the event that more than six units of coursework become invalidated in the semester following the seven-year deadline, the departmental graduate adviser shall determine which units may be validated by comprehensive examination. Substitute coursework shall be assigned for the remaining outdated courses.

A course completed prior to seven years of the date that the official master's degree program is approved cannot be listed on the program.

Specific courses required in the basic 30, 36, 30-60, 56, or 60 units and the requirements concerning foreign languages are listed in the appropriate sections of Part Four, Courses and Curricula under Specific Requirements for the Master's Degree.

Thesis

Plan A, requiring a thesis, may be selected by a student seeking the master's degree provided the department or school concerned approves the listing of Course 799A, Thesis, on the official program of study. Three units of "Cr" are granted for the satisfactory completion of the thesis or project following its acceptance by the student's thesis committee, the department or school concerned, and the Graduate Council. Assigning of "Cr" grade for the thesis is the responsibility of the Graduate Division Office. Registration in Course 799A, Thesis, is required; however, students will not be permitted to register for this course until they have received official notification of advancement to candidacy from the Graduate Division Office and have an officially appointed thesis or project committee on file in the Graduate Division office.

Two microfiche copies and one bound copy of all master's theses or projects are accessioned by the library of San Diego State University and are subject to the regulations of the library with respect to the circulation or duplication of its cataloged materials. All theses or projects must be typed on special water-marked thesis paper available at the Aztec Shops. Students are advised to purchase a current copy of the *Manual of Instruction for the Preparation and Submission of the Master's Thesis or Master's Project* at the Aztec Shops.

Plan B, requiring a comprehensive examination in lieu of a thesis, may, with the approval of the department or school concerned, be followed in certain graduate degree curricula as indicated in Part Four of this catalog. Dates on which comprehensive examinations in lieu of theses are given are determined by the department or school concerned. Results on comprehensive examinations must be reported to the Graduate Division Office by the department or school. Refer to the calendar in Part One of this catalog for deadline dates.

Thesis Research Involving Human Subjects

University policy and procedures for research involving human subjects is published in *Policy and Procedures for the Protection of Human Subjects*, which is available in departmental offices and from the committee (Physics 343, 286-6622). Students should allow for a minimum of two weeks turnaround time after a protocol statement has been submitted to the committee. Approval must be obtained from the committee prior to data collection.

Grade Point Averages

Grade point averages of at least 3.0 (B) must be maintained on:

1. All programmed courses required for the removal of undergraduate deficiencies.
2. All programmed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer.
3. All courses, 300-level and above, taken at San Diego State University concurrently with or subsequently to the earliest course listed on the official master's degree program.

No transfer or extension credit may be used to improve the grade point average of units completed at San Diego State University.

Grade Restrictions for Master's Degree Programs

No 500-numbered courses graded Credit/No Credit are acceptable on a master's degree program. No undergraduate courses graded Credit/No Credit may be assigned to the deficiencies and/or foreign language option(s) of a master's degree program. At least 70% of the units used to fulfill the minimum requirements on a master's degree program shall be graded on an A, B, C, D, F basis.

Final Approval

The student's official program of study as approved by the graduate adviser and the Graduate Council and all required examinations must be completed in a satisfactory manner before the student will be recommended for the degree by the Graduate Council.

Application for Graduation

Graduation is not automatic on the completion of degree requirements. The student must file an application in the Graduate Division Office during the semester or term in which he expects to be graduated. Refer to the calendar preceding Part One of this catalog for deadline dates.

In the event that the student does not graduate in the semester or term in which he applies, he must reapply (and pay the graduation fee) in the subsequent semester or term in which he expects to graduate. NOTE: Beginning with the fall semester, 1977, students being graduated with an advanced degree in or after the fall semester, 1977, will be required to file an application for readmission in order to return to the University and enroll in courses.

Award of Degrees

The Board of Trustees of the California State University and Colleges, upon recommendation of the faculty of San Diego State University, awards the appropriate diploma or degree to a student who has completed the prescribed course of study.

Diploma

The appropriate diploma is forwarded to the student by the Graduate Division Office.

Courses and Curricula

This section contains the specific requirements for all graduate degrees authorized at San Diego State University by the Board of Trustees of The California State University and Colleges. These specific requirements of departments or schools supplement and are in addition to the basic requirements for the master's degree as stated in Part Three of this catalog. All official master's degree programs must be prepared in conformity with the basic and specific requirements for the degree in question.

In addition, courses acceptable for credit toward a master's degree are listed under major fields and areas of concentration. Each course is listed by department number, title, and units. Not all courses are offered every semester or every year. Ordinarily each listed course will be offered not less than once during a two-year period. For courses offered in a semester, together with the time and place of meeting, consult the semester *Class Schedule*, which is available at the Aztec Shops prior to the date of registration of each semester, or the Summer Session Bulletin, which is available prior to the opening of summer session.

San Diego State University reserves the right to withdraw any course listed in the class schedule for which the enrollment is not sufficient to warrant the organization of a class.

Prerequisites for graduate courses

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

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.

Registration in Course 798, Special Study, must be arranged by the student through the instructor, the major adviser, and the chairman of the department concerned. Forms for this purpose are available in the departmental offices.

Only those students who have been advanced to candidacy and who have an officially appointed thesis committee are permitted to register for Course 799A, Thesis. Clearance for registration in this course must be obtained by the student from the Office of the Graduate Division and Research.

Thesis Extension (799B)

This course is intended solely for those graduate students who have had prior registration in Thesis 799A, with an assigned grade symbol of SP. A student is required to register in TE799B (0 units, Cr/NC) in any semester or term following assignment of SP in Course 799A in which he expects to use the facilities and resources of the university; also he must be registered in the course when the completed thesis is granted final approval.

Unit or Credit Hour

In the listing of courses that follows, 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.

American Studies

Faculty

Graduate Advisers: Members of the American Studies Committee. Contact C.A.L. Student Advising Center, LE-469.

Faculty members in the departments participating in the degree program are listed in the American Studies Handbook, available from the C.A.L. Student Advising Center, LE-469.

Committee on American Studies

D. E. Berge
T. Cox
L. Ford
H. J. Lewin
R. W. Redding

P. Vartanian
C. Wall
S. N. Weber
D. Weinberg

General Information

The American Studies program at San Diego State University is one of thirty-three in the nation and one of two in California that offer an advanced degree. The Master of Arts degree in American Studies is an interdisciplinary degree administered by the American Studies Committee. Even though the American Studies idea is nearly fifty years old, its interdisciplinary approach has kept it flexible. Students are encouraged to accentuate courses which develop their experiences and their interests. While there are specific degree requirements, diversity characterizes the program and no one pattern or approach exists to which students are expected to conform.

The program is designed to offer systematic training for students desiring an interdisciplinary study of American Civilization. It is intended to meet the needs of students who (1) plan to continue their study in doctoral or other advanced programs in American Studies or in disciplines emphasizing areas of American orientation, (2) plan a career in secondary or junior college teaching, or (3) are seeking a broad background for professional degrees, or business or government service.

The student body is drawn from many states outside of California and lends the program a cosmopolitan atmosphere. An active student association publishes its own newsletter, provides its own activities, and participates in the administrative functions of the American Studies Committee. As a result, students in the academic program share a significant sense of identity and community.

Admission to Graduate Study

In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, the student must present a Bachelor of Arts degree with a major in American Studies, or a Bachelor of Arts degree which includes a minimum of 24 upper division units in American culture. In addition, the American Studies program requires a GPA of 3.0 in the last 60 undergraduate units attempted. A student whose preparation is deemed insufficient by his graduate adviser or by the American Studies Committee will be required to complete specified courses in addition to the minimum of 30 units required for the degree.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, students will be required to pass an oral examination, details of which are available from the graduate adviser.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree, as described in Part Three of this catalog, the student must complete a minimum of 30 units from courses listed below as acceptable on master's degree programs, of which at least 18 units must be in 600- and 700-numbered courses. Required courses are 501, Study of American Culture, at least two seminars, as well as methodological courses in one or more disciplines related to the study of American culture, as recommended by the American Studies Committee. The program must include a concentration of at least 12 (but not more than 15) units, excluding Thesis 799A, in one of the following fields:

American Literature and Philosophy
 American History
 Social Sciences and Education
 Fine Arts

The remaining units must be chosen from the other fields, with approval of the adviser.

In addition, students will be required to (1) demonstrate a reading knowledge of a language other than English, or (2) complete six units in linguistics, chosen from American English courses (Linguistics 510, 520, 524, 551 or 552), or (3) complete six units in quantitative techniques chosen from courses such as Geography 554 and 585, Journalism 507, Political Science 515A-151B, or others chosen by the adviser. These courses are not to be included as a part of the minimum 30-unit program if completed by the student as the option for the fulfillment of the foreign language requirement.

The thesis requirement for Plan A may be met in one of several ways. The American Studies thesis may consist of a single extended work dealing with a problem interdisciplinary in nature or from an interdisciplinary perspective; or it may consist of three papers (one of which may be a project), bearing upon a cultural problem from a convergent or divergent focus. Exploration of these options should be taken up with the adviser.

All programs will be approved by the American Studies Committee.

Courses Acceptable on Master's Degree Programs in American Studies

UPPER DIVISION COURSES IN AMERICAN STUDIES

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

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

580. Topics in American Studies (3) I, II

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

Literature and Philosophy:

American Studies Course

580. Topics in American Studies (3)

English Courses

521. Major and Minor Periods in American Literature (3)
 522. Individual American Author (3)
 523. Individual Movement in American Literature (3)
 524. Individual Issues in American Literature (3)
 525. Studies in American Fiction (3)
 526. Studies in American Poetry (3)
 527. Studies in American Drama (3)

Linguistics Courses

510. (180.) History of English (3)
 520. (181.) Modern English (3)
 524. (182.) American Dialectology (3)
 551. (186.) Sociolinguistics (3)
 552. (187.) Psycholinguistics (3)

Philosophy Course

564. (164.) American Philosophy (3)

History:

History Courses

- 531A-531B. (171A-171B.) Rise of the American Nation (3-3)
 532A-532B. (172A-172B.) Development of the Federal Union (3-3)
 533A-533B. (173A-173B.) Jacksonian Democracy, Civil War and Reconstruction (3-3)
 534. (174.) The Rise of Modern America, 1868-1900 (3)
 535A-535B. (175A-175B.) The United States, 1901-1945 (3-3)
 536. (175C.) The United States in the Nuclear Age (3)
 537A-537B. (181A-181B.) The Westward Movement (3-3)
 539A-539B. (183A-183B.) Black American Civilization (3-3)
 540. (185.) Environmental History of the United States (3)
 541A-541B. (189A-189B.) California (3-3)
 545A-545B. (177A-177B.) Constitutional History of the United States (3-3)
 546A-546B. (178A-178B.) Development of American Capitalism (3-3)
 547A-547B. (179A-179B.) Intellectual History of the American People (3-3)
 548A-548B. Social History of the United States (3-3)
 596. Selected Studies in History (when content relates to American Studies) (3)

Social Sciences and Education:

Anthropology Courses

520. (150.) Ethnological Field Methods (3)
 541. (161.) The California Indian (3)
 545. (171.) Ethnology of North America (3)
 546. (172B.) Southwestern Ethnology (3)

Geography Courses

555. Urban Location and Settlement Geography (3)
 566. Environment Perception and Spatial Behavior (3)
 570. Land Use Analysis (3)
 573. (173.) Geography as Human Ecology (3)
 575. (175.) Geography of Recreational Land Use (3)

Journalism Courses

500. (121.) Current Problems in Mass Communications (3)
 503. (117.) History of Mass Communications (3)
 508. (162.) Mass Communications and Society (3)

Political Science Courses

505. (105.) American Political Thought (3)
 522. (118.) Urban Politics (3)
 531. (126.) Political Groups and Movements (3)
 543S. (123S.) Contemporary American Politics (3)
 547A-547B. (139A-139B.) American Constitutional Law (3-3)

Sociology Courses

525. (125.) Minority Group Relations (3)
 545. (145.) Sociology of Mass Communications (3)
 546. (146.) Collective Behavior (3)
 547. (147.) Sociology of Social Movements (3)
 557. (157.) Urban Sociology (3)

Fine Arts:

Art Course

560. (157.) History of American Art (3)

Comparative Literature Course

570. (196.) Folk Literature (when relevant to American Studies) (3)

Religious Studies Courses

520. (150.) Religious Consciousness in American Society (3)
 522. (151.) Religion in America (3)

GRADUATE COURSES IN AMERICAN STUDIES**799A. (299.) Thesis (3) Cr/NC**

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
 Preparation of a project or thesis for the master's degree.

799B. (300.) Thesis Extension (0) Cr/NC

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

Literature and Philosophy:**English Courses**

(The English courses listed are acceptable when content relates to American Studies.)

625. (233.) American Literature (3)
 700. (291.) Seminar: A Major Author (3)
 710. (292.) Seminar: A Cultural Period (3)
 720. (293.) Seminar: Special Topics (3)
 730. (294.) Seminar: A Literary Type (3)

American History:**History Courses**

630. (241.) Directed Reading in United States History (3)
 635. (251.) Seminar in United States History (3)

Social Sciences and Education:**Education Course**

682. (202.) Social Foundations (2 or 3)

Geography Courses

(The geography seminars listed are acceptable when content relates to American Studies.)

620. (220.) Seminar in Regional Geography (3)
 650. (250.) Seminar in Systematic Geography (3)

Political Science Courses

620. (215.) Seminar in American National Government (3)
 625. (221.) Seminar in Political Participation (3)

Sociology Courses

700. (200.) Seminar in Social Theory (3)
 730. (230.) Seminar in Social Institutions
 (when relevant to American Studies) (3)

Fine Arts:**Art Courses**

(The art seminars listed are acceptable when content relates to American Studies)

760. (292E.) Seminar in Modern Art (3)
 767. (292F.) Seminar in Primitive Art (3)

Drama Course

- 647B. (247.) Seminar in History of Theatre and Drama-American (3)

Music Course

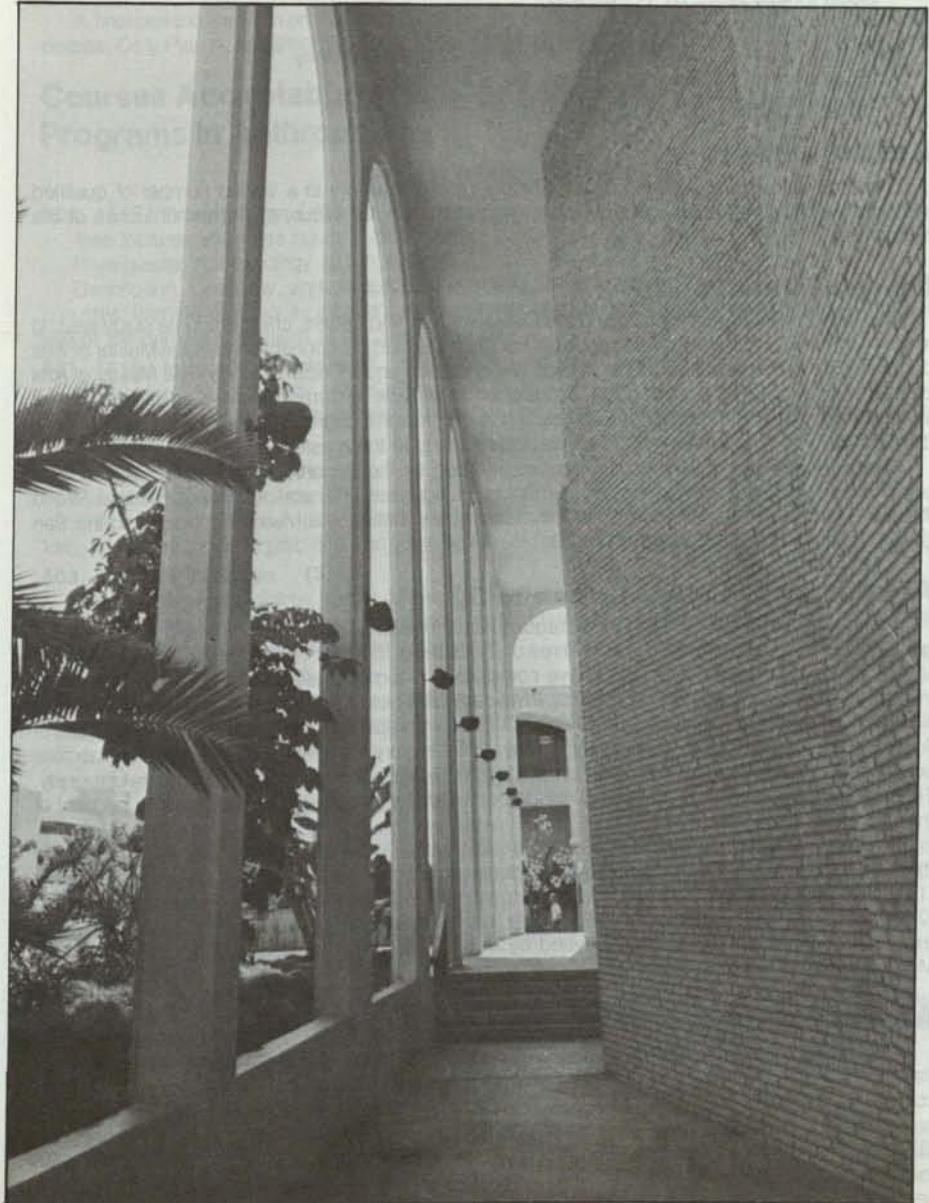
- 652E. (252.) Seminar in Music History-American Music (3)

Speech Communication Course

780. (280.) Seminar in American Public Address (3)

All 798 (Special Study) courses in named departments, when relevant, are also applicable upon approval of the Graduate Program Coordinator.

Refer to graduate course descriptions in the sections of this catalog under the appropriate departments.



Anthropology

Faculty

Chairman, Department of Anthropology: L. L. Leach
 Coordinator of Graduate Programs in Anthropology: D. D. Whitney
 Graduate Advisers:
 Archaeology: L. L. Leach
 Physical Anthropology: L. K. Lippold, A. Sonek, Jr.
 Ethnology: V. Goldkind, D. D. Whitney
 Ethnohistory: J. W. Ball
 Social Anthropology: W. C. Pendleton
 Ethnolinguistics: P. J. Greenfeld, R. S. Himes
 Professors: Goldkind, Leach, Lippold, Pendleton, Watson, Whitney
 Associate Professors: Greenfeld, Himes, Rorhl, Staniford
 Assistant Professors: Ball, Bartel, Henry, Moore, Pillsbury, Sonek

Assistantships

Graduate teaching assistantships in anthropology are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Anthropology, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Anthropology. For graduate study in connection with the Master of Arts degree in Social Science, refer to the section of this catalog under Social Science. The Master of Arts degree with a major in Anthropology is designed to provide systematic advanced training for (a) students who anticipate additional work leading to the doctoral degree in anthropology, and also for (b) students who plan to terminate their graduate training at the master's level.

Research and special instructional facilities provided by the Department of Anthropology include laboratories for California Archaeology, Ethnology, Linguistics, Physical Anthropology, and World Prehistory. Additional facilities available in the community include the Museum of Man and the San Diego Zoo.

Admission to Graduate Standing

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Anthropology must have completed or complete at least 15 upper division units including Anthropology 301, Principles of Physical Anthropology; Anthropology 302, Principles of Archaeology; Anthropology 303, Principles of Cultural Anthropology; Anthropology 304, Principles of Anthropological Linguistics; and Anthropology 305, History of Anthropological Theory, or the equivalent to those required for an undergraduate major in anthropology at San Diego State University. The student must have an overall 3.0 (B) grade point average in undergraduate courses or consent of the department.

Copies of transcripts and GREAT scores are to be sent to the Admissions Office. In addition to these and the University admission forms, students applying to the department are asked to submit (1) at least three letters of recommendation from persons in a position to judge academic ability; and (2) at least one typewritten example of their previous work (e.g., a term paper or an original experiment). Materials should be submitted by December 1 for admission for spring semester and May 1 for the fall semester.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, the students must: (1) satisfactorily complete two of the four core seminars (601, 602, 603, and 604) with a grade point average of 3.0 or better; (2) be recommended for advancement to candidacy by the faculty of the Department of Anthropology; and (3) according to the specific recommendation of the Department of Anthropology, pass either an examination demonstrating reading knowledge of an appropriate foreign language, or complete a sequence of at least one lower division and one upper division course (with a grade point average of

2.0 or better) in either:

- (a) a foreign language other than Spanish, German, French or Russian, or
- (b) Statistics.

Specific Requirements for the Master of Arts Degree

In addition to meeting the basic requirements for the Master of Arts degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units of which at least 24 units must be in 600- and 700-numbered courses in anthropology, to include:

1. Anthropology 601, 602, 603, and 604 (with a grade point average of 3.0 or better in these courses);
2. Anthropology 797, Research (3) (to be taken after advancement to candidacy);
3. Anthropology 799A, Thesis (3).

A final oral examination on the general field of the thesis must be passed as a requirement for the degree. Only Plan A, requiring the thesis, is permitted for the Master of Arts degree in Anthropology.

Courses Acceptable on Master's Degree Programs in Anthropology

UPPER DIVISION COURSES

500. (115.) Primatology (3)

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 101 or 400A.

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

501. (116.) Human Paleontology (3)

Prerequisite: Anthropology 101 or 400A.

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

502. Microevolution (3)

Prerequisite: Anthropology 301.

The evolution of human populations over a short period of time. Interaction of the evolutionary forces of mutation, selection, drift and gene flow with the cultural systems of human populations.

503. Human Variation (3)

Prerequisite: Anthropology 101 or 400A.

Morphological, physiological and genetic aspects of human variability. Significance of this diversity in the biological adaptations of human populations.

510. (122.) Language in Culture (3)

Prerequisites: Anthropology 102 or 400B; and Anthropology 304 or Linguistics 500.

Survey of anthropological interests in the study of language and of linguistic interests in the sociocultural context of language.

511. (126.) Field Methods in Linguistics (3)

Two lectures and three hours of laboratory.

Prerequisites: Three units of linguistics or Anthropology 304, and consent of instructor.

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

520. (150.) Ethnological Field Methods (3)

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 350.

The problems and techniques of obtaining data in ethnological and social anthropological field work; preparation, gaining and maintaining rapport, evaluating data, participant observation. A review of literature followed by work with informants.

522. (154.) Social Anthropology (3)

Prerequisite: Anthropology 350.

Development of social anthropology as a distinct subfield of cultural anthropology. Readings and analysis of functionalism as theory and methodology in the explanation of social and cultural processes. (Formerly numbered Anthropology 352.)

- 523. (149.) Kinship and Social Organization (3)**
Prerequisite: Anthropology 102 or 400B.
Comparison of kinship systems and the structure of social relationships throughout the world. The methodological orientations and theories relating to social organization with emphasis on non-Western societies.
- 524. (153.) Primitive Religion (3)**
Prerequisite: Anthropology 102 or 400B.
Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism. Primitive mentality and the supernatural.
- 525. (155.) Peasant Society and Culture (3)**
Prerequisite: Anthropology 102 or 400B.
The social organization and culture of present-day small agricultural communities with emphasis on changes brought about by modernization.
- 526. (156.) Cultural Change and Processes (3)**
Prerequisite: Anthropology 102 or 400B.
The individual and the culture pattern: the acquisition of culture, innovation and invention, direction of cultural development, diffusion and interpenetration of cultures. Illustrations from contemporary and historic peoples: Indians of the Southwest, Eskimos, aboriginal groups of Australia, Africa and Oceania.
- 527. (158.) Economic Anthropology (3)**
Prerequisite: Anthropology 102 or 400B.
Social relationships and cultural values inherent in the economies of primitive and peasant societies. Cross-cultural comparisons made of various means by which goods and services are acquired and distributed in non-Western, non-market-industrial societies.
- 528. (159.) Cultural Ecology (3)**
Prerequisite: Anthropology 102 or 400B.
Examination and comparison of the relationships which exist between the natural environment and the sociocultural processes in nonliterate and peasant communities.
- 529. (164.) Urban Anthropology (3)**
Prerequisite: Anthropology 102 or 400B.
Cultural roles of urban centers and processes of urbanization in non-Western, nonindustrial societies of past and present. Urban influence on traditional peasant and primitive peoples of Africa, Asia, and Latin America.
- 530. (187.) Political Anthropology (3)**
Prerequisite: Anthropology 102 or 400B.
Political processes, institutions, and ideologies in primitive and peasant societies.
- 531. (179.) Applied Anthropology (3)**
Prerequisite: Anthropology 526.
Application of anthropological concepts to the solution of practical problems of culture change in industry, corporate organization and community development.
- 532. (165.) Culture and Personality (3)**
Prerequisite: Anthropology 102 or 400B.
The relationship of individual personality to culture in a variety of cultures. A consideration of various theories and studies in the social and personality sciences.
- 533. (168.) Evaluative Procedures in Culture and Personality (3)**
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 102 or 400B.
Methods of eliciting and evaluating cross-cultural information about patterns of behavior. Such field methods as the interview and participant observation will be reviewed and evaluated.
- 540. (148.) Cultures of Europe (3)**
Prerequisite: Anthropology 102 or 400B.
The study of society and culture in contemporary Europe, utilizing current ethnographic materials. The relationship of such studies to European culture growth and to the definition of European sociocultural regions.
- 541. (161.) The California Indian (3)**
Prerequisite: Anthropology 102 or 400B.
Native California Indian cultures with stress on the Indian groups of Southern California. The industries, arts, social organization, folklore and religion will be considered as revealed through the study of living peoples and archaeological evidences.

- 542. (162.) Cultures of South America (3)**
Prerequisite: Anthropology 101 or 102 or 400A or 400B.
Indian cultures in terms of origins, migration, relation to habitat, cultural variation and relevance to contemporary trends. Development of Inca civilization, the effects of the Spanish conquest and its aftermath.
- 543. (163.) Contemporary Latin American Cultures (3)**
Prerequisite: Anthropology 102 or 400B.
A social anthropological approach to the structure and dynamics of contemporary conditions and problems, especially as revealed in studies of particular communities. Included are such topics as ethnic and regional differences within national societies, population change, social consequences of economic changes, changing stratification systems, values, institutional change.
- 545. (171.) Ethnology of North America (3)**
Prerequisite: Anthropology 102 or 400B.
Native cultures and the role of environmental and historical factors in North America.
- 546. (172B.) Southwestern Ethnology (3)**
Prerequisite: Anthropology 102 or 400B.
Indian cultures of the American Southwest in historic times; ecological adaptations, responses to white contact, adaptations to modern American life.
- 547. (175.) Cultures of Southeast Asia (3)**
Prerequisite: Anthropology 102 or 400B.
Prehistory, races and cultures of Indonesia, Philippines and nearby mainland Southeast Asia. Includes both primitive and peasant societies and reviews them with respect to environmental, historical and social factors.
- 548. (178.) Cultures of Oceania (3)**
Prerequisite: Anthropology 102 or 400B.
The aboriginal cultures and people of Melanesia, Australia, Micronesia, and Polynesia in prehistoric, historic, and modern times.
- 549. (185.) Cultures of Sub-Saharan Africa (3)**
Prerequisite: Anthropology 102 or 400B.
Indigenous peoples and cultures of Africa south of the Sahara. A comparison of cultural traditions, social organization, and modern trends in newly emergent nations of the area.
- 550. (186.) Cultures of India (3)**
Prerequisite: Anthropology 102 or 400B.
Indigenous peoples and cultures of India and contiguous areas of South Asia. The development of cultural traditions, social organization, and modern trends.
- 551. (191.) Chinese Society (3)**
Prerequisite: Anthropology 102 or 400B.
Culture and social organization of Chinese people. Traditional China, overseas Chinese, contemporary Taiwan and Hong Kong, recent social change in Mainland China.
- 552. (192.) Japanese Society (3)**
Prerequisite: Anthropology 102 or 400B.
Culture and social organization of Japanese people. Traditional Japanese economic, social, political and religious institutions. Korea, Okinawa and overseas Japanese. Recent industrial and urban changes in modern Japan.
- 553. Near Eastern Societies (3)**
Prerequisite: Anthropology 102 or 400B.
Cultures and social organization of the peoples of Southwest Asia and North Africa. Traditional social, economic, political and religious institutions. Effects of colonialism, nationalism and social change.
- 560. (173.) Advanced Archaeological Field Methods (3)**
One lecture and six hours of laboratory.
Prerequisite: Anthropology 200.
Advanced projects in excavation and stabilization of ruins, archaeological surveys, laboratory analysis and preparation of reports.
- 561A-561B. (188A-188B.) Archaeological Laboratory Methods (3-3)**
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 560. Anthropology 561A is prerequisite to 561B.
Semester I: Application of palynology, paleontology and technologies. Semester II: Practical applications of materials from 561A. Individual laboratory research project required.

- 570. (147.) Prehistory of South America (3)**
Prerequisite: Anthropology 101 or 400A.
Development of native South American cultures from initial occupation to the 16th century. Emphasis on major historical trends, particularly of the Andean area.
- 571. (170.) Archaeology of North America (3)**
Prerequisite: Anthropology 101 or 400A.
Origin of the American Indian and survey of the main prehistoric cultures of the North American continent.
- 572. (172A.) Southwestern Prehistory (3)**
Prerequisite: Anthropology 101 or 400A.
Prehistoric Indian cultures in the American Southwest; ecological adaptations and outside cultural influences.
- 573. (174.) Paleolithic Archaeology of Europe (3)**
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the area from Ireland eastwards to European Russia beginning with the first evidence of hominid activity through the end of the Pleistocene.
- 574. (176.) Archaeology of Western and Central Asia (3)**
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the area from Anatolia eastwards to India and including the Arabian peninsula beginning with the first evidence of hominid activity through ethnohistorically known societies.
- 575. (180.) Preclassic Cultures of Mesoamerica (3)**
Prerequisite: Anthropology 101 or 400A.
The development of civilization in pre-Columbian Mexico and Central America antecedent to the Tolteca, Classic Maya, and related cultures.
- 576. (181.) Classic Pre-Columbian Civilizations of Middle America (3)**
Prerequisite: Anthropology 101 or 400A.
Aboriginal Mexican and Central American civilizations through the Age of Exploration and Conquest. Aztecs, Mixtecs, Zapotecs, Mayas, and related cultures.
- 577. (182.) Post-Conquest Cultures of Middle America (3)**
Prerequisite: Anthropology 102 or 400B.
Aboriginal and mixed cultures of Mexico and Central America in Colonial and recent epochs. Aftermath of Conquest and exploitation.
- 578. (183.) Post-Pleistocene Archaeology of Europe (3)**
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the area from Ireland eastwards to European Russia in the time period from the initial Holocene hunter-gatherer-fisher adaptations and domestication of plants and animals through Roman Colonialism.
- 579. (184.) Archaeology of Africa (3)**
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the regions of northern Africa and sub-Saharan Africa beginning with the first evidence of hominid activity through ethnohistorically known societies.
- 580. (189.) Topics in Arctic Anthropology (3)**
Prerequisites: Anthropology 101 or 102 and consent of instructor.
Discussion of selected areas, periods or problems in the context of broad considerations of prehistoric, historic or contemporary cultural development and human ecology throughout the arctic and subarctic regions.
- 581. (190.) Archaeology of East Asia and Oceania (3)**
Prerequisites: Anthropology 101 and 102 or 400A and 400B.
Culture change in the areas of China, Siberia, southeast Asia, Australia, Japan and Oceania beginning with the first evidence of hominid activity through ethnohistorically known societies.

GRADUATE COURSES

- 600. (200.) Seminar (3)**
An intensive study in advanced anthropology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 601. (201.) Seminar in Physical Anthropology (3)**
Prerequisites: Anthropology 101 or 400A and 12 upper division units in anthropology.
History and theory in physical anthropology stressing the significant literature on such topics as functional anatomy, human paleontology, population genetics, and primatology.

- 602. (202.) Seminar in Archaeology (3)**
Prerequisites: Anthropology 101 or 400A and 12 upper division units in anthropology.
History and theory in archaeological data collection, analysis, and interpretation.
- 603. (203.) Seminar in Ethnology (3)**
Prerequisites: Anthropology 102 or 400B and 12 upper division units in anthropology.
History and theory in ethnology stressing the significant literature on such topics as cross-cultural comparison, structural-functional analysis and description, personality and culture, and sociocultural change.
- 604. (204.) Seminar in Linguistics (3)**
Prerequisites: Anthropology 304 or 510 and 12 upper division units in anthropology.
History and theory of linguistics stressing the significant literature on such topics as cultural cognition, descriptive linguistics, lexicostatistics, and transformational analysis.
- 620. (220.) Seminar in Regional Anthropology (3)**
Prerequisite: Twelve upper division units in anthropology.
Study of a major world region such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. Maximum credit six units applicable on a master's degree.
- 621. (221.) Seminar in Topical Anthropology (3)**
Prerequisite: Twelve upper division units in anthropology.
Study of a major subdiscipline such as Political Anthropology, Economic Anthropology, Social Anthropology, Psychological Anthropology, Cultural Ecology, Applied Anthropology, Race and Variation, or Environmental Archaeology. Maximum credit six units applicable on a master's degree.
- 630. (222.) Seminar in Historical Linguistics (3)**
Prerequisite: Anthropology 304 or 511.
Principles and techniques of historical linguistics, with concentration on the dynamics of linguistic change, comparative linguistics, and historical reconstruction as applied to non-Indo-European languages.
- 634. (257.) Seminar in Classical Nahuatl (3)**
Prerequisites: Anthropology 101 or 102 and 12 upper division units in anthropology including Anthropology 361 or 575 or 576; 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.
- 635. (258.) Seminar in Ethnoscience (3)**
Prerequisite: Twelve upper division units in anthropology.
Analysis and comparison of native categories, classifications, and bodies of systematic knowledge as demonstrated in preliterate and literate societies.
- 797. (297.) Research (3) Cr/NC**
Prerequisite: Advancement to candidacy.
Independent investigation in the general field of the thesis.
- 798. (298.) Special Study (1-3) Cr/NC**
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study directed toward the preparation of a paper on a specific problem. Maximum credit six units.
- 799A. (299.) Thesis (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
- 799B. (300.) Thesis Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis, 799A, with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Art

Faculty

Chairperson, Department of Art: W. H. Higgins
 Graduate Coordinator: J. D. Swiggett
 Credential Adviser: J. L. Tanzer
 Professors: Baker, Berg, Bigelow, Covington, Fisch, Higgins, Hopkins, Hunter, Lingren, Longenecker, Miller, Rogers, Tanzer, Wallace
 Associate Professors: Austin, Bowne, Frick, Groover, Hodge, Orth, Papworth
 Assistant Professors: Esser, Moaney, Perczel, Ray, Roberts, Mansfield, Van Tongeren

Assistantships

Graduate teaching assistantships in art are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Art, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Art.

The Art Department is prepared to offer advanced study to graduate students in the fields of painting, sculpture, crafts, printmaking, graphic communication, and the history of art. In addition to the excellent equipment of the Art Building at San Diego State University, the Fine Arts Gallery, the Putnam Foundation collection in the Timken Gallery and the Museum of Man in Balboa Park, and the La Jolla Museum of Contemporary Art in La Jolla offer valuable original materials as well as specialized libraries for research. In addition, there are numerous private galleries with a wide variety of offerings.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In general, the student must have completed an undergraduate major in art with a minimum of 24 upper division units, including two semesters' work in the general history of art, before he will be permitted to begin work on his graduate program. The student must also be able to show that he is adequately advanced to carry out projects which measure up to graduate standards. In studio areas this requirement will be measured by a formal (the Graduate Review) presentation to the Emphasis Area Faculty of a portfolio of examples of the candidate's undergraduate or postbaccalaureate work. The range should be great enough to give the committee a knowledge of the candidate's strengths and weaknesses. A statement of the candidate's objectives in the graduate program should accompany this presentation. If it is determined that the student is capable of doing graduate art work, he may be permitted to begin such work even though he has not completed an appropriate undergraduate major in art. Those students whose work is insufficiently advanced for classified graduate standing may enroll for courses, under guidance of the department, in order to meet the standard requirements. Applications for the Review may be obtained from the graduate coordinator of the department and should be returned by March 23 for the following fall semester, and by October 23 for the spring semester. The portfolios must be submitted by April 1 and November 1.

Art History applications, obtainable from the graduate coordinator, are due March 23 or October 23 for the following semester and should be accompanied by transcripts of all undergraduate or postbaccalaureate work.

Advancement to Candidacy

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this catalog, all students will be required to pass a comprehensive examination covering the fields of history of art of western civilization, the principles of art appreciation, and the techniques and materials of the artist, or to have completed a year course in the history of art of western civilization and nine undergraduate units of art history.

Students working for a Master of Arts degree in Art in the field of art history must complete the following courses or their equivalents before advancement to candidacy: Anthropology 102; Art 258, 259, 264, 265, 557, 568, 571, 573, 575; and six units in art history selected with the consent of the art history faculty. Students with an emphasis in art history must also pass a written and oral comprehensive examination in the field of art history and demonstrate a reading knowledge of French or German before advancement to candidacy.

Students with an emphasis in studio arts must have: (1) completed at least 12 units listed on his or her official program with a minimum grade point of 3.0 (B); and (2) been reviewed by the tenured and tenure-track faculty of the emphasis area and received approval of an acceptable body of graduate work completed since classified standing fulfilling the requirements of the area of specialization.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of a minimum of 30 units which includes at least 24 units in art from courses listed below as acceptable on master's degree programs in art, of which at least 16 units must be in 600- and 700-numbered courses. Those electing programs in studio arts must complete a minimum of 18 units in the area of specialization. One course in the Art 700 series as well as Art 694, one course in the Art 760 or 770 series or Art 690, and Art 799A are required. Art 790 is required of those students planning to submit a thesis under Art 799A, but is not required of those electing a creative project as fulfillment of Art 799A. Not more than a total of six units in Art 798 will be accepted.

In connection with the thesis or project, each candidate for the degree must present an exhibition on the campus of representative graduate work, including the project (if applicable), and a portfolio of additional graduate work. An oral examination over the field of the thesis or project and related material is required.

Thesis and Projects in Art

The thesis required for the Master of Arts degree in Art is a written document; the project is an original work of creative art, accompanied by a written report. All theses and written reports accepted in satisfaction of a requirement for the master's degree are cataloged and accessioned in the library; projects remain in the custody of the Department of Art.

Courses Acceptable on Master's Degree Programs in Art

UPPER DIVISION COURSES

500. (100A-100B.) Advanced Drawing (3) I, II

Six hours.

Prerequisites: Art 203 and 204.

Drawing emphasizing the qualitative aspect of visual subject matter. Maximum credit six units.

502. (120A-120B.) Inter-Media (1-3) I, II

Two hours for each unit of credit.

Prerequisites: Art 102 and 103.

Process and materials in plane and space. Maximum credit six units.

503. (115C-115D.) Life Drawing and Painting (3) I, II

Six hours.

Prerequisite: Art 403.

Drawing and painting from nude and costumed models. Maximum credit six units.

504. (116C-116D.) Advanced Painting (3) I, II

Six hours.

Prerequisite: Art 404.

Pictorial composition and painterly process. Maximum credit six units.

505. (118B.) Advanced Aqueous Media (3) I, II

Six hours.

Prerequisite: Art 405.

Composition in watercolor and related media.

- 506. (112B.) Design and Composition (3) I, II**
Six hours.
Prerequisite: Art 406.
Structure in picture making.
- 509. (106A-106B.) Relief Printmaking (3) I, II**
Six hours.
Prerequisite: Art 203.
Woodcut, wood engraving, gessocut, linoleum, collograph, and relief printmaking processes. Emphasis on fine print quality and technical development using mixed media. Maximum credit six units.
- 510. (126D-126E.) Intaglio Printmaking in Color (3)**
Six hours.
Prerequisite: Art 410.
Advanced creative intaglio printmaking in color, including zinc and copper plate; etching, drypoint, aquatint, engraving, embossing and color variations. Emphasis on fine print quality and technical development in the color process unique to this medium. Maximum credit six units.
- 511. (136C-136D.) Lithography Printmaking in Color (3)**
Six hours.
Prerequisite: Art 411.
Advanced creative lithography printmaking in color. Emphasis on fine print quality in color process and color technology unique to this medium. Maximum credit six units.
- 512. (146A-146B.) Serigraphy (3)**
Six hours.
Prerequisite: Art 203.
Techniques of reproducing original prints by means of the silkscreen process. Maximum credit six units.
- 516. (117C.) Advanced Sculpture (3) I, II**
Six hours.
Prerequisite: Art 416.
The influence of art media and tools on aesthetic organization in sculpture in relief and in the round. Maximum credit six units.
- 517. (127.) Advanced Figurative Sculpture (3) I, II**
Six hours.
Prerequisites: Art 216 and 217.
Figurative study with emphasis on individual exploration. Maximum credit six units.
- 521. (111B.) Industrial Design (3) I, II**
Six hours.
Prerequisite: Art 421.
Design of objects for manufacture with reference to their use, materials, and in accordance with factory practices and machine techniques. Practice in the techniques of presentation, working drawings, rendering and perspective and scale models.
- 522. Design Crafts (3) Irregular**
Six hours.
Prerequisite: Art 220.
Exploration of a variety of materials and techniques. Development of the aesthetic and technical abilities of the artist craftsman. Maximum credit six units.
- 523. (113C-113D.) Advanced Furniture Design (3) I, II**
Six hours.
Total credit in Art 323, 423 and 523 limited to twelve units.
Prerequisite: Art 423.
Advanced individual design; exploration of materials, process and function. Maximum credit six units.
- 525. (119C-119D.) Ceramics (3) I, II**
Six hours.
Prerequisite: Art 425.
Study of ceramic design through creative projects of clay forms. Maximum credit six units.

- 526. (121.) Clay and Glaze Technology in Ceramic Design (3)**
Six hours.
Prerequisite: Art 425.
Experimentation and application of research concerning the use of ceramic materials and techniques as an integral part of the design process. Maximum credit six units.
- 529. (161B-161C-161D.) Design in Enamels (3) I, II**
Six hours.
Prerequisite: Art 429.
Design and production of vitreous enamels. Maximum credit nine units; six units applicable on a master's degree.
- 531. (170C-170D.) Jewelry and Metalwork (3) I, II**
Six hours.
Prerequisite: Art 431.
Advanced individual problems in jewelry. Maximum credit six units.
- 532. Metalsmithing (3) I, II**
Six hours.
Prerequisite: Art 331.
Individual problems involving fabrication processes already studied in order to increase technical competence while exploring personal design statements. Individual and small group study of specialized techniques such as photoetching, electroforming, small-scale forging in iron and cut steel. Maximum credit six units.
- 534. (180C-180D.) Advanced Weaving (3) I, II**
Six hours.
Total credit in Art 234, 334 and 534 limited to nine units.
Prerequisite: Art 334.
Advanced individual problems in weaving. Maximum credit six units.
- 535. Advanced Nonwoven Textile Construction (3)**
Six hours.
Prerequisite: Art 435.
Advanced study in nonloom techniques. Techniques to include: looping, braiding, plaiting, and special fabricating techniques. Experimentation with new man-made fibers and with synthetic commercial dyes. Maximum credit six units.
- 541. (114C., 114D.) Problems in Graphic Communication (3) I, II**
Six hours.
Prerequisite: Art 441.
Refinement of personally developed design concepts for visual communication with emphasis on individually directed solutions. The development of a portfolio of professional quality. Maximum credit six units.
- 543. (193B.) Drawing and Illustration for Graphic Communication (3) I**
Six hours.
Prerequisite: Art 443.
The disciplines of realistic descriptive illustration including problems in imaginative, aesthetically refined painterly illustration. Media to include gouache, watercolor, scratch board, mixed media, and pen and ink.
- 544. (196B.) Visual Communication Media (3) I, II**
Six hours.
Prerequisite: Art 444.
Experimental, creative and practical exploration of contemporary communication as related to magazine and editorial layout. Production of a student designed limited edition.
- 547. (188.) Environmental Theory (3)**
Prerequisite: Art 247 or 347.
Survey of alternative solutions to the problem of design of the physical environment.
- 550. (187.) Environmental Prototypes (3)**
Two lectures and four hours of laboratory.
Prerequisite: Art 450.
Research and development of creative architectural concepts with emphasis in space enclosure systems and cybernetics.

- 552. (195C.) Professional Methods of Interior Design (3) Irregular**
Six hours.
Prerequisite: Art 451.
Techniques and analyses of specification writing, estimating, contractual agreements, budget studies and supervision of professional interior design projects.
- 553. (195D.) Contract Interior Design (3) Irregular**
Six hours.
Prerequisite: Art 451.
Projects in nonresidential architectural interiors involving space planning systems analysis, specification writing, equipment and materials appropriate to commercial function. Maximum credit six units.
- 554. Proxemics and Interior Design (3) Irregular**
Prerequisites: Art 249, 251, and consent of instructor.
Lectures in proxemics and study of literature pertaining to relevant controlled experiments involving use and perception of enclosed spaces. Application of theories to field problems.
- 557. (156A.) History of Modern Art (3) I, II**
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the French Revolution to the present.
- 558. (156B.) Contemporary Art (3) I, II**
Prerequisite: Art 557.
Current movements in sculpture, painting, graphics and architecture.
- 560. (157.) History of American Art (3) Irregular**
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the Native American Art and Colonial Period to the present. Field trips included.
- 561. (151A.) Arts of the Pre-Hispanic Americas (3) I**
Prerequisite: Art 158.
Arts of ancient Meso-America, Central America, Caribbean and South America from earliest times until contact with Europe. Field trips.
- 562. (151B.) Colonial Art of Latin America (3) II**
Prerequisites: Art 258 and 259.
The art and architecture of Latin America from the colonial period to the present. Field trips included.
- 565. (152A.) The Art of India and Southeast Asia (3) II**
Prerequisites: Art 258 and 259.
History of the art, architecture, and sculpture of India and Southeast Asia.
- 566. (152B.) The Art of Persia and the Islamic World (3) I**
Prerequisites: Art 258 and 259.
History of the art, architecture, sculpture and minor arts of Persia and the Islamic World.
- 567. (153.) Art of the Ancient Near East (3) I**
Prerequisite: Art 258.
Development of painting, sculpture, architecture and crafts from prehistoric times to the fourth century B.C.
- 568. (153.) Art of Crete, Mycenae, Greece, and Rome (3) II**
Prerequisite: Art 258.
Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.
- 569. Art of Sub-Saharan Africa (3) I**
Prerequisite: Art 158.
Form and content of the arts of Sub-Saharan Africa viewed within a cultural context.
- 570. Art of Oceania (3) II**
Prerequisite: Art 158.
Form and content of the arts of Australia, Melanesia, Polynesia, and Micronesia viewed within a cultural context.
- 571. (154A.) Medieval Art (3) II**
Prerequisites: Art 258 and 259.
Development of painting, sculpture and architecture from the time of Constantine through the Gothic period.

- 572. (154B.) Coptic and Byzantine Art (3) I**
Prerequisites: Art 258 and 259.
The art of the Eastern Church from the reign of Justinian to the Russian Revolution.
- 573. (155A.) Renaissance Art in Italy (3) II**
Prerequisites: Art 258 and 259.
Architecture, painting and sculpture of the Renaissance period in Italy.
- 574. (155B.) Northern Renaissance Art (3) I**
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting north of the Alps during the Renaissance period.
- 575. (155C.) Baroque and Rococo Art (3) II**
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting of the Baroque and Rococo periods.
- 576. Arts of Native North America (3) Irregular**
Prerequisite: Art 158 or American Indian Studies 265.
Form and content of the arts of Native North America viewed within a cultural context. Field trips.
- 577. (160.) History of Architecture (3) Irregular**
Prerequisites: Art 157, or 258 and 259.
Architecture from primitive times to the present.
- 578. (126C.) History of Printmaking (3) Irregular**
Prerequisites: Art 258 and 259.
History of printmaking from its inception to the present.
- 579. (129B.) Advanced History of Ceramics (4)**
Three lectures and two hours of activity.
Prerequisite: Art 479.
Emphasis on 20th century international ceramics. Philosophical approaches to historical heritage. Field trips and activities to verify findings of research.
- 580. (164.) History of Costume (3) Irregular**
Prerequisites: Art 258 and 259.
Historic origins of costume traced through aesthetic, social and political influences dominant during each period.
- 581. (135C.) History and Theory of Environmental Design (3) Irregular**
Prerequisites: Art 258 and 259.
Environmental arts in the 19th and 20th centuries.
- 584. (105.) Aesthetics of Visual Environment for Young People (3) I, II**
Six hours.
Prerequisite: Art 101.
Means of developing an expanded awareness of the environment in the young. Not open to students with credit in Art 247 or 347.
- 585. (175.) Concepts and Observations in Art (3) I, II**
Six hours.
Prerequisite: Twelve upper division units in art.
Study of principles and fundamentals of art as related to strategies of presentation.
- 586. (176.) Art Practicum Seminar (3) Irregular**
Prerequisites: Twenty upper division units in art and concurrent assignment to student teaching.
Discussion, readings, and research study related to art presentation strategies.
- 587. (110.) Exploration in Crafts for Young People (3) I, II**
Six hours.
Prerequisite: Art 101.
A design-crafts course that explores in depth materials and processes that could be used with young people. Not open to students with credit in Art 220.
- 590. (190.) Principles and Elements of Visual Aesthetic Organization (3) II**
Three hours.
Prerequisites: Senior standing and Art 157.
Visual aesthetic materials and the psychological principles involved in aesthetic organization.

- 591. (191A.) Gallery Exhibition Design (3) I, II**
Six hours.
Prerequisite: Fifteen units of art.
Fundamental art elements and principles applied to the theories and techniques of gallery exhibition design.
- 592. (191B.) Gallery Exhibition Design (3) I, II**
Six hours.
Prerequisite: Art 591.
Advanced problems in the theories and techniques of gallery exhibition design.

GRADUATE COURSES

- 600. Drawing (3)**
Six hours.
Prerequisite: Art 500.
Projects synthesizing process and concept in visual field ordering. Maximum credit six units applicable on a master's degree.
- 604. (216A-216B.) Painting (3)**
Six hours.
Prerequisites: Art 405, 504 and 506.
Organization with visual subject matter. Maximum credit six units applicable on a master's degree.
- 609. (206A-206B.) Printmaking (1-3)**
Two hours for each unit of credit.
Advanced creative work in selected printmaking media based upon the analysis of the history and philosophies of printmaking from its inception through contemporary concepts. Maximum credit six units applicable on a master's degree.
- 616. (217A-217B.) Sculpture (3)**
Six hours.
Prerequisites: Art 516 and classified graduate standing.
Aesthetic organization of selected subject matter in the media of sculpture. Maximum credit six units applicable on a master's degree.
- 625. (219A-219B.) Crafts (1-3)**
Two hours for each unit of credit.
Prerequisite: Six units completed in upper division courses in sculpture or ceramics or printmaking or a combination of these courses.
Advanced creative work in selected craft media. Maximum credit six units applicable on a master's degree.
- 627. (221.) Advanced Clay and Glaze Technology in Ceramic Design (3)**
Six hours.
Prerequisite: Art 425.
Experimentation with the use of ceramic material and techniques as an integral part of the design process. Maximum credit six units applicable on a master's degree.
- 629. Enamel Workshop (3) I, II**
Six hours.
Prerequisite: Art 529.
Workshop in enamel technology and its application to the craft. Maximum credit six units applicable on a master's degree. (Formerly numbered Art 628.)
- 631. (270.) Seminar in Jewelry and Metalwork (3)**
Prerequisite: Art 331.
Problems in the design and execution of works in precious metals. Projects will be determined by the individual student in conference with the instructor. Maximum credit six units applicable on a master's degree.
- 634. (280.) Seminar in Textile Design (3)**
Prerequisite: Art 334.
Problems in textile design and technology. Projects will be determined by the individual student in consultation with the instructor. Maximum credit six units applicable on a master's degree.

- 641. (214.) Graphic Communication (1-3)**
Two hours for each unit of credit.
Prerequisite: Art 541.
Advanced individual study in graphic design. Maximum credit six units applicable on a master's degree.
- 650. (295.) Creative Environmental Design (1-3)**
Prerequisite: Six upper division units in interior design, architecture or city planning.
Creative work in interior design, architecture and civic design. Maximum credit six units applicable on a master's degree.
- 690. Seminar in Art History (3)**
Intensive investigation of specialized area of art history. Subject to be announced in class schedule.
- 694. (294A-294B.) Seminar in the Principles of Design in the Space Arts (3)**
Prerequisite: A semester course in art appreciation.
An intensive study of the activity of creative expression and aesthetic appreciation in the area of visual experience. The aesthetic analysis of original works of art. Maximum credit six units applicable on a master's degree.
- 700. (291.) Studio Art Experience (3)**
Six hours.
Independent research in specified areas, which may require the presentation of a paper with its oral defense.
Each course may be taken to a maximum of six units. Maximum credit six units of 700 applicable on a master's degree.
- A. Studio Art in Painting
 - B. Studio Art in Sculpture
 - C. Studio Art in Printmaking
 - D. Studio Art in Ceramics
 - E. Studio Art in Crafts
 - F. Studio Art in Graphic Communication
 - G. Studio Art in Environmental Design
- 760. (292E.) Seminar in Modern Art (3)**
Prerequisite: Art 557.
Studies in problems of the development of art styles or important artists within broad limits of modern art.
- 767. (292F.) Seminar in Primitive Art (3)**
Prerequisite: Art 559.
Studies in problems of the development of art styles or important artists within broad limits of primitive art.
- 769. (292A.) Seminar in Ancient Art (3)**
Prerequisites: Art 258 and 567 or 568.
Studies in problems of the development of art styles or important artists within broad limits of ancient art.
- 771. (292B.) Seminar in Medieval Art (3)**
Prerequisites: Art 258 and 259.
Studies in problems of the development of art styles or important artists within broad limits of medieval art.
- 773. (292C.) Seminar in Renaissance Art (3)**
Prerequisites: Art 258 and 259.
Studies in problems of the development of art styles or important artists within broad limits of renaissance art.
- 775. (292D.) Seminar in Baroque and Rococo Art (3)**
Prerequisites: Art 258 and 259.
Studies in problems of the development of art styles or important artists within broad limits of baroque and rococo art.
- 785. (222.) Seminar in Art Education (3)**
Prerequisite: Fifteen upper division units in art.
Historic and current art education philosophies.

790. (290.) Seminar in Bibliography and Research Methods (2)

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

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

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

799A. (299.) Thesis or Project (3) Cr/NC

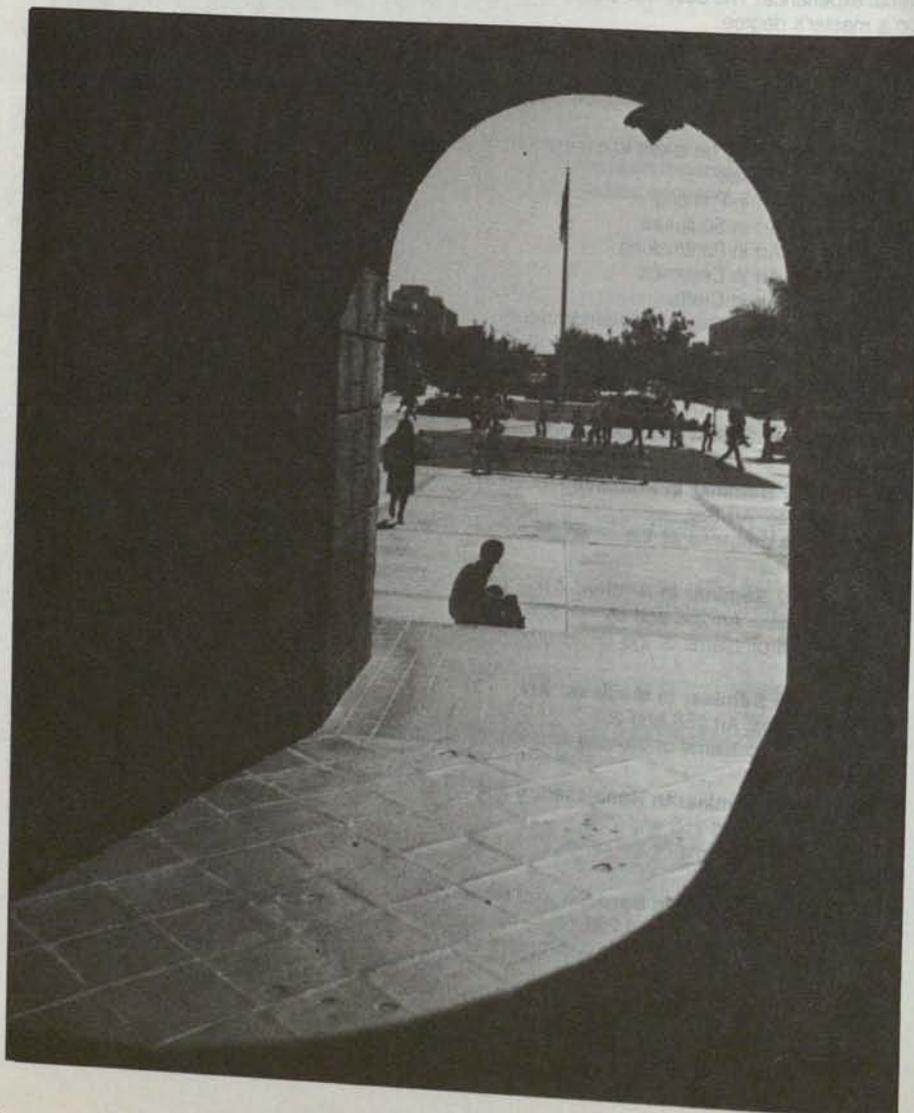
Prerequisites: An officially appointed thesis committee and advancement to candidacy.

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

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

**Asian Studies****Faculty**

Graduate Coordinator: A. D. Coox, Director, Center for Asian Studies

Graduate Advisers:

Paochin Chu, History (East Asia)

T. J. Kahng, Political Science (East Asia)

E. A. Keen, Geography (East Asia)

D. D. Whitney, Anthropology (East Asia)

Faculty members in the departments participating in the degree program are listed in the appropriate sections of this catalog.

Members of the Center for Asian Studies

A.D. Coox, Director

A. W. Anderson

L. L. Chan

P. Chu

A. B. Cottrell

T. R. Cox

D. V. DuFault

F. A. Frick

R. C. Gripp

E. Henry

R. S. Himes

G. R. Jordan

T. J. Kahng

E. A. Keen

M. Longenecker

M. C. Madhavan

D. D. McLeod

J. G. McLevie

J. E. Merrill

W. H. Nam

H. Neyndorff

R. A. Oades

K. Ogawa

B. Pillsbury

R. H. K. Schulze

L. J. Shaw

R. T. Smith, Jr.

W. S. Snyder

A. L. Srbich

P. S. Staniford

Y. Tanaka

R. D. Wallace

D. D. Whitney

C. Woo

C. C. Yahr

General Information

The Master of Arts degree in Asian Studies with an emphasis on East Asia is an interdisciplinary degree offered by designated faculty members in the Departments of Anthropology, Art, Business Administration, Classical and Oriental Languages and Literatures, Comparative Literature, Economics, Education, English, Geography, History, Philosophy, Political Science, Religious Studies, and Sociology. It is administered by the Center for Asian Studies through a Graduate Committee consisting of the Director of the Center and representatives from the several departments.

The program is designed to offer systematic advanced training (a) for those planning to enter educational, business, government, or community service involving Asian Studies, and (b) for those in a specific academic discipline who have regional interest in Asian Studies and wish to promote more effective understanding of the cultures, societies, peoples, and social forces at work in the Asian/Pacific world. The program is also designed for those who plan to pursue further graduate study in Asian Studies beyond the Master of Arts degree.

Admission to Graduate Study

In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, the student must present a Bachelor of Arts degree with a major in Asian Studies or its equivalent, as approved by the Graduate Committee of the Center for Asian Studies. A student whose preparation is deemed inadequate by the Graduate Committee will be required to complete specific courses in addition to the minimum of thirty (30) units required for the degree.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, all students must demonstrate a reading knowledge, at least at the intermediate level, of a relevant foreign language approved by the Graduate Committee of the Center for Asian Studies. If Chinese or Japanese is required, the requirement may be fulfilled by completing 16 units of course work in the particular language, the last four units with a grade of C or better.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree, as described in Part Three of this catalog, the student must complete a minimum of 30 units from courses listed below as acceptable on master's degree programs, including Asian Studies 601, with not less than 24 units in courses of Asian content, distributed as shown below. A minimum of 18 of the above 24 units shall be in courses of East Asian emphasis.

	600- and 700-numbered Courses	500-, 600- and 700-numbered Courses
Asian Studies	3 units (Asian Studies 601)	3 units
Department A	6 units	3 units
Department B	3 units	3 units
	<hr/> 12 units	<hr/> 9 units

The remaining nine of the total of 30 units will be elective, selected from the above or other relevant departments, as approved by the Graduate Committee. The total program shall include a minimum of 18 units in 600- and 700-numbered courses. The student may elect Plan A (with thesis) or Plan B (comprehensive examination in lieu of thesis) in consultation with the graduate coordinator.

All programs will be approved by the Graduate Committee of the Center for Asian Studies.

Courses Acceptable on Master's Degree Programs in Asian Studies

UPPER DIVISION COURSES

Asian Studies Course

596. Selected Studies in Asian Cultures (3)

Anthropology Courses

547. (175.) Cultures of Southeast Asia (3)
550. (186.) Cultures of India (3)
551. (191.) Chinese Society (3)*
552. (192.) Japanese Society (3)*
581. (190.) Archaeology of East Asia and Oceania (3)*

Art Course

565. (152A.) The Art of India and Southeast Asia (3)

Comparative Literature Course

530. (170.) Asian Literature (3)

History Courses

- 561A-561B. (191A-191B.) The Far East (3-3)*
562. (196A.) Civilization of India: The Great Traditions (3)
563. (196B.) The Modern Indian Subcontinent (3)
564A-564B. (190A-190B.) Southeast Asia (3-3)
566. (192.) Chinese Civilization (3)*
567A-567B. (193.) Modern and Contemporary Chinese History (3-3)*
569. (194.) Japanese Civilization (3)*
570. (195.) Modern Japan (3)*
571A-571B. (197A-197B.) Intellectual History of Modern Asia (3-3)*
596. Selected Studies in History (3)**

Philosophy Courses

575. (175.) A Major Philosopher (3)**
597. (196.) Topics in Asian Thought (3)

Political Science Courses

561. (191.) Governments and Politics of the Developing Areas (3) I, II
562. (187.) Governments and Politics of the Far East (3)*

Religious Studies Courses

501. (121A.) Religions of India (3)

Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of India, especially Hinduism and Buddhism.

503. (121B.) Religions of the Far East (3)*

Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of East Asia, especially China and Japan.

580. (180.) A Major Figure (3) I, II**

Prerequisite: Religious Studies 100 or 200, and three upper division units in religious studies.
Life, works and significance of one major figure in a religious tradition. May be repeated with new content. Maximum credit six units.

581. (181.) A Metaphysical Doctrine (3) I, II**

Prerequisites: Philosophy 102, Religious Studies 100 or 200, and three upper division units in religious studies.

Systematic study of a selected theme or problem basic to the teachings of one of the major religious traditions. May be repeated with new content. Maximum credit six units.

GRADUATE COURSES IN ASIAN STUDIES

601. Seminar in Interdisciplinary Methods (3)

Introduction to graduate research methods and presentation of findings.

690. Seminar in Asian Studies (3)

Intensive study of an aspect of Asian studies. Maximum credit six units.

797. Research (1-3) Cr/NC

Research in one of the aspects of Asian studies. Maximum credit six units applicable on a master's degree.

799A. Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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

Anthropology Courses

600. (200.) Seminar (3)**
620. (220.) Seminar in Regional Anthropology (3)**
630. (222.) Historical Linguistics (3)**

Art Course

609. (206A-206B.) Printmaking (1-3)**

Business Administration Courses

654. (228.) Seminar in International Finance (3)**
723. (286.) Seminar in Comparative Management (3)**
765. (252.) Seminar in Marketing Channels and Physical Distribution (3)**
769. (255.) Seminar in International Marketing (3)**

*Course always applicable toward the minimum of 18 units of East Asian emphasis required for the master's degree program.
**Acceptable when of relevant content.

*Course always applicable toward the minimum of 18 units of East Asian emphasis required for the master's degree program.
**Acceptable when of relevant content.

Economics Courses

635. (210.) Seminar in Economic History (3)**
 660. (292.) Seminar in International Economics (3)**
 665. (295.) Seminar in the Economics of Underdeveloped Countries (3)**
 728. (208.) Seminar in Development Planning (3)**

Education Course

683. (204.) Comparative Education (3)**

Geography Courses

610. (210.) Seminar in History of Geography (3)**
 620. (220.) Seminar in Regional Geography (3)**
 650. (250.) Seminar in Systematic Geography (3)**

History Courses

601. (201.) Seminar in Historical Method (3)***
 650. (243.) Directed Reading in Asian History (3)
 655. (253.) Seminar in Asian History (3)
 795. (296.) Area Studies in History (3)**

Linguistics Course

795. (295.) Seminar in Linguistics (3)**

Philosophy Courses

635. (235.) Seminar in Philosophy of Religion (3)**
 636. (236.) Seminar in Philosophy of Art (3)**
 795. (295.) Seminar in Selected Topics (3)**

Political Science Courses

655. (280.) Seminar in General Comparative Political Systems (3)**
 658. (284.) Seminar in Communist Political Systems (3)**
 661. (282.) Seminar in the Political Systems of the Developing Nations (3)**
 675. (270.) Seminar in International Relations (3)
 685. (275.) Seminar in Theories of International Relations (3)**

Sociology Course

770. (270.) Seminar in Population and Demography (3)**

All 797 (Research) and 798 (Special Study) courses in named departments, when relevant, are also applicable upon approval by the Graduate Committee.

Refer to graduate course descriptions in the sections of this catalog under the appropriate departments.

*Courses always applicable toward the minimum of 18 units of East Asian emphasis required for the master's degree program.
 **Acceptable when of relevant content.
 ***Required of all students who offer history as Department A, except that Asian Studies 601 is an acceptable substitute.

Astronomy**Faculty**

Chairman, Department of Astronomy: B. Nelson
 Graduate Adviser: J.D. Schopp
 Professors: Daub, Nelson, Schopp, Young
 Associate Professor: Angione
 Assistant Professor: Talbert

Assistantships

Graduate teaching assistantships in astronomy are available to a few qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Astronomy, in the College of Sciences, offers graduate study leading to the Master of Science degree in Astronomy.

This degree is designed to augment the student's undergraduate training with three or four semesters of more advanced study in the field of astronomy and the associated fields of mathematics and physics. San Diego State University has excellent facilities. A 24-inch reflecting telescope and two 16-inch reflecting telescopes, equipped with photoelectric photometers and a spectrograph, are located at Mount Laguna Observatory 40 miles east of campus, at an elevation of 6,100 feet. An 8-inch photographic refractor of long focus and several other telescopes, ranging from 6 to 12 inches in aperture, are located on campus. Campus computing facilities include an IBM 360/50 and an IBM 1130 digital computer.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, the student must have an overall grade point average of at least 2.75 in the last 60 units of his undergraduate work and must have preparation in astronomy and related sciences substantially equivalent to that required for the bachelor's degree in astronomy at San Diego State University. Students transferring to San Diego State University must submit two letters of recommendation.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as specified in Part Three of this catalog. In addition, students may be required to take a qualifying examination during their first semester of residence.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must also meet the following departmental requirements in his 30-unit program:

1. Complete at least 15 units of 600- and 700-numbered courses in astronomy not including 799A.
2. Complete at least nine units of graduate level or approved upper division courses in astronomy or related fields as approved by his departmental committee.
3. If a student elects Plan A, he must enroll in Astronomy 799A, Thesis. If a student, with the approval of the department, elects Plan B, he must complete at least three additional units of graduate level or approved upper division courses in astronomy or related fields and pass a final comprehensive examination in lieu of the thesis.
4. Complete six units of electives selected with approval of the adviser.
5. A reading knowledge of scientific French, German, or Russian is recommended. Facility with a scientific computing language is desirable.

Courses Acceptable on Master's Degree Programs in Astronomy

UPPER DIVISION COURSES

- 520. Solar System Astronomy (3)**
Prerequisites: Astronomy 101 and Physics 197, 197L.
Study of the structures of the planets, their atmospheres and satellite systems, asteroids, comets, and meteoroids, and the interplanetary medium, including the sun's influence in the system.
- 596. (196.) Advanced Topics in Astronomy (2 or 3) I, II**
Prerequisite: Consent of instructor.
Selected topics in theoretical astronomy or astrophysics. May be repeated with new content upon approval of instructor. Maximum credit six units.

GRADUATE COURSES

- 600. (200.) Seminar (2 or 3)**
Prerequisite: Consent of instructor.
An intensive study in advanced astronomy, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 610. (210.) Binary Stars (3)**
Prerequisite: Astronomy 312B.
An intensive study of visual, spectroscopic, and eclipsing binaries, including the determination of orbits.
- 617. Astronomical Photometry (3)**
Prerequisites: Astronomy 304B and 312B.
Theory and techniques of photographic and photoelectric photometry in ground-based astronomy. Emphasis on problems of precise measurement and use of modern high speed equipment in photo counting and data acquisition systems.
- 620. (220.) Galactic Structure (3)**
Prerequisite: Astronomy 312B.
Survey of basic observational data for determining the structure of the Milky Way Galaxy; luminosity functions, stellar distributions in and near the galactic plane, solar motion, kinematics and dynamics of stellar motions, and galactic rotation; introduction to stellar dynamics.
- 630. (230.) Stellar Interiors (3)**
Prerequisite: Astronomy 312B.
Structure of the interior of stars including the details of the reactions by which energy is obtained and the evolution of stars.
- 640. (240.) Interstellar Matter (3)**
Prerequisites: Astronomy 312B and Mathematics 530.
Interstellar absorption and polarization, theory of interstellar grains, physics of a low density gas in a dilute radiation field, nebulae, interstellar absorption lines, dynamics of the interstellar medium, and radio observations of the interstellar medium.
- 650. (250.) Stellar Atmospheres (3)**
Prerequisite: Astronomy 312A.
Emission and absorption of radiation, continuous spectra, spectral lines, model stellar atmosphere calculations, and non-L.T.E. problems.
- 660. (225.) Extragalactic Structure (3)**
Prerequisite: Astronomy 312B.
The individual and collective properties of normal and peculiar galaxies. Topics include classification, spectra, masses, luminosity distributions, distance indicators, clustering, and redshifts.
- 670. (170.) Astrophysical Spectroscopy (3)**
Prerequisites: Mathematics 152 and credit or concurrent registration in Astronomy 312A.
Theory of atomic spectra and atomic structure leading to interpretation of astronomical spectra. Optics of spectrograph design; line identification, spectral classification, radial velocity measurement, and line profile analysis.
- 797. (297.) Research (1-3) Cr/NC**
Prerequisite: Classified graduate standing.
Research in one of the fields of astronomy. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

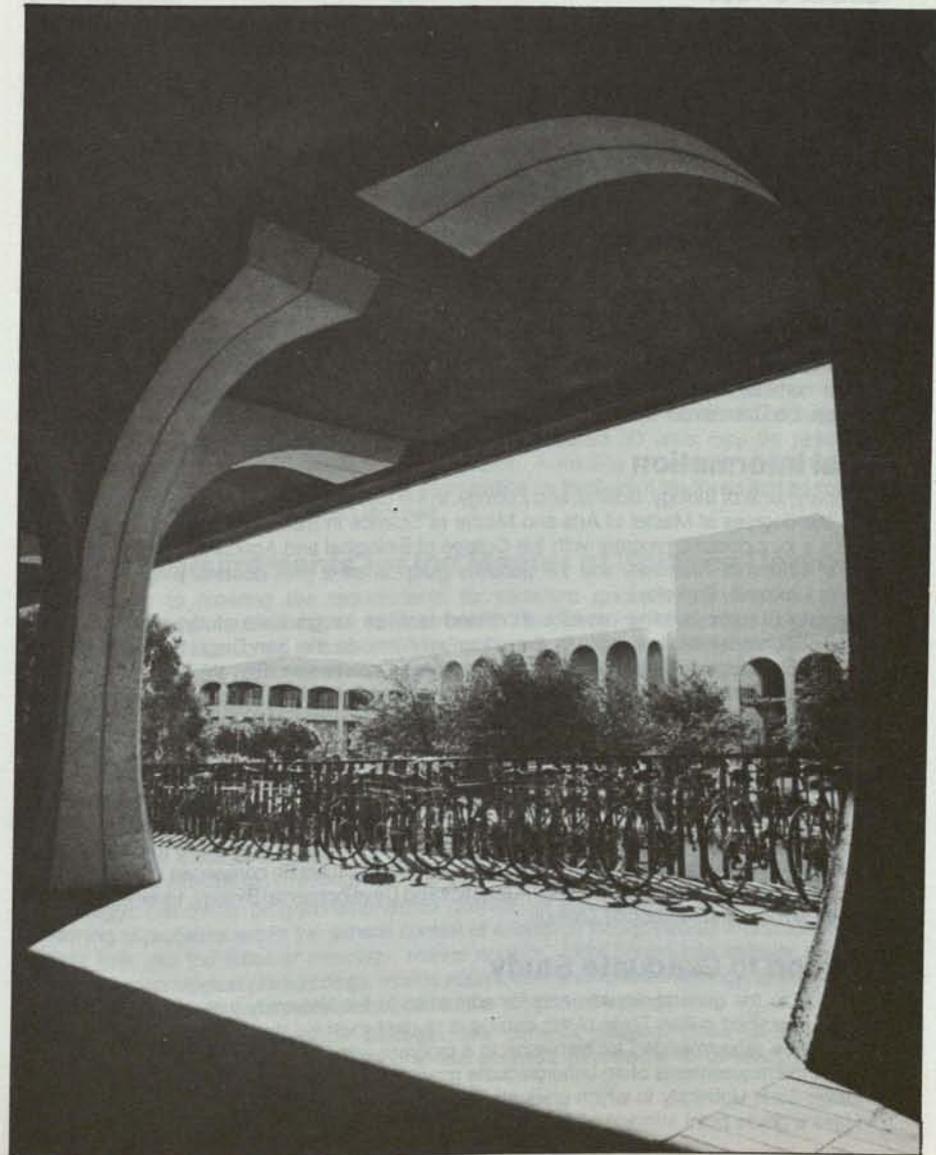
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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



Biological Sciences

(Biology, Botany, Zoology Courses)

Faculty

Chairman, Department of Biology: A. S. Baer
 Chairman, Department of Botany: D. L. Rayle
 Chairman, Department of Zoology: M. D. Atkins
 Coordinator, Master's Degree Programs: K. D. Johnson
 Graduate Departmental Advisers for General Counseling:

Botany: H. L. Wedberg

Ecology: W. Hazen

Genetics: D. Futch

Invertebrate Zoology: N. McLean, Jr.

Physiology: S. Krisans

Vertebrate Zoology: R. Estes

Credential Adviser: D. Hunsaker

Professors: Atkins, Baer, Bohnsack, Brandt, Carpenter, Chen, Clark, Cohn, Collier, B.D., Collier, G., Cooper, C.F., Cox, Dexter, Ebert, Estes, Etheridge, Farris, Ford, Gallup, Hazen, Huffman, Hunsaker, Johnson, A.W., Krisans, Kummerow, McBlair, McLean, Miller, Monroe, Neel, Olson, Paolini, Parsons, Ratty, Rayle, Rinehart, Schapiro, Shepard, Sloan, Taylor, Wedberg, Wilson

Associate Professors: Alexander, Awbrey, Cooper, R.W., Daugherty, Diehl, Futch, Hurlbert, Johnson, K. D., Krekorian, Plymale, Steenbergen, Thwaites, Zedler, P.H.

Assistant Professors: Avila, Barnett, Carmichael, Davis, Dukepoo, Mauriello, Zedler, J.B.

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in biology are available to a limited number of qualified students. Application blanks and additional information may be secured from the Coordinator of the Biology Graduate Program.

General Information

The departments of Biology, Botany, and Zoology, in the College of Sciences, offer graduate study leading to the degrees of Master of Arts and Master of Science in Biology. In addition, the ecology group offers a joint doctoral program with the College of Biological and Agricultural Sciences at the University of California, Riverside, and the genetics group offers a joint doctoral program with the University of California, Berkeley.

A new Life Science building provides increased facilities for graduate study in the biological sciences. Additional facilities available in the community include the San Diego Zoo Hospital, the United States Department of Agriculture, Fish and Game Commission, Sea World, and the Naval Underseas Center. San Diego State University also has access to research sites in Descanso, Fortuna Mountain, and Temecula (Riverside County).

Section I: Master's Degree Programs

The Master of Arts degree is considered to be essentially an academic degree which is planned to serve as a stepping stone to a higher degree, if the student so desires. The Master of Science degree is an applied or more technical degree, but is also acceptable as preparatory to many more advanced degree programs. Study concentration for either of these degrees must be completed in one of the following six program areas: Botany, Ecology, Genetics and Developmental Biology, Invertebrate Zoology, Physiology, and Vertebrate Zoology.

Admission to Graduate Study

In addition to the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, a student must satisfy the following requirements before he will be recommended for admission to a program with classified standing:

1. Meet the requirements of an undergraduate major in a biological sciences department at San Diego State University in which graduate work is contemplated.
2. Have a grade point average of 2.75 or better on work taken for the baccalaureate degree.

3. Have a grade point average of 3.0 or better in upper division courses (at least 24 units) in the biological sciences.
4. Have a score of 1100 or better on the Graduate Record Examination Aptitude Test.
5. Have a score above the 60th percentile rank on the Graduate Record Examination Advanced Test in Biology. The student should take this test during the last semester in his undergraduate major in biological sciences.
6. Be considered as capable of graduate work in the biological sciences by two references submitted to the Biology Coordinator of Master's Degree Programs.
7. Be accepted by a program area and be sponsored by a faculty member of the area.

NOTE: Admission to a program area within the biology graduate program will be limited to the number of students for which adequate facilities and faculty sponsorship are available. Students should, therefore, be as specific as possible in their indication of their research interests and career goals. Individual program areas will admit students solely on the basis of merit in relation to space and faculty availability.

Students who do not meet all of the above requirements for admission with classified graduate standing may be admitted with conditionally classified graduate standing at the discretion of the program area. Students so admitted will be advised as to the nature of their deficiency and the time to be allowed to achieve full classified graduate standing.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Three of this catalog. Satisfactory progress on the thesis research will be prerequisite to obtaining departmental approval for advancement.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences as listed below or from closely related fields. At least 15 of the units selected must be in 600- and 700-numbered courses including course 799A, Thesis. A maximum of six units of the required 30 units may be selected from acceptable courses offered in the School of Education. A reading knowledge of scientific French, German, Russian, or Spanish, and a final oral examination on the field of the thesis and its implications in the broad fields of biology are also required.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences as listed below or from closely related fields. At least 15 of the units selected must be in 600- and 700-numbered courses including course 799A, Thesis. A maximum of six units of the required 30 units may be selected from acceptable courses offered in the School of Education. A final oral examination on the field of the thesis and its implication in the broad fields of biology is also required.

Master's Degree Program Areas

Botany: The areas of emphasis for graduate study in the botany program area include plant morphology and physiology, mycology and plant pathology, phycology, and plant evolution.

Ecology: The overall program emphasizes quantitative approaches to ecological research and the framing of problems within the general context of ecological theory. Faculty and student research currently falls into the areas of limnology, marine ecology, plant community ecology and primary productivity, physiological plant ecology, marine aquaculture and fisheries ecology, animal population ecology and energetics, ecosystems management, and systems ecology.

Genetics and Developmental Biology: The genetics program offers an opportunity for graduate study in population genetics, biochemical genetics, developmental genetics, cytogenetics, and mutagenesis.

Invertebrate Zoology: The emphasis of this program area is based on the study of invertebrates as whole organisms. Faculty and graduate student research interests are diverse but include such areas as the functional morphology and ecology of marine invertebrates, entomology and pest management, invertebrate behavior and navigation, invertebrate symbiosis and parasitology, and invertebrate embryology.

Physiology: The major subareas of interest represented by the faculty in the physiology program area include comparative cellular physiology (especially osmoregulation, immunology, nitrogen metabolism, and sensory reception), radiation biology and radioisotope techniques, nerve and muscle physiology, and biochemistry of nucleic acids.

Vertebrate Zoology: The emphasis of the vertebrate program area is to provide students with a broad background in all areas of vertebrate biology. The major subareas for graduate study include the general biology and natural history of vertebrates, vertebrate ecology, systematics, morphology, paleontology and evolution, vertebrate physiology, and vertebrate behavior.

Section II: Joint Doctoral Programs

Ecology*

The ecologists in the cooperating faculties for the doctoral program in ecology represent a broad spectrum of ecological specializations.

In general, research within the ecology program area at San Diego State University is concentrated in the following major areas:

1. Analysis and modeling of the dynamics of aquatic and terrestrial ecosystems.
2. Physiological ecology of plants, particularly of the Mediterranean zone, desert and Arctic tundra.
3. Population dynamics of aquatic and terrestrial animals.
4. Relations between ecological processes and the technological, social, and economic factors affecting environmental quality.

At the University of California, Riverside, ecologists are working on:

1. Physiological ecology of desert animals and of desert plants.
2. Population ecology and population genetics.
3. Evolutionary aspects of ecology relating to distribution and speciation.

Normally, a candidate for the Doctor of Philosophy degree in Ecology will be expected to have a bachelor's degree from an accredited institution with a major in the biological sciences. Courses of study should include: genetics, physiology or biochemistry, ecology, a minimum of one year of inorganic chemistry, one semester of organic chemistry, and one year of physics. Mathematics through two courses in calculus and two years of a modern foreign language (German, Russian or French) are advised. Other majors in related fields may be considered for admission to the doctoral degree program in ecology.

Upon admission to the program, the student is guided by the requirements for the doctoral program given in Part Three of this catalog. The student will normally spend his first year in the program completing his year of residency at the University of California, Riverside. It is desirable for the student to complete his foreign language requirements and his qualifying examination during this year and to be advanced to candidacy.

Staff

Faculty members of the staff in ecology of the cooperating institutions who will act as principals in the doctoral program in ecology and be available for direction of research and as members of doctoral committees are as follows:

San Diego State University:

Graduate Adviser: J. B. Zedler
Principals: Atkins, Carpenter, Clark, Cohn, B. D. Collier, C. F. Cooper, Cox, Dexter, Ebert, Etheridge, Farris, Ford, Hazen, Hurlbert, A. W. Johnson, Miller, Sloan, J. B. Zedler, P. H. Zedler

Genetics

Both San Diego State University and the University of California, Berkeley, cover a wide range of specialized fields in genetics in which the student may prepare himself for his qualifying examination or, in greater depth, for his research. At San Diego, the specific fields best represented are population genetics, radiation genetics, physiological and developmental genetics, and cytogenetics. At Berkeley, the fields are population genetics, evolution, biochemical and developmental genetics, human genetics, and cytogenetics.

An undergraduate major in genetics or its equivalent in biological sciences can be considered as standard preparation for admission to the doctoral program in genetics, although completion of additional courses in mathematics and statistics, language, physical chemistry and biochemistry, and in biology generally are helpful and will often reduce the time required for the doctoral program. Other majors in related fields may be considered for admission to the doctoral degree program in genetics.

On admission to the program, the student is guided by the requirements for the doctoral degree program given in Part Three of this catalog. The student will normally spend his first year in the program completing his year of residency at the University of California, Berkeley. It is desirable for the student to complete his foreign language requirement, if any, and his qualifying examination during this year and to be advanced to candidacy.

Staff

The following faculty members of the genetics groups of the cooperating institutions will act as principals in the doctoral program, being available for direction of research and as members of doctoral committees.

University of California, Berkeley:

Graduate Adviser: J. Fristrom
Principals: Brown, Fogel, Fristrom, Libby, Jr., Palmour, St. Lawrence, Spieth

San Diego State University:

Graduate Adviser: D. Futch
Principals: Awbrey, Baer, Barnett, Daugherty, Davis, Diehl, Futch, Johnson, Kelly, Ratty, Rinehart, Taylor, Thwaites, Wedberg

Courses Acceptable on Master's Degree Programs

UPPER DIVISION COURSES

Biology Courses

505. (161.) History of Biology (3) I, II

Prerequisite: A college course in biology.
Lectures and reports tracing scientific development of biology with emphasis on the influence of personalities and trends of the times.

519. (175.) Statistical Methods in Biology (3) I

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

520. (110.) Ecology (4) I, II

Two lectures and six hours of laboratory.
Prerequisites: Biology 215 and Chemistry 200, 200L, 201, 201L.
Relationships between organisms and the environment; field study in local marine, fresh water, mountain, chaparral, and desert habitats.

521. (114.) Advanced Ecology (3) I, II

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

*The University is negotiating to transfer the joint doctoral program in ecology from the University of California at Riverside to the University of California at Davis.

525. Agricultural Ecology (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Biology 320 or 520.

Mechanisms controlling fertility, productivity and regulation in agricultural ecosystems. The ecological design and management of agroecosystems.

528. Ecology of Renewable Resources (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Biology 320, 420 or 520.

Ecological principles in exploitation and management of forest, range, watershed and recreation lands for sustained human benefit.

530. (111.) Limnology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 520 and Chemistry 200, 200L, 201, 201L.

Biological, chemical and physical considerations of inland waters.

531. (113.) Biological Oceanography (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 520, Physics 124A, Zoology 150. Application for collecting permit must be made at least six weeks before class begins at the Center for Marine Studies (AS-111).

Ecological concepts as applied to pelagic and benthic marine organisms and their environment. Field and laboratory experience in oceanographic techniques, particularly the coastal environment.

532. (112.) Fisheries Biology (3) II

Two lectures and three hours of laboratory.

Prerequisite: Biology 520.

Fisheries of commercial importance. The dynamics of exploited populations.

535. (121.) Systems Ecology (4)

Three lectures and three hours of laboratory.

Prerequisites: Calculus, Biology 520 and consent of instructor.

Theory and techniques of systems analysis and mathematical modeling as applied to ecological problems.

536. (122.) Environmental Measurement (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Biology 520 and consent of instructor.

The utilization of electronic equipment to record ecological data under field conditions, including field power supplies, effects of fluctuations in environmental conditions, types of sensors, amplifiers and data recorders, and the interfacing of components.

537. (123.) Advanced Systems Ecology (4)

Three lectures and three hours of laboratory.

Prerequisites: Biology 535 and consent of instructor.

Advanced topics in the application of mathematical modeling and simulation techniques to analyses of ecological problems.

540. (155.) Genetics (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 215.

Principles of plant and animal genetics with experiments and demonstrations illustrating the mechanisms of heredity.

541. (156.) Developmental Biology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 540 and Chemistry 230, 230L or 231, 231L. Recommended: Biology 560.

Analysis of development with emphasis on embryonic differentiation.

544. (158.) Human Genetics (4) I, II

Two lectures and six hours of laboratory.

Prerequisite: Biology 540.

Genetics as related to human biology, with consideration of the applied fields of medical genetics, genetic counseling, and population studies.

545. (157.) Cytogenetics (4) I

Two lectures and six hours of laboratory.

Prerequisite: Biology 540.

The physical basis of heredity. Study of the chromosomes and chromosome behavior in relation to problems in heredity and evolution.

546. (171.) Mutagenesis (3)

Prerequisite: Biology 540.

Basic principles and applications of mutation induction, expression, and detection at all levels of biological organization. Emphasis on mutation induction by chemicals and ionizing radiations.

547. (163.) Microbial Genetics (3) I, II

Prerequisite: Biology 540.

Theory underlying microbial genetics.

548. (172.) Behavioral Genetics (3) I, II

Prerequisite: Biology 540.

The genetic involvement of single and multiple gene systems in animal behavior.

549. (160.) Evolution and Population Genetics (3) I, II

Prerequisite: Biology 540.

Theory of evolution and modeling of genetic systems.

550. (169.) Ecological Genetics (3) I, II

Prerequisites: Biology 520 and 540.

Theory of adaptations of natural populations to their environments.

559. (173.) Advanced Genetics (3) I, II

Prerequisite: Biology 540.

Current topics in molecular, organismal or population genetics. Maximum credit six units.

560. (101.) Cellular Physiology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 215; Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L; Physics 115A-115B, or 124A-124B and 125A-125B, or 195, 195L, 196, 196L, 197, 197L.

Physiological processes at the cellular level.

561. (181.) Advanced Cellular Physiology (3) I, II

Prerequisite: Biology 560.

Current topics in cellular physiology.

562. (142A.) Comparative Animal Physiology I (3)

Prerequisite: Biology 560.

Feeding and digestion, blood and circulation, nutrition, respiration and metabolism, excretion and osmoregulation. Considerations of function from molecular to organismal levels. Major phyla are considered. (Formerly numbered Biology 562A.)

562L. (142A.) Comparative Animal Physiology Laboratory I (2)

Six hours of laboratory.

Prerequisites: Biology 560; credit or concurrent registration in Biology 562.

Directed laboratory projects emphasizing the design of experiments in physiological research. Emphasis on topics presented in Biology 562. (Formerly numbered Biology 562A.)

563. (142B.) Comparative Animal Physiology II (3) II

Prerequisite: Biology 560.

Membrane excitability and transport processes; nerve conduction, muscle contraction, sensory reception and integration. Considerations of function from molecular to organismal levels. (Formerly numbered Biology 562B.)

563L. (142B.) Comparative Animal Physiology Laboratory II (2) II

Six hours of laboratory.

Prerequisites: Biology 560; credit or concurrent registration in Biology 563.

Directed laboratory projects stressing topics presented in Biology 563. (Formerly numbered Biology 562B.)

564. (144.) Comparative Endocrinology (3) I, II

Prerequisite: Biology 560, Botany 530, Microbiology 320, or Zoology 540. Recommended: Biology 563; Chemistry 361A-361B or 560A-560B.

Endocrine mechanisms at cellular, organismic, and population levels in plants and animals.

564L. (144L.) Comparative Endocrinology Laboratory (2) II

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 564.

Standard and recent experiments with endocrine systems in vertebrate and invertebrate animals; analysis of mechanisms of hormone action; the role of pheromones in behavioral responses; the effects of auxins on plant growth.

566. (148.) Photophysiology (3) II

Prerequisite: Biology 560.

Bioluminescence and the physiological effects of visible and ultraviolet radiations on plants and animals.

566L. (148L.) Photophysiology Laboratory (1) II

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 566.

The generation, measurement and control of visible and ultraviolet radiations, and the measurement and analysis of selected biological effects of these radiations.

568. (182.) Immunochemistry (3) I, II

Prerequisite: Biology 560 or Microbiology 330.

Structure and function of the immunoglobulins and the chemical and physical nature of the antigen-antibody reaction.

568L. (182L.) Immunochemistry Laboratory (1) I, II

Prerequisite: Credit or concurrent registration in Biology 568.

The characterization of the immunoglobulins and the measurement of the antigen-antibody reaction.

570. (150.) Radiation Biology (3) I, II

Prerequisites: Biology 100, 100L; Physics 124A-124B and 125A-125B. Recommended: Biology 560; Chemistry 200, 200L, 201, 201L; and Physics 303.

Principles underlying radiological reactions of ionizing radiations. Effects of ionizing radiations at the biochemical, cell, organ, and organism levels.

570L. (150L.) Radiation Biology Laboratory (2) I, II

Six hours of laboratory.

Prerequisite: Credit or concurrent registration in Biology 570.

The laboratory determination of the effects of ionizing radiation on biological systems.

571. (151.) Radioisotope Techniques in Biology (3) I, II

One lecture and six hours of laboratory.

Prerequisites: Biology 215; Chemistry 200, 200L, 201, 201L; Physics 115A-115B, or 124A-124B and 125A-125B. Recommended: Biology 560 and Chemistry 250 or 251.

The principles and application of radioisotopes in biology. Radionuclide measurement, safe handling, tracer and radioautography techniques.

572. Physiology of Human Systems (3) I, II

Prerequisites: Biology 100, 100L; Chemistry 200, 200L; 230, 230L or 231, 231L; Physics 115A-115B, or 124A-124B and 125A-125B, or 195, 195L, 196, 196L, 197, 197L.

Intended for students majoring in one of the natural sciences or engineering. Not open to students with credit in Biology 261 or 362.

Survey of basic themes in human physiology, presented at the cellular and organ system levels. Topics include membrane transport, nerve excitation, muscle contraction, hormone function, cardiovascular physiology, renal function, immunology, and sensory reception and integration.

580. (109.) Regional Field Studies in Biology (1-3)

One- to three-week periods during vacations and summer sessions.

Prerequisites: At least twelve units in the biological sciences, including Biology 100 and 100L, and consent of instructor. Application for collecting permit must be made at least six weeks before class begins at the Center for Marine Studies (AS-111).

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

Botany Courses**500. (100.) General Botany (4) I, II**

Three lectures and three hours of laboratory.

Prerequisites: Biology 100 and 100L.

Primarily for majors in the biological sciences. Structure, physiology, reproduction and evolution of the major plant groups.

501. (101.) Phycology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 100 and 100L.

Morphology and phylogenetic relationships of the algae.

502. (102.) Mycology (4) I, II

Two lectures and six hours of laboratory.

Prerequisites: Biology 100 and 100L.

The structure, food relations, and classification of fungi.

503. (103.) Vascular Plants (4)

Two lectures and six hours of laboratory.

Prerequisites: Biology 100 and 100L.

Structure, development and phylogenetic relationships of the bryophytes and vascular plants.

511. (111.) Advanced Phycology (3)

One lecture and six hours of laboratory.

Prerequisite: Botany 501.

Physiology, ecology, culture and economic aspects of the algae. Maximum credit six units with three units applicable on a master's degree.

514. (114.) Plant Taxonomy (4) II

Two lectures and six hours of laboratory, field trips.

Prerequisite: Biology 540.

The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.

526. (126.) Plant Pathology (4)

Two lectures and six hours of laboratory.

Prerequisites: Biology 100 and 100L. Recommended: Botany 502.

A practical course dealing with the principles of disease in plants, control measures, and quarantine procedures. Emphasis is placed on the determination and control measures of those pathogenic organisms which affect crops, trees and shrubs and nursery stock.

530. (130.) Plant Physiology (4)

Two lectures and six hours of laboratory.

Prerequisites: Biology 100, 100L, Chemistry 200, 200L, 201, 201L, and 230, 230L, or 231, 231L.

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

532. (132.) Plant Metabolism (3)

Prerequisite: Botany 530 or Biology 560.

An examination of metabolic pathways in plants and their regulation and control.

533. (133.) Experimental Plant Metabolism (2)

Six hours of laboratory.

Prerequisites: Credit or concurrent registration in Botany 532 and consent of instructor.

Experimental approaches to the study of plant metabolism and development.

540. (140.) Plant Anatomy (4) II

Two lectures and six hours of laboratory.

Prerequisites: Biology 100 and 100L. Recommended: Botany 500.

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

562. (162.) Agricultural Botany (2)

Field trips to be arranged.

Prerequisites: Biology 100 and 100L. Recommended: Botany 500 or Zoology 521.

California crop plants, their general identification, cultural methods, and regional distribution.

572. (172.) Palynology (3) I

One lecture and six hours of laboratory.

Principles and methods of pollen and spore diagnosis, with reference to use in taxonomy, paleontology, anthropology, and medicine.

596. (196.) Selected Topics in Botany (2-3)

Prerequisite: Consent of instructor.

Selected topics in classical and modern botany. May be repeated with new content. Maximum credit six units with three units applicable on a master's degree.

Zooology Courses

- 503. (103.) Embryology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 150 and 160, or 506.
Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.
- 506. (106.) Comparative Anatomy of the Vertebrates (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
Dissection, study and comparison of organ systems of representative vertebrates.
- 508. (108.) Histology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L. Recommended: Microbiology 310 or Zoology 108 or 160.
Descriptive microscopic anatomy of cells, tissues and organs of mammals with special emphasis on humans.
- 510. (112.) Marine Invertebrate Zoology (4)**
Two lectures and six hours of laboratory.
Prerequisites: Biology 520 and Zoology 150.
Ecology, morphology, behavior and physiology of marine invertebrates. Frequent field trips to local marine environments.
- 515. (115.) Ichthyology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 160 or 506.
Identification, systematics, evolution, structure, physiology, behavior and ecology of fishes.
- 516. (116.) Herpetology (4)**
Two lectures and six hours of laboratory.
Prerequisites: Consent of instructor.
The origin, evolution, distribution and systematics of amphibians and reptiles of the world.
- 517. (117.) Ornithology (4)**
Two lectures, six hours of laboratory or field excursions, and a field project.
Prerequisites: Biology 100 and 100L and consent of instructor.
The study and identification of birds, especially those of the Pacific Coast and the San Diego region.
- 518. (118.) Mammalogy (4) II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 160 or 506.
The evolution, systematics, distribution and ecology of mammals of the world.
- 521. (121.) General Entomology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Biology 100 and 100L.
Structure, physiology, natural history and classification of insects.
- 522. (122.) Special Topics in Entomology (3)**
Two lectures and three hours of laboratory.
Prerequisite: Zoology 521.
Treatment of some aspect of entomology, such as biological control, microbial control or forest entomology, not covered in regularly scheduled courses. Maximum credit nine units. Maximum credit six units applicable on a master's degree.
- 523. (123.) Immature Insects (3)**
Two lectures and three hours of laboratory.
Prerequisite: Zoology 521.
Collection, preservation, identification and biological study of the immature stages of the different insect orders. Course designed to meet the needs of students specializing in invertebrate zoology, agricultural and medical entomology, parasitology, and systematics.
- 524. (124.) Insect Ecology (4)**
Two lectures and six hours of laboratory.
Prerequisites: Biology 520, and Botany 500 or 503. Recommended: Zoology 150 or 521.
Ecological principles as applied to insects, including consideration of crop ecosystems in relation to insect and mite outbreaks.

- 525. (125.) Economic Entomology (4) II**
Two lectures and six hours of laboratory.
Prerequisites: Zoology 150 or 521 (preferred), and Botany 503. Recommended: This course be followed by Zoology 527.
Course designed for students of agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Quarantine measures are also studied.
- 526. (126.) Medical Entomology (4) I**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 150 or 160 or 521 (preferred), or Microbiology 310.
The role of insects and other arthropods in the transmission and causation of human diseases and the important diseases of domesticated animals.
- 527. (127.) Insect Control (2)**
Prerequisites: Zoology 521, Botany 500 or 503. Recommended: Zoology 525 or 526.
A review of methods of reducing insect populations, including chemical, cultural, biological and legislative control.
- 528. (131.) Insect Physiology (4) I**
Two lectures and six hours of laboratory.
Prerequisites: Zoology 521 or an upper division course in physiology, and Chemistry 230, 230L or 231, 231L.
Description, theory and experimental analysis of all major physiological processes in insects.
- 529. (129.) Principles of Pest Management (3)**
Two lectures and three hours of laboratory.
Prerequisites: Botany 500 or 503 or 562; Zoology 521 and 524. Recommended: Zoology 525.
Systematic analysis and synthesis of all suitable techniques known to reduce and maintain pest populations at levels below economically important injury in forestry and agriculture, based on firm ecological principles.
- 530. (130.) Advanced Invertebrate Zoology (3)**
One lecture and six hours of laboratory.
Prerequisite: Zoology 150.
Selected topics in advanced invertebrate zoology. May be repeated with new content. Maximum credit six units.
- 535. (128.) Parasitology (4) I, II**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 150 or Microbiology 310.
Study of animal parasites with special reference to those of man. Laboratory including identification of important parasites of man, and collection and preservation of local forms.
- 540. (140.) Physiological Zoology (4) I, II**
Three lectures and three hours of laboratory.
Prerequisites: Zoology 160 or 506, and Chemistry 231, 231L.
A comparative and evolutionary study of the functions of organ systems and their environmental significance.
- 555. (155.) Principles of Taxonomy, Systematics and Phylogeny (4)**
Two lectures and six hours of laboratory.
Prerequisite: Any one of the following: Zoology 150, 160, 506, Botany 501, 502, 503.
Basis for the classification of organisms. Modern concepts and their application in zoology. Specific problems in laboratory and field.
- 560. (160.) Lower Vertebrate Paleontology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of nonmammalian vertebrates, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included.
- 561. (161.) Mammalian Paleontology (4)**
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of mammals, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included. Zoology 561 need not follow in sequence with Zoology 560.

570. (170.) Animal Behavior (4) I, II

Two lectures and six hours of laboratory.
Prerequisites: Zoology 150 and 160 or Psychology 210 and 260 and consent of instructor.
Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of behavior.

571. Hormonal Aspects of Behavior (3)

Prerequisites: Biology 560 or Zoology 540.
Chemoregulatory mechanisms operating within multicellular organisms will be discussed; the structural and chemical components of regulatory systems will be examined in terms of their behavioral effects on the organism.

580. Aquaculture (3)

Prerequisites: Consent of instructor, Biology 520, and any one of the following: Zoology 150, 160, or 506.
Principles and practices of the farming of aquatic organisms.

GRADUATE COURSES IN BIOLOGY**600. (200.) Seminar (2-3)**

Prerequisite: Consent of instructor.
An intensive study in advanced biology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

610. (231.) Seminar in Ethology and Comparative Psychology (3)

(Same course as Psychology 761.)
Prerequisite: Biology 520, or Psychology 414 or 417, or Zoology 570, and consent of the graduate adviser.
Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.

615. (250.) Biogeography (3)

Prerequisite: Biology 520 or 549.
Concepts and principles of the distributional history of plant and animal groups, and the origins and dispersal of modern faunas and floras.

620. (242.) Population and Community Ecology (3)

Two lectures and three hours of laboratory.
Prerequisite: Biology 520.
Formulation, analysis and experimental testing of the theories of the structure and dynamics of ecological systems at the population and community level.

621. (243.) Physiological Ecology (3)

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

622. (246.) Behavioral Ecology (3)

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

625. (244.) Physical Aspects of Ecology (3)

Two lectures and three hours of laboratory.
Prerequisite: Biology 520.
Analysis and measurement of physical factors of the environment and of the processes by which energy and matter are exchanged between organisms and the environment; the significance of the physical environment in ecological processes.

626. (245.) Aquatic Ecology (3)

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

630. (240.) Seminar in Terrestrial Ecology (2)

Prerequisite: Biology 520.
Ecological concepts as applied to the terrestrial environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

631. (241.) Seminar in Aquatic Ecology (2)

Prerequisite: Biology 520.
Ecological concepts as applied to the fresh water and marine environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

640. (270.) Seminar in Genetics (2)

Prerequisite: Biology 540.
Maximum credit four units applicable on a master's degree.

643. (222.) Morphogenesis (3)

Prerequisites: Biology 541 and 560.
Regulation of pattern formation in developing systems; cell migration, cell division, cell death, dependent differentiation.

649. (230.) Speciation (3)

Prerequisites: Biology 520 and 540, or 549.
Concepts and principles of the origin of species.

651. (276.) Physiological Genetics (3)

Prerequisites: Biology 540 or 544; Chemistry 231 and 231L. Recommended: Chemistry 361A-361B.
Biochemical aspects of genetics of microbial and human systems.

660. (210.) Seminar in Cellular Physiology (2)

Prerequisites: Biology 560 and consent of instructor.
Maximum credit four units applicable on a master's degree.

661. (260.) Seminar in General Physiology (2)

Prerequisite: Biology 560.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

662. (263.) Seminar in Comparative Physiology (2)

Prerequisites: Biology 562, 562L or 563, 563L and consent of instructor.
Comparative aspects of function at the molecular through organismal levels. Maximum credit four units applicable on a master's degree.

663. (261.) Seminar in Environmental Radiation (2)

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

670. (262.) Cytoplasmic Inheritance (3)

Prerequisites: Biology 540, 560 and consent of instructor.
Literature and techniques related to research in non-Mendelian genetics.

671. (264.) Methods in Physiology (2)

Six hours of laboratory.
Prerequisite: Biology 560.
Current methods employed in physiological measurements. Maximum credit four units applicable on a master's degree.

672. (265.) Molecular Biophysics (3)

Prerequisites: Biology 560 and Mathematics 122.
The description and analysis of biological processes and systems in terms of the properties of molecules and of basic principles.

697. (291.) Investigation and Report (3)

Analysis and research techniques in biology.

790. (290.) Bibliography (1)

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

797. (297.) Research (1-3) Cr/NC

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

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

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

897. Doctoral Research (3-6) Cr/NC

Prerequisite: Admission to the doctoral program.
Independent investigation in the general field of the dissertation.

899. Doctoral Dissertation (3-6) Cr/NC

Prerequisite: An officially constituted dissertation committee and advancement to candidacy.
Preparation of the dissertation for the doctoral degree.

GRADUATE COURSES IN BOTANY**600. (200.) Seminar (2-3)**

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.

601. (201.) Seminar in Phycology (2)

Prerequisite: Botany 501.
Recent developments in phycology. Maximum credit four units applicable on a master's degree.

602. (202.) Seminar in Mycology (2)

Prerequisite: Botany 502.
Current problems in the taxonomy, morphology or physiology of the fungi. Maximum credit four units applicable on a master's degree.

603. (203.) Seminar in Vascular Plants (2)

Prerequisite: Botany 503.
Problems in the evolution of the vascular plants. Maximum credit four units applicable on a master's degree.

614. (214.) Seminar in Systematic Botany (2)

Prerequisite: Botany 514.
Current problems in the systematics of vascular plants. Maximum credit four units applicable on a master's degree.

626. (226.) Seminar in Plant Pathology (2)

Prerequisite: Botany 526.
Advanced topics in the biology of plant pathogens. Maximum credit four units applicable on a master's degree.

630. (230.) Seminar in Plant Physiology (2)

Prerequisite: Botany 530.
Current investigations in one of the areas in plant physiology. Maximum credit four units applicable on a master's degree.

797. (297.) Research (1-3) Cr/NC

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

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for a master's degree.

799B. Thesis or Project Extension (0) Cr/NC

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

GRADUATE COURSES IN ZOOLOGY**600. (200.) Seminar (2-3)**

An intensive study in advanced zoology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

610. (201.) Seminar in Marine Zoology (2)

Prerequisite: Biology 520.
Recent developments in marine zoology. Maximum credit four units applicable on a master's degree.

620. (206.) Seminar in Vertebrate Morphology (2-3)

Current problems in the descriptive, functional and evolutionary anatomy of vertebrates. Maximum credit six units applicable on a master's degree.

630. (209.) Seminar in the Biology of Cold-blooded Vertebrates (2-3)

Prerequisite: Zoology 160 or 506.
Biology of ectothermic animals. Maximum credit six units applicable on a master's degree.

640. (210.) Seminar in the Biology of Warm-blooded Vertebrates (2-3)

Prerequisite: Zoology 160 or 506.
Biology of endothermic animals. Maximum credit six units applicable on a master's degree.

650. (211.) Animal Energetics (3)

Prerequisite: An upper division course in physiology. Recommended: A course in calculus and one in biochemistry.

Energy transformation in animals to include the physiology of starvation, animal energetic efficiency, nutrition, and temperature regulation.

660. (212.) Advanced Marine Invertebrate Zoology (3)

One lecture and six hours of laboratory.
Prerequisite: Zoology 510.
Selected topics in advanced marine invertebrate zoology. Maximum credit six units applicable on a master's degree.

670. (215.) Advanced Lower Vertebrate Zoology (2-4)

See class schedule for lecture-laboratory format.
Prerequisites: Either Zoology 515 or 516, depending on specific topic announced in class schedule.

Advanced treatment of ichthyology or herpetology. May be taken twice with new content for maximum credit of eight units. Maximum credit eight units applicable on a master's degree.

675. Advanced High Vertebrate Zoology (2-4)

Prerequisites: Either Zoology 517 or 518, depending on specific topic announced in class schedule.

Advanced treatment of ornithology or mammalogy. May be taken twice with new content for a maximum of eight units. Maximum credit eight units applicable on a master's degree.

680. (222.) Advanced Entomology (3)

Two lectures and three hours of laboratory.
Prerequisite: Zoology 521, Biology 520, Botany 500 or 503.
Advanced treatment of some phase of entomology such as physiology, morphology, toxicology or systematics. Topic to be announced in the class schedule. May be repeated with new content. Maximum credit six units applicable on a master's degree.

690. (290.) Bibliography (1)

The use of basic reference books, journals, pertinent bibliographies preparatory to the writing of a master's thesis.

791. (291.) Research Techniques (3)

Prerequisite: Consent of graduate adviser.
Analysis of research techniques in zoology.

797. (297.) Research (1-3) Cr/NC

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

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

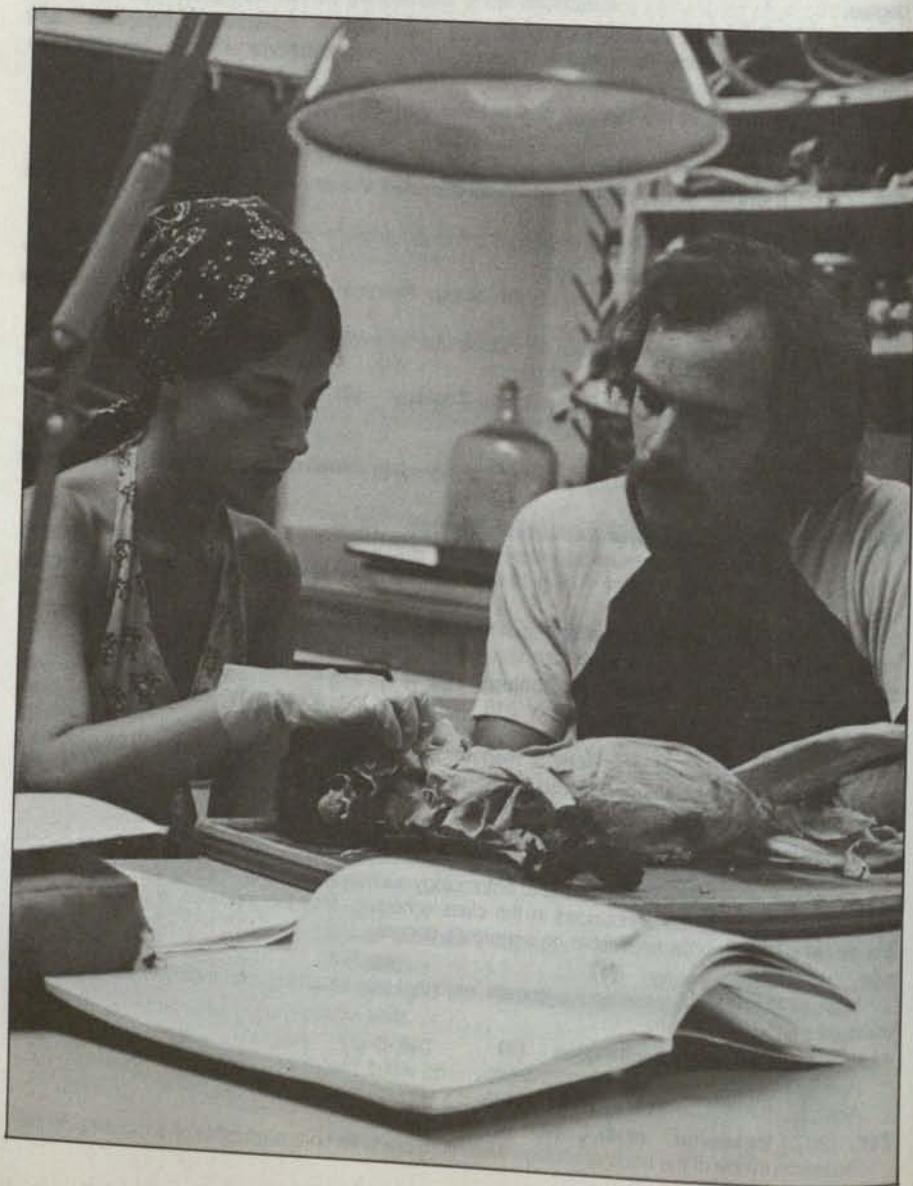
799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Business Administration

Faculty

Dean, School of Business Administration: R. P. Hungate
 Associate Dean, School of Business Administration: M. L. Crawford
 Associate Dean for Graduate Study in Business Administration: W. F. Barber
 Chairman, Department of Accounting: A. R. Bailey
 Chairman, Department of Finance: P. A. Vandenberg
 Chairman, Department of Information Systems: W. E. Spaulding
 Chairman, Department of Management: W. R. Sherrard
 Chairman, Department of Marketing: R. D. Darley
 Graduate Advisers:

Accounting: V. E. Odmark, R. A. Samuelson
 Finance: R. Hutchins, B. M. Neuberger, W. W. Reints
 Information Systems: M. L. Crawford, W. E. Spaulding
 International Business: G. K. Sharkey
 Management: T. J. Atchison, L. H. Peters
 Management Science: W. R. Sherrard
 Marketing: J. Vidali, T. R. Wotruba
 Production and Operations Management: A. L. Srbich
 Real Estate: E. Cowan, J. Short

Professors: Archer, Atchison, Bailey, Barber, Belasco, Belcher, Brodshatzer, Crawford, Darley, Galbraith, Ghorpade, Haas, Hale, Hampton, Harned, Hippaka, Hungate, Hutchins, Langenbach, Lightner, Lindgren, McFall, Meier, Mitton, Neuberger, Nye, Odmark, Peters, Pierson, Reints, Reznikoff, Sharkey, Sherrard, Snudden, Srbich, Straub, Vandenberg, Wijnholds, Williamson, Wotruba

Associate Professors: Beatty, Block, H. Fisher, Hesse, Meigs, Settle, Short, Smith, Spaulding, Vanier

Assistant Professors: Belch, Boschken, Cowan, Feeney, R. Fisher, Hatch, Lane, Mitry, Sachdeva, Samuelson, Stimson, Toole, Vidali, Whittenberg, Wilbur

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in business administration are available to a limited number of qualified students. Application blanks and additional information may be secured from the Dean of the School of Business Administration.

General Information

The School of Business Administration offers graduate study leading to the Master of Business Administration degree and to the Master of Science degree in Business Administration. The major goals in the master's degree curriculum are to educate the students for general management positions, for management of the functional areas of business, and for executive responsibilities in organizations having close relationships with business activities. The School of Business Administration is a member of the American Assembly of Collegiate Schools of Business.

The Master of Business Administration degree is designed to provide a broad education in business for the student with either a business or a nonbusiness undergraduate degree. The Master of Science degree in Business Administration is designed to provide additional education and specialization in business subjects for the student who has an undergraduate degree in one of the business subject fields. The master's degree programs with a major in business administration have been accredited by the American Assembly of Collegiate Schools of Business.

Entrance requirements for the two master's degree curricula are the same. Either degree is available to any student regardless of previous education, provided the requirements of the degree are met.

All students considering graduate work in business are advised to seek further details from the Associate Dean for Graduate Studies in the School of Business Administration prior to applying for admission.

Close contacts with large and small firms, both local and national, enhance the business student's education. The generous cooperation of local business and government organizations provides opportunities for research and observation for graduate students. The continued professionalization of the business executives' responsibilities has created many opportunities for the student with an advanced degree in business administration.

Bureau of Business and Economic Research

The Bureau of Business and Economic Research is an organized research activity serving the needs of the School of Business Administration and the Department of Economics. Operationally, it is a part of the School of Business Administration, with a director and a policy committee. 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) compile local and regional data; (5) publish the results of Bureau research investigations and aid the faculty in publication of research. Graduate students are encouraged to make use of Bureau facilities.

Admission to the Graduate Program in the School of Business Administration

A student seeking admission to either of the master's degree curricula offered in the School of Business Administration should make application in the manner set forth in Part Three of this catalog.

All students must be eligible for classified graduate standing prior to enrolling in any graduate (600- or 700-numbered) course. Students are granted classified graduate standing if they (1) have maintained a 2.50 grade point average over the last 60 semester units of work attempted and (2) have a combination of the Graduate Management Admissions Test (GMAT) score and an overall undergraduate grade point average on the following scale:

Undergraduate GPA	GMAT Score
3.0 or above	450
2.75	475
2.50	500
2.25	525
2.00	550

Points in between are rated on a comparable scale.

Transcripts and test scores must be on file at San Diego State University sufficiently in advance of the expected date of registration for a decision to be made. Details concerning the GMAT may be obtained from the Test Office, San Diego State University, or by writing to the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey 08540.

Master of Business Administration Degree

Admission to the Degree Curriculum

Regulations governing admission to the University and to the School of Business Administration are outlined above and in Part Three of this catalog. For admission to the curriculum for the Master of Business Administration degree there are no specific prerequisite courses.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Four of this catalog.

Specific Requirements for the Master of Business Administration Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete an approved program of studies containing between 30 and 60 units of 600- and 700-numbered courses. The exact number of units for each student will depend on the extent of his previous work in business administration. Students with no previous course work in business administration or related fields will normally be expected to complete 60 units. Students with an undergraduate degree in business administration from a professionally accredited school will normally be expected to complete 30 units. Up to nine units of course work may be accepted for transfer. Transfer courses must be strictly graduate courses taken in a professionally accredited graduate program.

At least 21 of the total units required must be completed in residence at San Diego State University, and at least nine units of program courses must be completed after advancement to candidacy.

The requirements for the degree are as follows:

1. Complete each of the following twelve courses for which an equivalent has not been satisfactorily completed:

- B.A. 600 Financial Accounting (3)
- B.A. 601 Organization Theory (3)
- B.A. 602 Quantitative Methods I (3)
- B.A. 604 Law for Business Executives (3)
- B.A. 605 Marketing (3)
- B.A. 609 Computer Programming and Systems Analysis (3)
- B.A. 610 Managerial Accounting (3)
- B.A. 611 Behavior in Organizations (3)
- B.A. 612 Quantitative Methods II (3)
- B.A. 615 Financial Principles and Policies (3)
- B.A. 616 Managerial Economics (3)
- Econ. 603 Economic Analysis (3)

Satisfactory completion means that the student's grade in each equivalent course must be "C" or better and that the course must have been completed within ten years prior to the first course completed on his master's degree program.

2. Complete the following two courses required of all students:

- B.A. 620 Research and Reporting (3)
- B.A. 726 Seminar in Policy Formulation (3)

3. Complete 18 units in the following two categories of concentration and electives:

- a. Concentration: No more than 15 units in one of the concentrations listed below, three units of which must include Business Administration 799A, Thesis (Plan A), or Business Administration 790, Directed Readings in Business Administration. Students choosing the Directed Readings option must then pass a comprehensive examination in their last semester of course work in lieu of the thesis (Plan B).

Concentrations available:

- Accounting
- Finance
- Human Resources Administration
- Information Systems
- International Business
- Management
- Management Science
- Marketing
- Production and Operations Management
- Real Estate

b. Electives: At least three units in course work outside the concentration.

The distribution of the 18 units between concentration and electives, and the specific courses in each category, are to be determined by the student and graduate adviser in consultation.

4. Electives, if needed, to total at least 30 units.
5. Not more than a total of six units in courses 797, Research, and 798, Special Study, combined, will be accepted for credit toward the degree.
6. For regulations concerning grade point averages, final approval for the granting of the degree, award of the degree, and diplomas, see the section entitled "Basic Requirements for the Master's Degree," in Part Three of this catalog.

Master of Science Degree in Business Administration

Admission to the Degree Curriculum

In addition to meeting the requirements for classified graduate standing in the University and admission to the School of Business Administration, as described above, and in Part Three of this catalog, the student must have satisfactorily completed the following courses or their equivalents before enrolling in 600- and 700-numbered courses listed on the official master's degree program:

- B.A. 212, Principles of Accounting (4)
- B.A. 140, Business Law (3)
- B.A. 180, Information Processing and Computer Programming (3)
- Econ. 101-102, Principles of Economics (6)
- Econ. 201, Statistical Methods, or
 - Math 119, Elementary Statistics (3)
 - Math 120, Mathematics for Business Analysis (3)
- B.A. 301, Quantitative Analysis for Business, or
 - B.A. 302, Quantitative Methods (3)
- B.A. 323, Fundamentals of Finance (3)
- B.A. 350, Management and Organization (3)
- B.A. 370, Marketing Principles (3)

The following additional courses or their equivalents must have been satisfactorily completed for an Accounting Concentration before enrolling in 600- and 700-numbered courses listed on the official master's degree program:

- B.A. 310, Intermediate Accounting (4)
- B.A. 311, Financial Accounting Theory (4)
- B.A. 312, Managerial Cost Accounting (4)

Satisfactory completion means that the student's grade in each course must be "C" or better and that the course must have been completed within ten years prior to the first course completed on his master's degree program. In addition, the student's adviser may request satisfactory completion of additional prerequisite courses in the student's proposed field of concentration.

Notice of admission to a curriculum with classified graduate standing will be sent to the student by the Graduate Division Office only upon the recommendation of the School of Business Administration.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this catalog.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing as described above and the general requirements for master's degrees as described in Part Three of this catalog, the student must complete a graduate program of 30 approved units including at least 21 units in 600- and 700-numbered courses. Business Administration 799A, Thesis, is required. Business Administration 616, Managerial Economics, is required unless the student has completed sufficient advanced economics courses as a part of his undergraduate preparation. At least 24 units must be in business administration and economics. Not more than a total of six units in courses 797, Research, and 798, Special Study, may be accepted for credit toward the degree.

The following concentrations are available:

- | | |
|--------------------------------------|--|
| 1. Accounting | 6. Management |
| 2. Finance | 7. Management Science |
| 3. Human Resources
Administration | 8. Marketing |
| 4. Information Systems | 9. Production and Operations
Management |
| 5. International Business | 10. Real Estate |

For regulations concerning grade point averages, final approval for the granting of the degree, award of the degree, and diplomas, see the section entitled "Basic Requirements for the Master's Degree," in Part Three of this catalog.

Courses Acceptable on Master's Degree Programs in Business Administration

GRADUATE COURSES

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

600. (200.) Financial Accounting (3)

Basic concepts and principles of financial accounting; accounting as a data processing system; measurement of business income; financial statements.

601. (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.

602. (202A.) Quantitative Methods I (3)

Measure of central tendency and variation, sampling and various statistical tests such as analysis of variance, F, t, and X^2 tests. Simple and multiple correlation.

604. (204.) Law for Business Executives (3)

Development, significance, and interrelationships of law and business. Analysis of essential aspects of law pertaining to business including materials from the law of contracts, sales, agency, business organizations, property, negotiable instruments, secured transactions. Effects of government regulation of labor and business.

605. (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 370.

609. (209.) Computer Programming and Systems Analysis (3)

Prerequisite: Business Administration 602.
Fundamentals of computers, problem-oriented computer language, flow-charting logic and techniques, analysis of the synthesis of computer-based systems.

610. (208.) Managerial Accounting (3)

Prerequisite: Business Administration 600.
Accounting in relation to the decision-making process; various cost systems; relevancy of various cost concepts; direct costing, flexible budgets, distribution costing; break-even analysis; capital budgeting; and other techniques of management planning and control.

611. (201B.) Behavior in Organizations (3)

Prerequisite: Business Administration 601.
Nature of the human resource in organizations. Analysis of organizational systems and managerial actions to direct and control human behavior.

612. (202B.) Quantitative Methods II (3)

Prerequisite: Business Administration 602.
The design of statistical experiments and various operations research techniques such as simulation, linear programming, queuing theory, and Markov chain analysis.

615. (205.) Financial Principles and Policies (3)

Prerequisite: Business Administration 600.
Finance and financial institutions as they relate to the firm and the flow of funds. Emphasis on the supply of and demand for capital; principles and tools of business finance; money and capital markets.

616. (206.) Managerial Economics (3)

Prerequisite: Economics 603.
Role of economic theory in management analysis and decision. Study of demand, cost, and supply theories from a business viewpoint.

620. (207.) Research and Reporting (3)

Prerequisite: Business Administration 612.
Principles of research design and data accumulation. The analysis and effective presentation of data related to business and industry.

- 630. (210.) Theory and Analysis of Financial Statements (3)**
Prerequisite: Business Administration 600.
The theories, principles and concepts underlying financial statements; measurement and presentation of enterprise resources, liabilities and income in accordance with generally accepted accounting principles.
- 631. Concepts and Problems of Financial Reporting (3)**
Prerequisite: Business Administration 630.
Special problem areas in the reporting of corporate assets and equities; emphasis upon pronouncements of regulatory bodies such as the Financial Accounting Standards Board and the Securities and Exchange Commission.
- 632. (211.) Advanced Accounting (3)**
Prerequisite: Business Administration 630.
Principles and concepts as related to the measurement, determination, and presentation of resources, equities, and income of parent and affiliated companies; concepts of fund accounting; specialized reporting for partnership formation, income distribution, and liquidation.
- 633. (212.) Income Tax Accounting (3)**
Prerequisite: Business Administration 630.
Provisions of the federal tax law, including preparation of returns for individuals, partnerships, corporations, estates, trusts; procedures for reporting deficiency assessments, refunds, and other administrative practices.
- 634. (213.) Auditing (3)**
Prerequisite: Business Administration 632.
Critical analysis of the application of auditing principles in verification of financial statements; review of AICPA and SEC bulletins and regulations; consideration of professional ethics, audit standards, procedures, sampling techniques, and report writing; trends and developments in auditing profession.
- 635. Seminar in Taxation (3)**
Prerequisite: Business Administration 633.
Theoretical and accounting treatment of selected topics in taxation.
- 637. (214.) Seminar in Accounting Information Systems (3)**
Prerequisites: Business Administration 610 and 612.
Systems design and related controls. Emphasis on mathematics, statistics, and computers in planning and reporting.
- 638. (215.) Seminar in Managerial Accounting (3)**
Prerequisite: Business Administration 610.
Managerial cost accounting concepts and procedures, including budgetary planning, cost control, advisory functions, measurement of divisional profitability, product pricing, and investment decisions.
- 639. (219.) Seminar in Accounting Theory (3)**
Prerequisite: Business Administration 632.
Historical development of accounting principles and theory; problems in valuation, income determination, and statement presentation.
- 650. (223.) Seminar in Business Finance (3)**
Prerequisite: Business Administration 615.
Application of principles of finance to current problems in financial management, with emphasis on planning and development of tools for use in decision making. Consideration of case materials, study of the literature, and development of individual student reports.
- 651. (224.) Seminar in Investments (3)**
Prerequisite: Business Administration 615.
Examination of firms from an investment point of view; historical and current developments affecting investment values; sources of information; techniques of analysis; measurement of risks, returns, and investment values.
- 652. (226.) Seminar in Security Analysis and Portfolio Management (3)**
Prerequisites: Business Administration 609 and 651.
Security valuation and price forecasting. Portfolio management theory. Risk management and reduction analysis. Establishment of performance objectives.
- 653. (227.) Seminar in Quantitative Analysis for Financial Decisions (3)**
Prerequisites: Business Administration 609, 612 and 615.
Quantitative techniques and the computer as employed to optimize financial decisions.
- 654. (228.) Seminar in International Business Finance (3)**
Prerequisite: Business Administration 615.
International finance applied to the business firm.
- 655. (229.) Seminar in Financial Markets (3)**
Prerequisite: Business Administration 615.
Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.
- 670. (240.) Seminar in Manpower Planning and Staffing (3)**
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
Theories and models of manpower planning; inventorying and forecasting of manpower needs and requirements; labor force analysis; recruitment; the staffing process; measurement tools and techniques.
- 671. (241.) Seminar in Union-Management Relations (3)**
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
Interaction of unions and business organizations with emphasis on collective bargaining. Effects on management and society. Trends in collective bargaining and in the organization of employees.
- 672. (242.) Seminar in Compensation (3)**
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
The organizational process of compensating employees. Compensation theory from economics, psychology, and sociology. Compensation systems and their effects on organizations and individuals.
- 673. (243.) Seminar in Organizational Development (3)**
Prerequisite: Business Administration 611, or one of the following: Economics 680, Psychology 622, Public Administration 630, Sociology 720.
The process of developing human resources and organizations. Theories of organizational development; tools and techniques, analysis of manpower and organizational development programs.
- 679. (249.) Seminar in Human Resources Administration (3)**
Prerequisite: Business Administration 611 or six units in Human Resources Administration.
Analysis of issues and application of behavioral science theory in acquiring, developing, rewarding, and utilizing human resources.
- 680. (273.) Computer Hardware and Software Systems (3)**
Prerequisite: Business Administration 609.
Computer architecture, programming languages, programming systems, and operating systems.
- 681. (274.) Seminar in Information Theory (3)**
Prerequisite: Business Administration 609.
Data structures, data communications, computer-centered information networks, and addressing and indexing schemes.
- 682. (275.) Seminar in Measurement and Control of Information Systems (3)**
Prerequisites: Business Administration 680 and 681.
Information systems models, information utility, performance measurement, applications and systems evaluations, and computer-based adaptive control concepts and organization.
- 683. (276.) Seminar in Advanced Information Topics (3)**
Prerequisite: Business Administration 681.
Self-reproducing automata, artificial intelligence, self-organizing information systems.
- 688. (278.) Seminar in Management of Information Systems (3)**
Prerequisite: Business Administration 681.
Advanced information systems. Emphasis on current managerial trends and developments and on individual student research.
- 689. (279.) Seminar in Data Systems Design (3)**
Prerequisites: Business Administration 612 and 681.
Research in the analysis and design of data processing systems.
- 700. (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.

- 705. Seminar in Estate Planning (3)**
Prerequisite: Business Administration 615.
The scope and nature of estate planning. Identification and analysis of the environmental factors and those aspects of federal and state law affecting estate planning and taxation. Estate taxation and social policy.
- 710. (222.) Seminar in World Business Environment (3)**
Prerequisite: Economics 603.
The nature, dimensions and motives of International Business. Impact of environmental factors. The nature of the multinational corporation, the importance of national and multilateral controls and policies for International Business management.
- 720. (281.) Seminar in Behavioral Sciences for Management (3)**
Prerequisite: Business Administration 611.
Applications of findings from behavioral sciences to management problems and decisions. Study of organization cultures and subcultures. Impact of human behavior on the enterprise.
- 721. (282.) Seminar in Group Processes and Leadership (3)**
Prerequisite: Business Administration 611.
Perceptions and processes in work groups. Experience in interpersonal networks, influence and rewards, stereotypes; managing differences and conflicts.
- 722. (283.) Seminar in Organizations and the Social Environment (3)**
Prerequisite: Business Administration 611.
Societal forces underlying the American industrial system: modern corporations and their historical antecedents, the organization man, the role of technology and the political economy in industrial society.
- 723. (286.) Seminar in Comparative Management (3)**
Prerequisite: Business Administration 611.
Concepts, theories, techniques, and practices of management in various countries.
- 724. (288.) Seminar in the Entrepreneur (3)**
Prerequisite: Business Administration 611.
Examination of the entrepreneurial approach; concepts, theory and techniques of managerial innovation and implementation; analysis of entrepreneurial skills.
- 726. (284.) Seminar in Policy Formulation (3)**
Prerequisites: Advancement to candidacy and consent of instructor.
Building and maintaining enterprises in our society; determining objectives; developing policies and plans for achievement; measuring and controlling organizational activities; reappraising objectives and policies on the basis of new developments.
- 728. (285.) Seminar in Business Planning (3)**
Prerequisites: Business Administration 601, 605, 615, and nine units in Business Administration courses numbered 630 or above.
Strategic decision making, long-range forecasting, and corporate planning with major emphasis on product-market relationships.
- 729. (289.) Seminar in Organization and Management (3)**
Prerequisite: Business Administration 611.
Analysis of problems in business and other organizations. Organization and decision theory and contemporary developments in management science are emphasized.
- 740. (236.) Seminar in Operations Research: Deterministic Systems (3)**
Prerequisites: Business Administration 609 and 612.
Mathematical optimization techniques for deterministic systems. Advanced topics in linear programming; nonlinear, dynamic, and integer programming; selected examples of application.
- 741. (237.) Seminar in Operations Research: Stochastic Systems (3)**
Prerequisites: Business Administration 609 and 612.
Use of probability and statistical decision theory for decision making under conditions of uncertainty. Markov processes, queuing theory, and the theory of games.
- 742. (238.) Seminar in Computer Applications in Operations Research (3)**
Prerequisite: Business Administration 740.
Computer simulation techniques for analysis of complex decision problems. Implementation of optimization algorithms through use of the digital computer.
- 743. (239A.) Seminar in Management Science: Theory (3)**
Prerequisite: Business Administration 740.
Examination of recent developments in management science/operations research theory and methodology.
- 744. (239B.) Seminar in Management Science: Application (3)**
Prerequisite: Business Administration 740.
Quantitative techniques for managerial planning and decision making. Applications of operations research and other concepts to industrial situations.
- 745. (287.) Seminar in Quantitative Forecasting and Planning (3)**
Prerequisite: Business Administration 740 or 741.
Mathematical approach to intermediate and long-range forecasting of economic and technological variables which affect the firm. Development of solution algorithms and heuristic procedures for solution of dynamic planning problems.
- 748. Seminar in Applied Multivariate Statistics for Business (3)**
Prerequisite: Business Administration 612.
Applications of various multivariate techniques such as factor analysis, multiple regression, judgment analysis, hierarchical grouping, multiple discriminant analysis, multivariate analysis variance, canonical correlation.
- 749. Seminar in Applied Behavioral Measurement (3)**
Prerequisite: Business Administration 602 and 611.
Measurement procedures useful in analyzing such areas as leadership, job satisfaction, attitudes, motivation, etc. Development and use of scaling strategies including Likert, Thurstone, Guttman, paired-comparison, forced-choice, semantic-differential, and review of existing instruments used in business-related settings.
- 750. (230.) Production and Operations Management (3)**
Prerequisite: Business Administration 612.
Theory, concepts and decision analysis related to effective utilization of major factors of production in manufacturing and service industries. Utilizes the system approach to achieve unification of the production elements in terms of both analysis and synthesis. Not open to students who have credit for a basic course in production management.
- 751. (231.) Seminar in Methods Engineering and Job Design (3)**
Prerequisite: Business Administration 750.
Use of industrial engineering for management decisions—job simplification and motion economy; micromotion analysis, time standards and determination, performance rating, allowances, statistical work measurement, learning curves, formula construction, machine interference and the establishment of production times from standard data.
- 752. (232.) Seminar in Quality Control (3)**
Prerequisite: Business Administration 750.
Statistical techniques for controlling quality, reliability and maintainability; types of control and limit charts.
- 753. (233.) Seminar in Operations Planning and Control Systems (3)**
Prerequisite: Business Administration 750.
Analysis and design of single- and multiple-product integrated production and inventory control systems. Combined detailed and aggregate planning of operations with deterministic or stochastic demand over finite and infinite horizon.
- 754. (234.) Seminar in Production and Operations Management (3)**
Prerequisite: Business Administration 750.
Case studies of selected industries, emphasizing integration of the manufacturing and operations functions with the major goals of the organization.
- 760. (256.) Seminar in Consumer Behavior (3)**
Prerequisite: Business Administration 605.
The study of consumer behavior in relation to marketing strategy and the changing environment of business.
- 761. (251.) Seminar in New Products Marketing (3)**
Prerequisite: Business Administration 605.
The study of new products management in relation to planning and implementation of marketing strategy.

762. Seminar in Advertising Management (3)

Prerequisite: Business Administration 605.

Advertising and sales promotion in relation to the planning and implementation of marketing strategy.

763. (254.) Seminar in Sales Management (3)

Prerequisite: Business Administration 605.

Sales management and personal selling decisions and strategies in business organizations.

764. (253.) Seminar in Marketing Price Policy (3)

Prerequisite: Business Administration 605.

Study of pricing strategy and price determination in business organizations.

765. (252.) Seminar in Marketing Channels and Physical Distribution (3)

Prerequisite: Business Administration 605.

Analysis of marketing channels and physical distribution systems in domestic and international trade.

766. (259.) Seminar in Market Analysis and Research (3)

Prerequisites: Business Administration 605 and 612.

Application of statistical and mathematical methods to market problems, consumer research, and product analysis.

767. (257.) Seminar in Industrial Marketing Management (3)

Prerequisite: Business Administration 605.

The management of marketing decisions and strategies peculiar to the industrial market.

768. (258.) Seminar in Industrial and Government Procurement Management (3)

Prerequisites: Business Administration 601 and 605.

Procurement methods used in industry and government; internal departmental operations, interrelationships with other departments; supplier selection, pricing/cost analysis; contract negotiations, special characteristics of government procurement.

769. (255.) Seminar in International Marketing (3)

Prerequisite: Business Administration 605.

The impact of cultural, social, political, economic, and other environmental variables on international marketing systems and the decision-making process of multinational marketing operations.

770. (250.) Seminar in Marketing and the Economy (3)

Prerequisite: Business Administration 605.

Advertising, selling, sales promotion, and merchandising as they relate to society, business and the economy.

780. Seminar in Real Estate and Urban Development (3)

Prerequisite: Business Administration 616 or Economics 603.

Real estate market functions and operations. Real estate finance and appraisal theories and approaches. Models of urban land use and urban development. Issues in real estate decision-making.

783. Seminar in Real Estate Finance and Investment (3)

Prerequisite: Business Administration 780.

Theories and factors governing the financial functions of lenders, business and governmental agencies in real estate lending operations. Analysis of real estate investment by financial institutions, corporations, individuals and government.

784. (264.) Seminar in Real Property Valuation (3)

Prerequisite: Business Administration 780.

Economic principles of valuation. Data collection, analyses and correlation. The Cost, Market, and Income Approaches. New Appraisal Technology. Special Purpose Appraising.

785. Seminar in Urban Land Policy (3)

Prerequisite: Business Administration 780 or City Planning 610 or Economics 758 or Geography 570.

Relationship between private and public role players in urban land allocation and utilization. Problems arising from private market land use decisions. Current and future policy alternatives such as land use controls, urban growth policies and housing programs.

786. Seminar in Housing Development (3)

Prerequisite: Business Administration 780 or City Planning 610 or Economics 758 or Geography 655.

The nature of the building industry. Demand characteristics. The local housing market. Low and moderate income housing developments. New housing technology. Government incentives and constraints. Environmental considerations. The role of the private investor and housing developer.

789. (261.) Seminar in Current Urban Land Issues (3)

Prerequisite: Business Administration 780.

Current problems in real property. Regional land use planning. (Formerly numbered and titled Business Administration 781, Seminar in Real Estate.)

790. (290.) Directed Readings in Business Administration (3)

Prerequisite: Advancement to candidacy.

Preparation for the comprehensive examination for those students in the M.B.A. program under Plan B.

795. (295.) Seminar in Selected Topics (3)

Selected areas of concern in business administration; topic to be announced in the class schedule.

Maximum credit six units applicable on a master's degree.

797. (297.) Research (3) Cr/NC

Prerequisite: Advancement to candidacy.

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

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units applicable on a master's degree.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Chemistry

Faculty

Chairman, Department of Chemistry: W. D. Jones
 Graduate Adviser: R. W. Isensee
 Credential Adviser: J. G. Malik
 Professors: Abbott, Bennett, Cobble, Grubbs, Hellberg, Jensen, Jones, Malley, Mathewson, O'Neal, Richardson, Ring, Roeder, Sharts, Stewart, Wadsworth, Walba, Woodson
 Associate Professors: Coffey, Dahms, Lebherz

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in chemistry are available to a limited number of qualified students. Application blanks and additional information may be secured from the Graduate Adviser in the Department of Chemistry.

General Information

The Department of Chemistry, in the College of Sciences, in cooperation with the Department of Chemistry, University of California, San Diego, offers a program of graduate study leading to the Doctor of Philosophy degree in Chemistry. This degree is awarded jointly by the Board of Regents of the University of California and the Board of Trustees of the California State University and Colleges in the names of the University of California, San Diego, and San Diego State University.

Graduate programs leading to the Master of Arts degree in Chemistry and the Master of Science degree in Chemistry are also offered.

The facilities, staff, and equipment of the Department of Chemistry meet the requirements of the American Chemical Society, and students obtaining the A.B. or B.S. degree with the approved curriculum are granted the A.C.S. certification. All graduate study is based on this sound undergraduate foundation.

The Department is well-equipped for the active research program which is being carried on. Major pieces of equipment include: JEOL Model JNM-PS-100NMR Spectrometer with Fourier Transform capability, Varian EM-390 NMR, Hitachi RMU-6E Mass Spectrometer, Cary Model 14 and 16 Spectrophotometers, Gilford Spectrophotometers, Microwave Spectrometer, Perkin-Elmer 621 I.R. Spectrophotometer, Varian E-3 ESR Spectrometer, Jarrel-Ash Laser Raman Spectrometer, Perkin-Elmer Fluorescence Spectrophotometer, Perkin-Elmer Atomic Absorption Spectrophotometer, Hewlett-Packard Reporting Gas Chromatograph, Princeton Applied Research Polarographic Analyzer, high temperature calorimeters, high-voltage electrophoresis apparatus, pulsed Nd:glass laser system and optical multichannel analyzer, ultra and refrigerated centrifuges, Durrum Stopped-flow Spectrophotometer System interfaced with a Varian 620 i computer and a variety of radiation counters including a liquid scintillation counter. A variety of computing resources are available including programmable calculators, both local and remote time sharing systems, and large-scale batch-mode facilities. A high-temperature laboratory has just been completed.

Areas of research under active investigation and available for student participation include analytical chemistry, biochemistry, inorganic chemistry, organic chemistry and physical chemistry.

Section I. Master's Degree Programs

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, classified standing may be subject to satisfactory performance on orientation examinations which are administered by the Department of Chemistry. The student with a major in chemistry from another accredited institution should have met all requirements for certification of the baccalaureate degree by the American Chemical Society (statement available on request).

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as stated in Part Three of this catalog. In addition, the student must pass orientation examinations in chemistry. These examinations should be taken during the first semester in residence.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes a major consisting of at least 24 units in chemistry from courses listed below as acceptable on master's degree programs. At least 15 of these units must be in 600- and 700-numbered courses, excluding Chemistry 792, 797 and 798. Chemistry 711 and 791 are required. Subject to departmental approval, the student may elect Plan A with the thesis (in which case the program must include Chemistry 792 and 799A), or Plan B with the comprehensive examination in lieu of the thesis. A student electing Plan A must pass a final oral examination on his thesis.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing, the student must satisfy the basic requirements for the master's degree as described in Part Three of this catalog. He must also complete a graduate program which includes a major consisting of at least 24 units in chemistry from courses listed below as acceptable on master's degree programs. At least 15 of these units must be in 600- and 700-numbered courses, excluding Chemistry 792, 797 and 798. Chemistry 711, 792, 791 and 799A are required. A student must pass a final oral examination on his thesis.

Section II. Joint Doctoral Program

The cooperating faculties of the Departments of Chemistry at the University of California, San Diego and at San Diego State University possess complementary specialties that enable the doctoral student to gain familiarity with most areas in chemistry and to find research activity and direction in a great variety of specific problems.

In order that he may participate effectively in this program, the entering student will be required to have a mastery of the subjects usually presented in the undergraduate curriculum: physical, organic, analytical, and inorganic chemistry. All applicants will be expected to present the equivalent of one year of physics and of mathematics at least through integral calculus. Students should be prepared to take placement examinations which will be administered by a joint committee and will cover the fields of inorganic, organic and physical chemistry, and mathematics.

On admission to the program, the student is guided by Requirements for the Doctoral Degree Program given in Part Three of this catalog. The student will normally spend his first year in the program completing his year of residency at the University of California, San Diego. It is desirable for the student to complete his qualifying examination by the end of his fifth semester and to be advanced to candidacy.

Staff

The following faculty members of the Departments of Chemistry of the cooperating institutions participate in the joint doctoral program, being available for direction of research and as departmental members of Joint Doctoral Committees.

University of California, San Diego:

Graduate Adviser: J. R. Arnold; Alternate: R. Linck
 Staff: Arnold, Doolittle, Kraut, Miller, Perrin, Schrauzer, Traylor, Vold, Zimm

San Diego State University:

Graduate Adviser: R. W. Isensee; Alternate: W. D. Jones
 Staff: Abbott, Bennett, Cobble, Coffey, Dahms, Grubbs, Hellberg, Jensen, Jones, Lebherz, Malley, O'Neal, Richardson, Ring, Roeder, Sharts, Stewart

Courses Acceptable on Advanced Degree Programs in Chemistry

UPPER DIVISION COURSES

- 500A-500B. (160A-160B.) Principles of Chemical Engineering (3-3)**
(Same course as Mechanical Engineering 584A-584B.)
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or Chemistry 310A or 410A.
Industrial stoichiometry; fluid flow and heat transfer as applied to unit operations such as evaporation, distillation, extraction, filtration, gas-phase mass transfer, drying, and others. Problems, reports, and field trips.
- 501. (180.) Chemical Oceanography (3) II**
Three lectures and occasional field trips.
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
The application of the fundamentals of chemistry to the study of oceans.
- 502. (191.) Chemical Literature (1)**
Prerequisite: Upper division standing in chemistry.
An introduction to the availability, scope and use of the chemical literature.
- 510. (118.) Advanced Physical Chemistry (3) I**
Prerequisite: Chemistry 410B.
Mathematical tools essential to solving problems in chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.
- 520A. (127A.) Inorganic Chemistry (3) I, II**
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
The physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond.
- 520B. (127B.) Inorganic Chemistry (3) I, II**
Prerequisite: Chemistry 520A.
An advanced systematic study of representative and transition elements and their compounds.
- 530. (131.) Theoretical Organic Chemistry (3) I, II**
Prerequisites: Chemistry 310A or 410A, and 431 and 431L.
The application of modern electronic theory to the physical and chemical properties of organic compounds.
- 537. (154.) Organic Qualitative Analysis (3) I**
One lecture and six hours of laboratory.
Prerequisites: Chemistry 431 and 431L and credit or concurrent registration in Chemistry 310A or 410A.
The identification of organic compounds and mixtures.
- 550. (155.) Advanced Instrumental Methods (2) I, II**
Prerequisites: Chemistry 431 and 431L and credit or concurrent registration in Chemistry 410B.
Advanced theory of chemical instrumentation.
- 560A-560B. (116A-116B.) General Biochemistry (3-3)**
Prerequisites: Chemistry 310B or 410B, and 431 and 431L.
The structure, function, metabolism, and thermodynamic relationships of chemical entities in living systems. Not open to students with credit in Chemistry 361A-361B.
- 577. (170.) Radiochemical Analysis (4) II**
Two lectures and six hours of laboratory.
Prerequisite: Chemistry 310A or 410A.
Principles and techniques of radioactivity applied to the various fields and problems of chemistry. Instrumentation, tracer application, activation analysis, nuclear reactions and radiolysis.

GRADUATE COURSES

- 710. (210.) Advanced Topics in Physical Chemistry (1-3)**
Prerequisite: Consent of instructor.
Selected topics in physical chemistry. Maximum credit six units applicable on a master's degree.
- 711. (211.) Chemical Thermodynamics (3)**
Prerequisite: Chemistry 410B.
Chemical thermodynamics and an introduction to statistical thermodynamics.
- 712. (212.) Chemical Kinetics (3)**
Prerequisite: Chemistry 410B.
Theory of rate processes; applications of kinetics to the study of reaction mechanisms.
- 713. (213.) Quantum Chemistry (3)**
Prerequisite: Chemistry 410B.
Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory.
- 714. (214.) Molecular Structure (3)**
Prerequisite: Chemistry 520A.
Theory and techniques used in the determination of molecular structure.
- 720. (220.) Advanced Topics in Inorganic Chemistry (1-3)**
Prerequisite: Chemistry 520A.
Selected topics in inorganic chemistry. Maximum credit six units applicable on a master's degree.
- 721. (221.) Mechanisms of Inorganic Reactions (3)**
Prerequisite: Chemistry 520A.
Mechanisms in inorganic reactions with an emphasis on coordination chemistry.
- 722. (222.) Chemistry of the Nonmetals (3)**
Prerequisite: Chemistry 520A.
An advanced systematic study of the nonmetallic elements and their compounds.
- 730. (230.) Advanced Topics in Organic Chemistry (1-3)**
Prerequisites: Chemistry 431 and 431L.
Selected topics in organic chemistry. Maximum credit six units applicable on a master's degree.
- 731. (231.) Mechanisms of Organic Reaction (3)**
Prerequisites: Chemistry 410B, 431 and 431L.
Reactivity and mechanism in organic reactions.
- 732. (232.) Advanced Organic Chemistry (3)**
Prerequisites: Chemistry 431 and 431L.
Applications and limitations of organic reactions from the viewpoint of synthesis.
- 750. (250.) Advanced Topics in Analytical Chemistry (1-3)**
Prerequisite: Chemistry 410B.
Selected topics from the field of analytical chemistry. Maximum credit six units applicable on a master's degree.
- 760. (260.) Advanced Topics in Biochemistry (1-3)**
Prerequisite: Chemistry 560B.
Selected topics in biochemistry. Maximum credit six units applicable on a master's degree.
- 762. (262.) Enzymology (2)**
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
Theory and techniques used in the study of the mechanism of action of enzymes.
- 767. (261.) Advanced Biochemical Techniques (2)**
Prerequisite: Chemistry 560A.
Six hours of laboratory. Theory and practice of current research techniques in biochemical research.
- 790. (200.) Seminar (1-3)**
An intensive study in advanced chemistry, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

791. (291.) Research Seminar (1)

Prerequisite: Consent of department chairman.

Discussions on current research by students, faculty, and visiting scientists. Each student will make a presentation based on the current literature.

792. (290.) Bibliography (1)

Exercise in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

797. (297.) Research (1-3) Cr/NC

Prerequisite: Consent of instructor.

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

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

897. Doctoral Research (1-3) Cr/NC

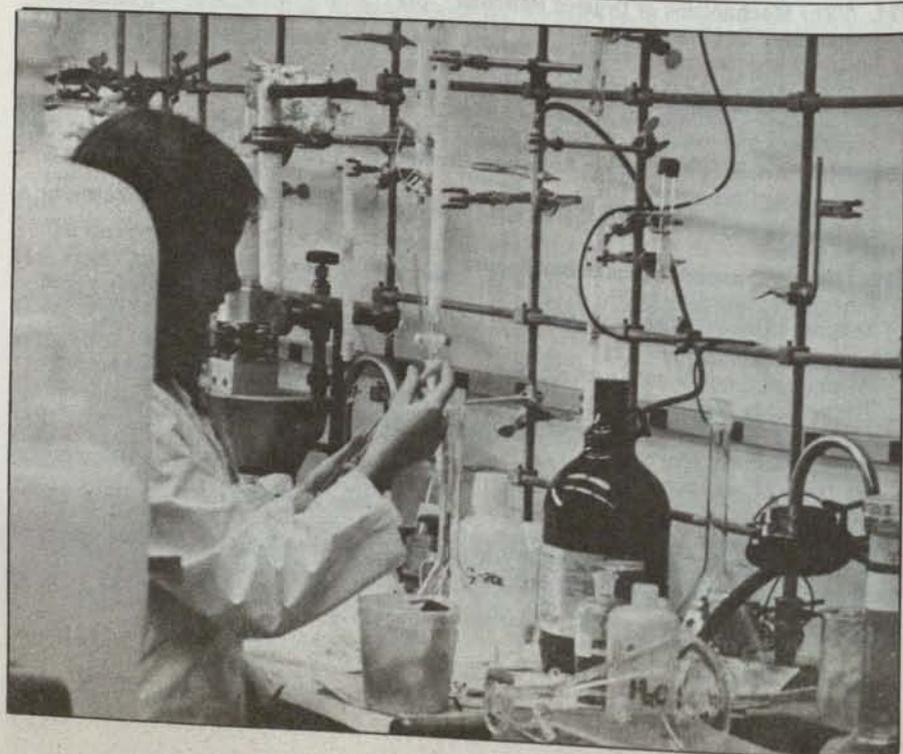
Prerequisite: Admission to the doctoral program.

Independent investigation in the general field of the dissertation.

899. Doctoral Dissertation (3-6) Cr/NC

Prerequisites: An officially constituted dissertation committee and advancement to candidacy.

Preparation of the dissertation for the doctoral degree.

**Communicative Disorders****(Speech Pathology and Audiology Courses)****Faculty**

Chairman, Department of Communicative Disorders: H. G. Kopp

Graduate Advisers: A. C. Nichols (Coordinator), E. J. Allen, L. Ellis, H. G. Kopp, R. L. Martin, R. M. Riedman, and E. L. Thile

Credential Adviser, Speech and Hearing Specialist: E. L. Thile

Credential Adviser, Deaf: H. G. Kopp

Professors: Kopp, Nichols, Riedman, Thile

Associate Professor: Allen

Assistant Professors: Ellis, Gould, Martin, Williams, Wood

General Information

The Department of Communicative Disorders, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Speech Pathology and Audiology, and to the credentials described below. The department offers advanced study in speech and hearing science, speech pathology, audiology, and education of the deaf. The programs utilize the facilities of the Speech and Hearing Clinic in the Clinical Training Center in the Education Building. Observation, diagnostic and therapeutic experiences with out-patient children and adults are available. Field experience is offered in the public schools and community agencies. Practicum and observation experiences are possible at San Diego Speech, Hearing and Neurosensory Center; Children's Hospital; United Cerebral Palsy Center; The Home of Guiding Hands (mental retardation); Anderson and Lafayette Schools (deaf and severely hard of hearing); Head Start (disadvantaged); Rolando School (congenital aphasia); University of California Medical School Hospital; U. S. Naval Hospital, Balboa Park; U. S. Veterans Administration Hospital; Chicano Community Center; San Ysidro Community Health Center; and Edgemoor Geriatrics Hospital.

Admission to Graduate Standing

All students must satisfy the general requirements for admission to the University with classified graduate standing as described in Part Three of this catalog.

Minimum requirements for admission as a classified graduate student in the Department of Communicative Disorders include the following: (1) a score of 950 on the GREAT; (2) a grade point average of not less than 2.5 in all undergraduate work taken for the baccalaureate degree; (3) a grade point average of not less than 3.0 in courses taken for a speech pathology-audiology-deaf education major of 24 semester units; (4) three letters of recommendation; (5) a personal interview by one or more members of the department or by a member of the profession specified by the department; (6) a handwritten statement from the applicant regarding career goals, awards, volunteer, and other relevant experience.

All transfer students planning a program to include clinical practica must enroll in the appropriate undergraduate practicum as specified for their field of interest (Speech Pathology 326, 345, 346, 356, 357, 528) prior to enrollment in graduate practica.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Speech Pathology and Audiology are required to have completed Speech Pathology and Audiology 600.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of 24 units in speech pathology and audiology which must include Speech Pathology and Audiology 600 and 797 or 799A. Fifteen units of the 24 units must be in 600- and 700-numbered courses in speech pathology and audiology, including Speech Pathology and Audiology 600, 601, 602, 603, 604, 605, 606, 640, 644, 649, 654, 657, 658 or 797, 798, or 799A. A student must complete Speech Pathology and Audiology 799A, Thesis, for Plan A. If Plan B is elected, the student must complete a research project as approved by the department; complete two units of Speech Pathology and Audiology 797, Research; and pass a comprehensive examination (which may be repeated only once).

Credentials

Specialist Credential for the Communicatively Handicapped (Ryan Bill)

The Specialist Credential for the Communicatively Handicapped prepares students for an emphasis in one or more of the following areas of handicap:

- Deaf and Severely Hard of Hearing
- Deaf-Blind
- Severe Oral Language (including aphasia)
- Speech and Hearing

The Specialist Credential for the Communicatively Handicapped specifies a sequence of speech pathology and audiology courses plus a sequence of education courses. This credential incorporates a standard classroom teaching credential for the communicatively handicapped and may be pursued in conjunction with the Multiple Subjects Teaching Credential or the Single Subject Teaching Credential. Students may choose to: (1) major in Liberal Studies (offered by the School of Education) in conjunction with specified speech pathology and audiology courses; (2) pursue a departmental major; complete specified prerequisites for the School of Education; pass the National Teacher Examination prior to entering the School of Education curriculum. Consult the department office for further information.

Rehabilitative Services Credential (Ryan Bill)

Assembly Bill 3150 provides for Rehabilitative Services Credentials for the following areas:
Language, Speech and Hearing
Audiology

The Department is in the process of developing specific sequences for each of the above areas. This credential program will not require the professional course sequence from the School of Education.

Certificates

Preparation Leading to the Certificate of Clinical Competence from the American Speech and Hearing Association

Students may complete the academic and clinical practice requirements leading to the Certificate of Clinical Competence in Speech Pathology (CCC-Sp) or to the Certificate of Clinical Competence in Audiology (CCC-A) given by the American Speech and Hearing Association. The certificate requires 60 units of course work, 30 units of which must be completed at the graduate level; 300 clock hours of supervised clinical experience, 150 hours of which must be completed at the graduate level; a clinical fellowship year; and a national examination. The academic and practica requirements must meet certain specifications. Consult an adviser in the area in which certification is desired for specific information.

Preparation Leading to the State Credential and the Professional Certificate from the Council on Education of the Deaf

Students may complete the academic and practica requirements leading to the State Credential and the Professional Certificate given by the Council on Education of the Deaf. The Professional Certificate requires a specific pattern of courses and teaching experiences and evidence of successful classroom teaching following completion of the academic requirements. Consult an adviser in the Program for Education of the Deaf for more information.

Courses Acceptable on Master's Degree Programs in Speech Pathology and Audiology

UPPER DIVISION COURSES IN SPEECH PATHOLOGY AND AUDIOLOGY

- 527. (127.) Diagnostic Methods in Speech Pathology (3) I, II**
Prerequisites: Speech Pathology and Audiology 320, 323, and 340, and credit or concurrent registration in Speech Pathology and Audiology 326.
Principles and procedures in the assessment and prognosis of communication disorders to include delayed speech and mental retardation. Case histories, testing, interviewing, and clinical reporting. Child, parent, and teacher counseling.
- 528. (128.) Diagnostic Practicum in Speech Pathology (3) I, II**
One lecture and six hours of laboratory.
Prerequisite: Speech Pathology and Audiology 527 and passage of a competency examination.
Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment.
- 529. (129.) Orientation to Public School Practicum (3) I, II**
Prerequisites: Speech Pathology and Audiology 324 and 527. Minimum of 50 hours of supervised clinical practicum. Prior to admission, applicants must receive departmental approval.
Goals, materials and procedures for organizing and administering speech, language and hearing programs in the school. Fifteen hours of observation and fifteen hours of screening required. Should be taken the semester before Speech Pathology and Audiology 433 or Special Education 480E (severe oral language or speech and hearing emphases). (Formerly numbered Speech Pathology and Audiology 329.)
- 530-S. (130-S.) Family Communication Dynamics (3) S**
Prerequisites: Speech Pathology and Audiology 322 and 326.
The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.
- 531. (131.) Language Structure (3)**
Prerequisite: Speech Pathology and Audiology 106.
Systematic study of the design features of language as they relate to communication behavior. The primary focus is the role of language structure in disordered communication.
- 532. (132.) Assessment of Language Disorders (3) I, II**
Prerequisite: Speech Pathology and Audiology 531.
Techniques of language assessment, including administration and evaluation of particular diagnostic tests. Organic implications in auditory perceptual problems. Discussions and demonstrations. Project required.
- 539. Neuropathologies of Speech, Hearing and Language (3) II**
Prerequisites: Speech Pathology and Audiology 321 and 340. Recommended: Speech Pathology and Audiology 323.
Research and theory concerning the nature, etiologies and principles of treatment of disorders of speech, hearing and language resulting from pathologies of the nervous system.
- 543. (143.) Hearing Amplification (1 or 3) I**
Prerequisites: Module I: Speech Pathology and Audiology 340. Module II: Speech Pathology and Audiology 342.
Module I includes hearing aid components, functions, trouble shooting and client orientation to amplification (1 unit). Module II includes hearing aid evaluations, fittings, and electroacoustical hearing aid analysis (2 units). Students may elect Module I (1 unit) or Modules I and II (3 units).
- 547. (147.) Hearing Conservation (3) II**
Prerequisite: Speech Pathology and Audiology 341.
Noise measurement, analysis and reduction and its effects on hearing and communication. Damage risk criteria and methods of hearing protection.
- 550. (150.) Problems of Deafness (3) I**
Educational programs, services and resources for hearing impaired; historical background, philosophy, sociological and psychological problems.

551. (151.) Speech Reading and Auditory Training (3) I, II

Prerequisites: Speech Pathology and Audiology 320 and 340.

Theory and methods of speech reading; auditory rehabilitation methods including survey of amplification systems. Fifteen hours of observation in program for deaf, severely hard of hearing.

552. (152.) Articulation Disorders and Methods (3) II

Prerequisites: Speech Pathology and Audiology 321 and 551.

Significant theories and research in prevention and remediation of articulatory disorders. Includes emphases on speech habilitation of hearing impaired, cognitive and motor processing.

553. (153.) Language Disorders and Methods (3) I

Prerequisites: Speech Pathology and Audiology 531 and 551.

Significant theories and research in language development and remediation. Includes emphasis on application to hearing impaired individuals.

596. (198.) Selected Topics in Speech Pathology and Audiology (1-4) I, II

Prerequisite: Twelve units in speech pathology and audiology.

Specialized study of selected topics from the area of speech pathology and audiology. Maximum credit six units. Maximum credit three units applicable on a master's degree.

GRADUATE COURSES IN SPEECH PATHOLOGY AND AUDIOLOGY**600. (200.) Research and Bibliography (3)**

Prerequisites: Undergraduate major or equivalent in Speech Pathology, Audiology, or Education of the Deaf; and Psychology 270.

Bibliographic techniques. Methods and exposition of research in the fields of speech pathology and audiology. Recommended for the first semester of graduate work, and prerequisite to advancement to candidacy.

601. (201.) Seminar in Voice Science (3)

Prerequisites: Speech Pathology and Audiology 320 and 321.

Relationship of basic principles of sound to speech and language. Analysis of speech sound production. Application of mechanical and electronic equipment to the measurement and control of speech and language.

602. (202.) Seminar in Aphasia (3)

Prerequisites: Speech Pathology and Audiology 323 and 539.

Review and analysis of research in diagnosis and therapy for persons with disorders of symbolization (adult and childhood aphasia). Concurrent enrollment in one unit of Speech Pathology and Audiology 626 recommended.

603. (203.) Seminar in Cerebral Palsy (3)

Prerequisites: Speech Pathology and Audiology 324 and 539.

Review and analysis of research in diagnosis and theories of treatment for persons with speech and language disorders associated with cerebral palsy. Concurrent enrollment in one unit of Speech Pathology and Audiology 626 recommended.

604. (204.) Seminar in Oro-Facial Anomalies (3)

Prerequisites: Speech Pathology and Audiology 321, 324, and 340; and 75 hours of supervised practicum.

Review and analysis of research in diagnosis and therapy for persons with cleft palate and other oro-facial anomalies. Concurrent enrollment in Speech Pathology and Audiology 626 recommended.

605. (205.) Seminar in Stuttering (3)

Prerequisite: Speech Pathology and Audiology 322.

Differential diagnosis of stuttering. Individual and group therapy for children and adults with dysfluency problems. Concurrent enrollment in one unit of Speech Pathology and Audiology 626 recommended.

606. (206.) Seminar in Voice Pathology (3)

Prerequisites: Speech Pathology and Audiology 321 and 324.

Study of voice problems of structural and functional etiologies. Differential diagnosis of vocal anomalies. Theories and therapy for vocal problems. Concurrent enrollment in Speech Pathology and Audiology 626 required.

626. (226.) Advanced Clinical Practice in Speech Pathology (1) Cr/NC

Three hours of laboratory.

Prerequisites: A minimum of three units of Speech Pathology and Audiology 326 and/or 346; Speech Pathology and Audiology 340; departmental approval; credit or concurrent registration in appropriate seminar or courses as specified below:

A. Aphasia: Speech Pathology and Audiology 531 and 602.

B. Cerebral Palsy and Neuromotor Anomalies: Speech Pathology and Audiology 539 or 603.

C. Cleft Palate and Oro-Facial Anomalies: Speech Pathology and Audiology 604.

D. Stuttering: Speech Pathology and Audiology 322, 605.

E. Articulation: Speech Pathology and Audiology 552 or 654.

F. Language Disorders: Speech Pathology and Audiology 531, 553.

G. Voice Pathologies: Speech Pathology and Audiology 606.

Supervised work with representative advanced speech and language disabilities. Twenty-six hours practicum required per unit. Maximum credit four units. Up to three units may be taken concurrently. Maximum credit four units of Speech Pathology and Audiology 626, 645, 646 and/or 656 applicable toward the master's degree. Transfer students must enroll in one unit of Speech Pathology and Audiology 326 prior to 626.

628. (228.) Advanced Diagnostic Methods in Speech Pathology (3)

One lecture and six hours of laboratory.

Prerequisites: Speech Pathology and Audiology 326 and 528. Departmental approval.

Diagnosis of individuals with complicated speech problems such as brain injury, congenital aphasia, adult aphasia, cerebral palsy, hearing loss, laryngectomy, mental retardation, stuttering and voice problems.

640. (244.) Seminar in Psychoacoustics (3) I

Prerequisites: Speech Pathology and Audiology 342 and credit or concurrent registration in Speech Pathology and Audiology 600.

Psychophysical concepts underlying clinical audiology. Relationship of audiologic test results to the conditions under which they were obtained. (Formerly numbered Speech Pathology and Audiology 644.)

644. (240.) Medical Audiology (3) II

Prerequisites: Speech Pathology and Audiology 345 and credit or concurrent registration in Speech Pathology and Audiology 600.

Problems of diagnosis, referral and report writing. Testing in medical setting and medically significant hearing pathologies.

Recommended Speech Pathology and Audiology 640. (Formerly numbered Speech Pathology and Audiology 640.)

645. (245.) Advanced Clinical Practice in Audiologic Assessment (1) Cr/NC

Prerequisite: Speech Pathology and Audiology 345.

Three hours of laboratory.

Advanced casework in hearing evaluation. Maximum credit four units. Up to two units may be taken concurrently. Maximum credit four units of Speech Pathology and Audiology 626, 645, 646 and/or 656 applicable on a master's degree.

646. (246.) Advanced Clinical Practice with Hard of Hearing (1) Cr/NC

Prerequisite: Speech Pathology and Audiology 346.

Three hours of laboratory.

Supervised practice with problem hearing cases. Maximum credit four units. Up to two units may be taken concurrently. Maximum credit four units of Speech Pathology and Audiology 626, 645, 646 and/or 656 applicable on a master's degree.

649. (249.) Seminar in Major Research in Diagnostic Audiology (3)

Prerequisites: Speech Pathology and Audiology 342; and credit or concurrent registration in Speech Pathology and Audiology 600.

Consideration of research in clinical audiology. Maximum credit six units.

654. (254.) Seminar in Physiological Phonetics (3)

Prerequisite: Speech Pathology and Audiology 552.

Physiology underlying the production of continuous speech, including transitional movements, based on a syllabic concept.

656. (256.) Advanced Clinical Practice with the Deaf (1) Cr/NC

Three hours of laboratory.

Prerequisites: Speech Pathology and Audiology 552 and 553.

Supervised clinic practicum at an advanced level with representative deaf cases. Maximum credit four units. Maximum credit four units of Speech Pathology and Audiology 646 and 656 applicable on a master's degree with emphasis in the Hearing Impaired.

657. (257.) Differential Diagnosis of the Hearing Impaired (3)

Prerequisites: Speech Pathology and Audiology 551, and Speech Pathology and Audiology 626, 646, or 656.

Diagnosis of multiple-handicapped, hearing impaired children; including clinical teaching, critical overview of assessment methods, materials and equipment, prognosis, current philosophies and trends. Suggested concurrent enrollment in Speech Pathology and Audiology 656.

658. (258.) Seminar in Problems of Deafness (3)

Prerequisites: Speech Pathology and Audiology 346 or 356.

Problems of deafness, evaluation of research, interdisciplinary approach to aural habilitation.

659. Seminar in Problems of Deaf-Blind (3)

Prerequisite: Speech Pathology and Audiology 356.

Problems of the Deaf-Blind, study of techniques and methodology, evaluation of research, interdisciplinary approach to habilitation.

797. (297.) Research (2) Cr/NC

Prerequisite: Advancement to candidacy and consent of the graduate adviser.

Research in speech pathology, deaf education or audiology. Maximum credit two units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

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

799A. (299.) Thesis or Project (3) Cr/NC

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

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

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Drama**Faculty**

Chairman, Department of Drama: Gordon Howard

Coordinator Graduate Program: M. Lessley

Graduate Advisers: Amble, Annas, Bellinghiere, Harvey, Howard, Lessley, McKerrow, Owen, Powell, Stephenson

Credential Adviser: M. McKerrow

Professors: Amble, Harvey, Howard, Owen, Powell, Stephenson

Associate Professors: Annas, Lessley, McKerrow

Assistant Professor: Bellinghiere

Assistantships

Graduate teaching assistantships in drama are available to a limited number of qualified students. Application blanks and further information may be obtained from the department chairman.

General Information

The Department of Drama, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Drama and the Master of Fine Arts Degree. The department offers advanced study in the various areas of drama as they relate to acting, directing, playwriting, scene design, lighting, children's theatre, and costume and makeup. The center for graduate students in drama on the San Diego State University campus is the Dramatic Arts Building, one of the finest educational theatre plants in the United States. The Dramatic Arts Building contains a main stage with an auditorium seating 500 and an experimental theatre seating 200, three classrooms, a scene design drafting room, a fully equipped costume laboratory, a spacious scene shop, and several rehearsal rooms.

MASTER OF ARTS DEGREE IN DRAMA**Admission to Graduate Study**

In addition to the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, the student will be required to complete the departmental diagnostic examination during his first semester of graduate enrollment in the department. The examination is administered each semester on the second Saturday following the beginning of classes. Each candidate must also provide the department with three letters of recommendation.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Drama are required to have completed Drama 600, and to have removed any deficiencies assigned as the result of the diagnostic examination.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of a minimum of 30 units which includes at least 24 units from courses complete a graduate program of a minimum of 30 units which includes at least 24 units from courses listed below as acceptable on master's degree programs in drama, of which at least 18 units must be in 600- and 700-numbered courses. Drama 600, Research and Bibliography, Drama 647A, Seminar in the History of Theatre and Drama, and Drama 799A, Thesis or Project, are required courses. For the master's thesis, the Department of Drama provides the opportunity for a research thesis in a selected area, but does not necessarily guarantee the student a design or direction thesis or project.

MASTER OF FINE ARTS DEGREE IN DRAMA

Admission to Graduate Study

In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, the student must complete the departmental diagnostic examination which is administered each semester on the second Saturday following the beginning of classes. Candidates must possess a baccalaureate degree in drama with a grade point average in drama of at least 3.0. Additionally, the candidate must have completed requirements commensurate with his proposed emphasis in the M.F.A. program, completed a minimum of six units of theatre history, and demonstrated outstanding abilities in a particular area of dramatic arts by the submission of a portfolio and resume, and by presentation of acceptable recommendations regarding the candidate's academic, professional and personal qualifications from responsible academic or professional theatre figures.

If the student has not met certain criteria or demonstrates deficiencies in his undergraduate preparation, he may be granted conditional admission with the understanding that he will complete prescribed coursework in addition to the 60-unit program and prior to advancement of the student to classified standing.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as described in Part Three of this catalog. Candidates for the M.F.A. must have completed 45 units included in the official program. They must also have successfully completed Drama 600 and any deficiencies noted by the faculty upon the completion of the departmental diagnostic examination. The appointment of a major adviser from the student's major area of specialization must be made, and a thesis topic which has received the approval of the departmental graduate committee review. There must be a positive report from the graduate committee, which will review the student's performance in terms of professional standards, such as the ability to work with other members of the theatrical family, an acceptable artistic output, the meeting of deadlines, the ability to function within organizational outlines, a demonstration of the skills commensurate with the specific emphasis area, and a demonstration of the physical and mental stamina to perform under the stress of a production schedule.

Specific Requirements for the Master of Fine Arts Degree

Candidates for the M.F.A., in addition to meeting the requirements for classified graduate standing, must complete a 60-unit graduate program which includes a core of courses totaling 21 units as follows: Drama 600, 621, 643, 645, 646A, 646B, and 647A. In addition, six units of departmental graduate level electives are to be selected from Drama 644, 647A, 648, and 798. The student must complete 15 units of practicum, project, and thesis units under the course numbers, Drama 746A, 746B, 795, and 799A. Twelve elective units are to be selected from four areas with no more than six units in any one area. Those acceptable courses are Art 694, 760, 769, 771, 775, or English 614, 617, 632, 640, or Telecommunications and Film 602, 615, or Drama 545, 554. Six units of electives are to be selected from courses acceptable for graduate credit at the discretion of the student and his major adviser with the approval of the department graduate adviser.

Candidates will present a written thesis (799A) with emphasis on analysis/apologia of the Drama 795 project. Candidates must pass a final oral examination by the faculty, which will include his official thesis committee, upon the completion of all other requirements for the degree.

Courses Acceptable on Master's Degree Programs in Drama

UPPER DIVISION COURSES

511. (111.) Styles in Creative Dramatics (3) I, II

Prerequisite: Drama 310.

Advanced techniques and procedures in the teaching of creative dramatics. Lectures and reading on the application of creative dramatics with emphasis on the different styles of creative dramatics available to the practitioner. Practical experience through work with children.

515. (115.) Directing for Children's Theatre (3) II

Prerequisite: Drama 255.

Staging and technical problems relative to the production of plays for children; casting procedures, blocking and characterization principles, rehearsal and scenic techniques. Practical experience through university-sponsored productions. (Formerly numbered Drama 315.)

521. (121.) Theatre Criticism (3) I

Prerequisite: Drama 420.

A consideration of the problems and practices of dramatic criticism as applied to theatrical production in the past and present.

523. (123.) Playwriting (3) II

Prerequisite: Consent of instructor.

The writing and critiquing of original dramatic works.

526. (126.) Theory of Production for the Musical Stage (3) I

Prerequisites: Drama 231 and consent of instructor.

Theory and principles of production of modern musicals.

533. Style in Acting and Directing (3)

Prerequisite: Drama 231.

Acting and directing problems related to the production of plays from the great periods in theatre history. Special attention to characterization, style, dramatic values, creative directing, and production approaches.

534. History of Acting Theory (3)

Prerequisite: Drama 231.

The major acting theories and theoreticians from Diderot, through Delsarte and Stanislavski, to Grotowski, and analysis of major actors who practiced these theories.

545A-545B. (145A-145B.) Stage Lighting (3-3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Drama 545A is prerequisite to 545B.

Light, color, lighting instruments, and control equipment, including the design and planning of lighting for plays.

551. (151.) Costume, Movement, and Manners (3) I

Prerequisite: Drama 250.

Interrelationship of period costumes on the movement and manners of the time and their application on the stage.

552. (152B.) Costume History and Design for the Theatre (3)

Two lectures and three hours of laboratory.

Prerequisites: Drama 250 and 452.

Chronological study of clothing and theatrical dress from the Restoration period to 1930, with practical applications in terms of contemporary costume design for the theatre.

554. (154.) Costume Construction Techniques (3) I

Two lecture-demonstrations and three hours of laboratory.

Prerequisites: Drama 440A and 552.

Period pattern drafting, draping, cutting, construction. Wig, millinery, armour, mask, accessory construction. Costume paint and dye techniques.

598. (198.) Selected Topics in Drama (1-3) I, II

Prerequisite: Twelve units in drama.

A specialized study of selected topics from the areas of drama. May be repeated with new content. Maximum credit six units.

GRADUATE COURSES

600. (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.

621. Seminar in Theories of the Theatre (3)

Prerequisites: Drama 420, 600.

Critical determinants in the theatre which have led to the major stylistic movements: Aristotle, Wagner, Brecht, Strindberg, Appia, Craig, Jones, Brunetiere, Archer, Simonson and Grotowsky.

635. (235.) Seminar in Children's Dramatics (3)

Prerequisites: Drama 310 and 515.

Modern developments and trends in children's theatre and creative dramatics in educational, civic and professional programs in the United States and England.

643. (243.) Seminar in Staging Practices for Theatre and Television (3)

An investigation of the recent developments of modern staging facilities. The application of technological advances and electromechanical devices to the scenic arts for theatre and television.

644. (244.) Seminar in Stage Direction (3)

Prerequisite: Drama 457.

Research projects in the aesthetic principles and practices of stage direction with an emphasis on theory, technique and historical development.

645. (245.) Seminar in Lighting for Stage and Television (3)

Prerequisite: Drama 545A or 545B.

Projects concerned with the aesthetic and technical problems of stage lighting.

646. (246.) Seminar in Design for Stage and Television (3)

The principles of design in the theatre with an emphasis on the historical development of theatrical costume or scenic environment. The investigation of recent tendencies in styles and their evolution. Each section may be taken once for credit.

A. Costume Design

Prerequisite: Drama 452 or 552.

B. Scenery Design

Prerequisite: Drama 440 or 448.

647. (247.) Seminar in History of Theatre and Drama (3)

Prerequisites: Drama 420, 460A and 460B.

A. British and Continental Theatre**B. American Theatre****648. (248.) Seminar in Producing the European Play (3)**

Prerequisites: Drama 420, 460A, 460B, and 600.

Problems in producing works of such playwrights as Ibsen, Strindberg, Chekhov, Shaw. Maximum credit six units applicable on a master's degree.

746A. Theatre Practicum Skills (3)

Prerequisite: Admission to the M.F.A. program.

Twelve hours per week in laboratory and workshop experience in three design areas (lighting, scene design, costume).

Investigation and application of those skills necessary to the function of a theatrical design artist in theatrical scene design, lighting design or costume design.

Experience and instruction in drafting, painting, color mixing, costume and pattern cutting, lighting and projection techniques, slide preparation, construction and use of equipment and materials.

746B. Theatre Practicum Internship (6)

Prerequisite: Advancement to Candidacy in the M.F.A. program.

Twenty-four hours per week in laboratory and workshop field experience in one of three design areas (lighting, scene design, costume) at an approved professional theatre.

795. Practicum in Theatre Arts (1-4)

Prerequisites: Drama 600 and 647.

Faculty supervised projects in scene design, costume design, lighting design or direction leading to public performance of a full-length play.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units applicable on a master's degree.

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

799A. (299.) Thesis or Project (3) Cr/NC

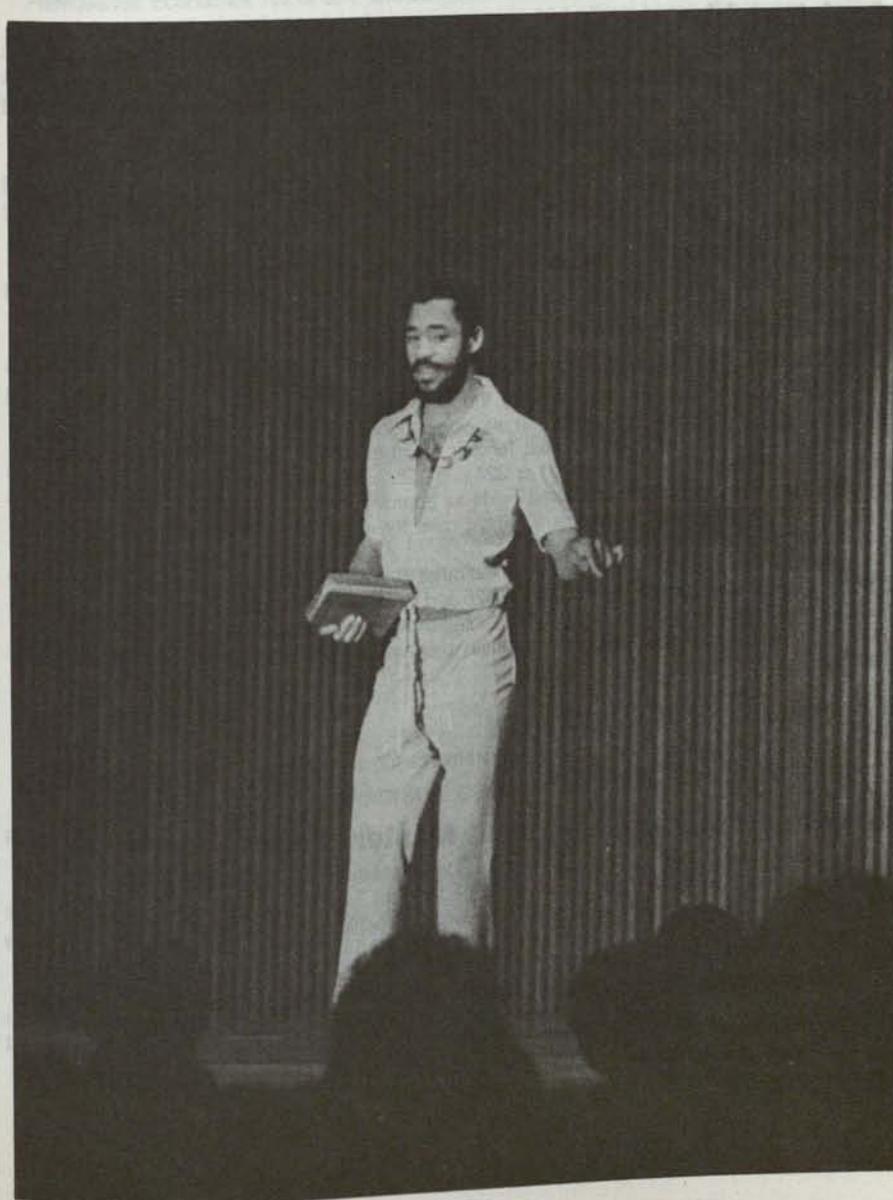
Prerequisites: An officially appointed thesis committee and advancement to candidacy.

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

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Economics

Faculty

Chairman, Department of Economics: F. D. Sebold
 Coordinator Graduate Program: Douglas B. Stewart
 Graduate Advisers: Anderson, Madhavan, Parti, Poroy, Stewart, Venieris
 Credential Adviser: Douglas B. Stewart
 Professors: Anderson, Babilot, Barckley, Bridenstine, Clement, Flagg, Gifford, Jencks, Kartman, Leasure, Madhavan, Nam, Neuner, Poroy, Sebold, Venieris
 Associate Professors: Hambleton, Hardesty, Popp, Stewart
 Assistant Professors: Holt, Parti, Vogt

Assistantships

Graduate assistantships in economics are available to a limited number of qualified students. Application blanks and further information may be obtained from the Chairman of the Department of Economics.

General Information

The Department of Economics, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Economics. For graduate study in connection with the Master of Arts degree in Social Science, refer to the section of this catalog under Social Science. Research activities provided by the Department of Economics include the Economics Research Center, the Institute of Labor Economics, the Center for Public Economics, and the Center for Research in Economic Development.

Admission to Graduate Study

General requirements for admission to the University with classified graduate standing are described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Economics must have completed at least 18 units of upper division courses in economics including Economics 447 and either 320 and 321 or 324 and 325, or their equivalents, and six units of upper division courses in economics or related fields as approved by the graduate adviser. All persons applying for graduate study in economics must have three letters of recommendation sent to the Department of Economics.

A student with a bachelor's degree in a field other than economics who has completed the core courses, Economics 320 and 321 or 324 and 325 and Economics 447, or their equivalents, may, with the consent of the Department of Economics, offer more than six upper division units in fields other than economics as part of this undergraduate preparation for admission to classified graduate standing.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of at least 24 units in economics, of which at least 21 units must be in 600- and 700-numbered courses in economics. Economics 541, 620, 621, and either 799A, for Plan A, or 797, for Plan B, are required courses; the remaining unit requirements may be selected from courses in economics listed below or by petition to the Department Graduate Study Committee, from 500-, 600- and 700-numbered courses offered by other departments of the college. Written comprehensive examinations in micro and macro theory and two additional fields are required, but a grade of B or better can be substituted for the comprehensive exams, on a graduate course-by-course basis.

Courses Acceptable on Master's Degree Programs in Economics

UPPER DIVISION COURSES

502. (132.) Public Economics (3)

Prerequisite: Economics 321 (325) or 401.

General equilibrium. Externalities of consumption and production, their impact on allocative efficiency. Theory of social wants and public goods supply. Theoretical treatment of individual and community preference ordering and decision making. Proposals for improving the allocation of resources.

505. (105.) Welfare Economics (3)

Prerequisites: Economics 102 or 304, and 321 (325).

Theories of individual and social well-being; economic and ethical bases of optimum welfare arrangements; individual values and social decision making; tests of improvement; interdependence and externalities; public and private sectors; properties of social welfare functions.

520. (109.) Advanced Economic Theory (3)

Prerequisites: Economics 320 (324) and 447.

Recent contributions to the advanced theory of the firm, consumer demand, employment and growth.

524. (194.) Capital and Growth Theory (3)

Prerequisites: Economics 320 and 321, or 324 and 325.

Factors affecting the capital supply and the rate of growth of a developed economy.

541. (141.) Econometrics (3)

Prerequisites: Economics 201 and 447 or Mathematics 142.

Measurement in economics. The construction and testing of simple economic hypotheses. Use of economic models involving multiple-regression analysis.

559. (139.) Location Theory (3)

Prerequisite: Economics 458.

The optimal location of economic activities. The effects of spatial distribution of resources and markets on the locational equilibrium of the firm.

561. (191.) International Trade Theory (3)

Prerequisites: Economics 320 and 321, or 324 and 325.

The pure theory of international trade and commercial policy.

592. (192.) International Monetary Theory and Policy (3)

Prerequisite: Economics 320 (324) or 490.

Balance of payments, international capital movements and foreign exchange in relation to current theories and policies.

GRADUATE COURSES

603. (203.) Economic Analysis (3)

Prerequisite: Classified graduate standing.

The theory of the firm in a market economy. Not open to students with credit in Economics 320 and 321; not applicable toward a master's degree in economics.

606. (206.) The Public Economy (3)

Prerequisite: Economics 401 or Public Administration 550.

Determinants of the supply and demand for public goods; the social decision-making processes in determining public goods; supply; financing public goods; taxes and expenditures; planned program budgeting and cost-benefit analysis. Not applicable toward a master's degree in economics.

- 611. (201A.) Seminar in the Development of Economic Thought (3)**
Prerequisite: Twelve units in economics.
A critical study of the development of economic thought.
- 620. (200B.) Seminar in Advanced Economic Theory (3)**
Prerequisites: Economics 320 and 321, or 324 and 325; and 447.
Theory of money, employment, and income determination. Alternative theories of consumption, investment, price level and rate of interest. Causes of instability in short and long run.
- 621. (200A.) Seminar in Advanced Economic Theory (3)**
Prerequisites: Economics 320 and 321, or 324 and 325; and 447.
Theory of consumer and producer behavior. Determination of prices and resource allocation patterns in a market economy; partial and general equilibrium.
- 635. (210.) Seminar in Economic History (3)**
Prerequisite: Economics 335 or 338A or 338B.
Individual study and group discussion on selected topics in economic history.
- 660. (292.) Seminar in International Economics (3)**
Prerequisite: Economics 360 or 561.
Resource allocation, income distribution, commercial policies, capital movements, balance of payments, and international monetary institutions.
- 665. (295.) Seminar in the Economics of Underdeveloped Countries (3)**
Prerequisite: Economics 365.
Theories regarding underdevelopment and policies for development of economically underdeveloped countries.
- 680. (250.) Seminar in Labor Economics (3)**
Prerequisite: Economics 380 or 482.
Individual study and group discussion of selected topics in labor economics.
- 701. (231.) Seminar in Public Finance (3)**
Prerequisite: Economics 401.
Advanced study of public finance problems and literature; research.
- 728. (208.) Seminar in Development Planning (3)**
Prerequisite: Economics 365.
Role of government in development. Choice of target and policy variables. Planning techniques and their application to the national development problems.
- 758. (238.) Seminar in Urban and Regional Economics (3)**
Prerequisite: Economics 458.
Urban and regional economics; individual research and reports.
- 777. (272.) Seminar in Utilities and Energy Resources (3)**
Prerequisite: Economics 452 or 477.
Selected topics in public utility economics and regulation, and the economics of energy resource development.
- 783. (253.) Comparative Labor Seminar (3)**
Prerequisite: Economics 380 or 483.
Research in comparative labor problems, including problems of labor and social legislation, medical economics, poverty problems, labor force structural problems, and international labor movements.
- 790. (235.) Seminar in Monetary Economics (3)**
Prerequisite: Economics 490.
Analysis of theoretical issues associated with the demand for money, the money supply and process of money creation. Emphasis upon interaction of monetary and real factors in domestic-international money and financial markets.
- 796. (290.) Bibliography (1)**
Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's thesis.

797. (297.) Research (3) Cr/NC

Prerequisites: Classified graduate standing and consent of instructor.
Independent research project in an area of economics.

798. (298.) Special Study (1-3) Cr/NC

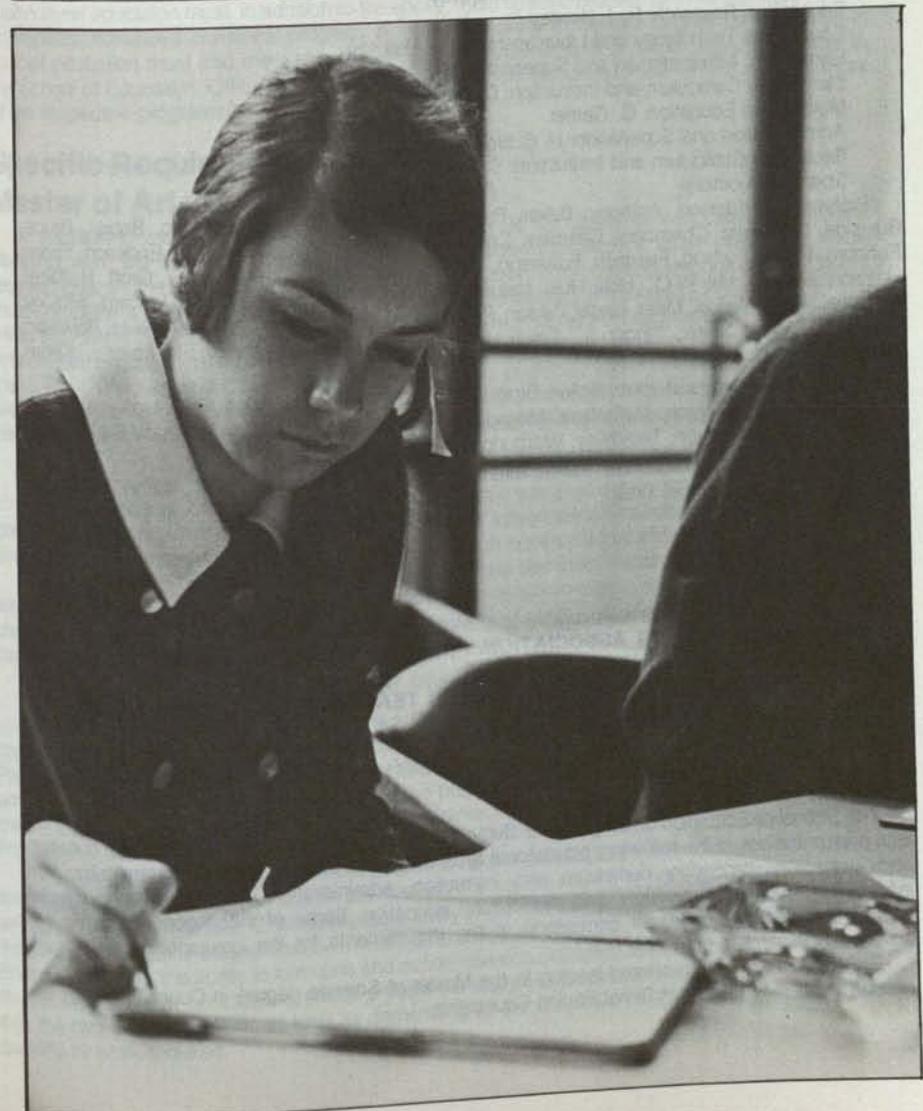
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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



Education

Faculty

Dean of the School of Education: T. A. Arciniega
 Associate Dean for Academic Affairs: R. R. Nardelli
 Assistant to the Dean for Student Affairs: J. Lujan
 Coordinator of Counselor Education: J. D. Chamley
 Coordinator of Educational Administration: H. B. Holt
 Coordinator of Educational Technology and Librarianship: P. J. Harrison
 Coordinator of Elementary Education: J. M. Kaatz
 Coordinator of Secondary Education: D. A. Meek
 Coordinator of Special Education:
 Coordinator of Higher Education Programs: R. D. Smith, Jr.
 Coordinator of Graduate Programs in Education: P. J. Hawley
 Graduate Advisers:

Counseling (Master of Science): J. D. Chamley
 Educational Research: P. J. Hawley
 Educational Technology and Librarianship: P. J. Harrison
 Elementary Administration and Supervision: H. B. Holt
 Elementary Curriculum and Instruction: D. Gast
 Multicultural Education: G. Getner
 Administration and Supervision: H. B. Holt
 Secondary Curriculum and Instruction: S. Stautland
 Special Education:

Professors: Anderson, Anthony, Baker, Baldwin, Becklund, Bee, Berg, Blanc, Briggs, Bruce, Burnside, Carnevale, Chambers, Chamley, Charles, Crum, Cummins, Duckworth, Erickson, Fearn, Fishburn, Fisher, Forbing, Friedrich, Fulkerson, Gast, Gates, Gega, Goodson, Gray, Groff, Halfaker, Harrison, Hawley, Hill, W.O., Holt, Huls, Inskeep, Kendall, Malcolm, McCabe, McClard, McCoy, McLevie, Meek, Melton, Miller, Nagel, Person, Petteys, Platz, Retson, Riggs, Rixman, Ross, Rowland, Samuels, Servey, Shaw, Singer, Jr., Smith, H.R., Smith, R.D., Jr., Stautland, Steckbauer, Strom, Tossas, Wetherill, Wilding

Associate Professors: Becker, Botkin, Brooks, Clark, Curry, Doorlag, Elliott, Ford, Howard, Jones, Kaatz, Leppaluoto, Mazon, McFarlane, Merino, Mooers, Moreno, Morris, J., Morris, W.P., Murphy, Pehrson, Reel, Thompson, Treadway, Warburton, Yesselman

Assistant Professors: Altamura, Behm, Birch, Cochran, Dollar, Getner, Hill, P., Klann, McAllister, Ochoa, Rodriguez, Savage, Weir

Scholarships

The following scholarships are available to graduate students in education:

SAN DIEGO TEACHERS ASSOCIATION. Awarded to two students preparing for teaching. \$100 each per year.

CALIFORNIA CONGRESS OF PARENTS AND TEACHERS, INC. Awarded to a fifth-year student in training for the General Secondary Credential. \$400 per year.

General Information

The School of Education offers graduate study leading to the Master of Arts degree in Education with concentrations in the following: educational technology and librarianship, elementary curriculum and instruction, secondary curriculum and instruction, administration and supervision, special education, educational research, and multicultural education. Some of these concentrations are designed to permit concurrent completion of the requirements for the correspondingly named advanced credentials.

Graduate study is also offered leading to the Master of Science degree in Counseling and the Master of Science degree in Rehabilitation Counseling.

Master of Arts Degree in Education

Admission to Graduate Study

The student must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, the student must have completed a minimum of 12 units in professional education courses, and he must either be admitted to the program of teacher education or hold a valid California credential, other than an emergency or provisional credential, before he or she will be recommended by the school for classified graduate standing.

Advancement to Candidacy

A student desiring a Master of Arts degree in Education with a concentration in educational technology and librarianship, elementary curriculum and instruction, or secondary curriculum and instruction may be advanced to candidacy upon completion of the basic requirements as described in Part Four of this catalog. A student desiring a concentration in administration, supervision, or multicultural education must, in addition to the above, meet specific requirements for admission to the appropriate advanced credential program. A student desiring a master's degree concentration in special education must also meet specific admission requirements. (For further information, refer to the School of Education, Office of Graduate Programs, Room Education 100B, or to the coordinators of the respective programs.)

Specific Requirements for the Master of Arts Degree in Education

In addition to meeting the requirements for admission to the University with classified graduate standing and the credential requirements as applicable, the student must satisfy the basic requirements for the master's degree described in Part Three of this catalog. In addition, the student must complete a minimum of 18 units in one of the concentrations in education. Education 690 and either Education 799A or Education 795A-795B are required courses. All applicants for the Master of Arts degree in Education must pass a comprehensive examination and satisfactorily complete either a thesis (Plan A) or two writing seminars (Plan B). In addition, students majoring in certain concentrations are required to verify successful teaching experience and to satisfy requirements for advanced credentials. See below for further information regarding each of the concentrations.

The Comprehensive Examination

This examination, designed to evaluate the student's achievement in the specific area of his concentration, is required of all candidates for the master's degree in education. A student is eligible to take the comprehensive examination only if he has been advanced to candidacy.

The examination is offered near the mid-point of each semester. Reservation must be made at least one week in advance of the examination. For information on exact dates, and for a reservation, check with the Office of Graduate Programs, School of Education, Room Education 100B, or with the coordinators of the respective programs.

Selection of Plan A or Plan B

In general, applicants will be programmed for Plan B, the seminar plan. After the student has completed approximately half of his program for the degree, he may request permission to transfer to completed approximately half of his program for the degree, he may request permission to transfer to Plan A, the thesis plan, if he has by this time established a plan for his thesis and has secured a faculty adviser. Requests for transfer to Plan A must be prepared as an official change in program for the master's degree, countersigned by the faculty adviser, and submitted to the Office of Graduate Programs in the School of Education.

In general, Plan A is designed for students who have a particular research problem they wish to investigate in some detail. Plan B provides students the opportunity (1) to have two experiences of writing and research nature, (2) to participate actively in the research projects of the other members of the seminar, and (3) to subject their own research to critical evaluation by the other seminar members. Both plans require the ability to formulate and define research problems, to assemble data pertinent to the problem, to draw conclusions, and to present the study in acceptable written form. It is expected that the two seminars will be at least as demanding as the thesis with respect to the difficulty and quantity of work required.

Course Requirements

Note: Students are requested to consult with the appropriate master's degree adviser prior to taking any course work leading to the master's degree. Students are urged to take Education 690 (3 units) as early as possible in their first graduate year.

Concentrations

Administration and Supervision

The Master of Arts degree in Education with a concentration in school administration and supervision is designed to provide increased knowledge and skill for the prospective administrator or supervisor. The program is intended for those teachers who wish to become superintendents, assistant superintendents, principals, vice principals, supervisors, department chairpersons or other administrative and supervisory personnel.

The Commission for Teacher Preparation and Licensing has approved the San Diego State University proposal for an Administrative Services Credential. The document submitted to and approved by the Commission followed guidelines established by the Commission. Students completing the program successfully will meet the requirements for the credential. The credential authorizes service in any administrative position in California public schools.

The requirements for the Administrative Services Credential are as follows:

1. Possession of a valid California teaching or pupil personnel credential which is based on a bachelor's degree.
2. Three years of teaching or counseling experience in the public schools or in private schools of equivalent status.
3. Possession of a master's degree. (The degree does not need to be in educational administration.)
4. Development of specified competencies as evidenced by successful completion of coursework outlined below.

It should be emphasized that students who already hold a master's degree may earn the credential without completion of a second master's degree in educational administration.

Those students with special interests not requiring an administrative credential are invited to seek counsel from the Coordinator of the Department of Educational Administration concerning a program which can vary from the one listed below. Such students would be those who wish to become private school administrators, school business managers, team leaders, department chairpersons or who have other administrative interests associated with education.

Admission requirements for the master's degree and/or credential are as follows:

1. Possession of a master's degree or classified graduate standing for a master's degree based on the following:
 - a. A grade point average of 2.5 in the last 60 semester units attempted.
 - b. Graduate Record Examination Aptitude Test Score of at least 950.

Note: Exceptions to the above requirements may be granted following successful completion of the core courses listed below.

2. A teaching credential and teaching experience.
3. Filing of an Application for Admission to the Department of Educational Administration.
4. Completion of two counseling interviews with faculty members of the Department.
5. Following successful completion of the above steps, a "field check" will be done by the Department in the district where the candidate is employed. At this time a recommendation will be sought from the school district.

Students who have teaching credentials will normally complete the necessary steps for full admission while they are enrolled in the "Core" courses listed below.

Courses required in the program:

Core (12 units)

Educ. Admin. 600, Principles of School Administration (3 units)

Educ. Admin. 610, Education Leadership (3 units)

Educ. Admin. 620, Legal and Financial Aspects of School District Policies (3 units)

or

Educ. Admin. 630, Curriculum Development and Evaluation (3 units)

Advanced Seminars and Field Work (9 units) (These courses are open only to students who have completed the core and who are fully admitted to the program.)

1. Elementary Specialization
Educ. Admin. 640A-640B-640C, Seminars in Elementary School Administration and Supervision (6 units)
Educ. Admin. 660A-660B-660C, Field Experience in Elementary School Administration and Supervision (3 units)
2. Secondary Specialization
Educ. Admin. 650A-650B-650C, Seminars in Secondary School Administration and Supervision (6 units)
Educ. Admin. 670A-670B-670C, Field Experience in Secondary School Administration and Supervision (3 units)

Completion of the above courses will meet the competency requirements for a credential for students who already have a master's degree.

Additional Requirements for the Master's Degree (9 units)
Education 690, Procedures of Investigation and Report (3 units)
Education 799A, Thesis (3 units) and Electives (3 units)

or

Education 795A-795B, Seminar (6 units)

Pass a Departmental Comprehensive Examination

For further information, the student is referred to the Department of Educational Administration, Room Education 179.

Educational Research

The Master of Arts degree in Education with a concentration in educational research is designed to prepare students having a basic background in education to conduct measurement, research, and evaluation activities at a professional level. Emphasis is upon preparation for research activities at the school district level.

1. Prerequisite: A basic background in education (a minimum of 12 units of professional education) including at least one course in tests and measurement.
2. Education 690, Procedures of Investigation and Report (3 units).
3. Core program (9 units): Education 661, Seminar in Educational Measurement; Secondary Education 564, Quantitative Methods in Educational Research; Education 691, Educational Research Design.
4. Electives (15 units) selected with adviser's approval.
5. Education 799A, Thesis (3 units).

Educational Technology and Librarianship

The Master of Arts degree in Education with a concentration in educational technology and librarianship is designed for persons seeking a career in administration of school library media centers, or administration of instructional materials design and production; and for the classroom teacher or training director interested in increasing his effectiveness. For those interested in administration of school library media centers, the degree program is generally taken in conjunction with work towards specialized preparation in school librarianship. Those students who plan to seek employment as school library media specialists must hold a valid teaching credential. For further information see the school library media specialists must hold a valid teaching credential. For further information see the Coordinator of Educational Technology and Librarianship. Course requirements follow:

1. Prerequisite: Varies with the career goal of the student—see adviser.
2. Education 690, Procedures of Investigation and Report (3 units).
3. Core program (15 units): The core is composed of courses in education and related fields, selected with the approval of the adviser on the basis of the student's interests and goals. A minimum of nine units must be taken in courses at the 600 and 700 level.
4. Electives (6-9 units) selected with the approval of the adviser.
5. Research (3-6 units): Education 795A-795B, Seminar (6 units); or Education 799A, Thesis (3 units).

Elementary Curriculum and Instruction

The Master of Arts degree in Education with a concentration in elementary curriculum and instruction is designed to increase professional competence in the form of more breadth, depth, and technical skill in curriculum and instruction, either generally or in selected areas of specialization. Specialist Credentials in Reading or Early Childhood Education may be earned concurrently with this degree. See Graduate Adviser, Elementary Education for further information. Course requirements are as follows:

1. Prerequisite: A basic background in education (minimum of 12 units) to include curriculum and methods, child growth and development, tests and measurements, educational psychology, and history and philosophy of education.
2. Education 690, Procedures of Investigation and Report (3 units).
3. Core program (15 units): The core is composed of courses in education and related fields, selected with the approval of the adviser on the basis of the student's interests, goals and needs. A minimum of nine units of education shall be taken in courses at the 600 and 700 level.
4. Electives (6-9 units) selected with the approval of the adviser.
5. Special Study and Research (3-6 units): Education 795A-795B, Seminar (6 units); or Education 799A, Thesis (3 units).

Multicultural Education

The Master of Arts degree in Education with a concentration in multicultural education is designed to provide specialized and advanced skills in dealing with bilingual/cross-cultural school and community situations. Students select one of four culture areas in which to specialize: Afro-American, Asian-American, Mexican-American, or Native American.

1. Prerequisites:
 - a. A basic background in education (B.A. or teaching credential or certificate).
 - b. Experience in the selected culture. (In the Mexican-American specialization, this means proficiency in Spanish.)
2. Education 690, Procedures of Investigation and Report (3 units).
3. Multicultural education core program (12 units):
 - Education 550, Philosophy of Cultural Pluralism in Education
 - Education 553, Multicultural Oral Language Assessment Training
 - Education 650, Bilingual/Cross-Cultural Curriculum Development
 - Education 651, Bilingual/Cross-Cultural Teaching Strategies
4. Education courses (6 units) selected with adviser's approval.
5. Electives (3-6 units) selected from academic disciplines or ethnic studies with approval of adviser.
6. Research (3-6 units): Education 795A-795B, Seminar (6 units); or Education 799A, Thesis (3 units).

Secondary Curriculum and Instruction

The Master of Arts degree in Education with a concentration in Secondary Curriculum and Instruction, is designed as the base for applicants to increase professional competence in any of the fields typically taught in secondary schools, and for obtaining those competencies and technical skills in curriculum and instruction either generally, or in selected areas of specialization.

A Master of Arts degree in Education with a concentration in curriculum and instruction in the area of occupational or adult education, is offered in all of the community college occupational subject matter listed in Title 5, Section 5, #52210, except agricultural services and processing, animal production, cosmetology and barbering, fire science, forestry, and law. With adviser's approval in this 30-unit program, up to 12 units of electives may be selected in the appropriate fields related to the major occupational field.

1. Prerequisites: A basic background in education (12 units).
2. Education 690, Procedures of Investigation and Report (3 units).

3. Core program: (6 units) to include Secondary Education 610, Curricular Problems in Education (3 units) and 3 units from Secondary Education 613, Advanced Problems in Secondary School Instruction
 - or
 - Secondary Education 616, Recent Trends in Secondary Curriculum;
 - or
 - Secondary Education 617, Seminar in Research in Curricular Problems.
4. Electives (15 units)
 - a. 9 units must be selected from the 600- and 700-numbered courses selected with the approval of the adviser on the basis of the student's interests, goals and needs.
 - b. 6 units selected from cognate fields with approval of the adviser.
5. Education 798, Special Study (3-6 units); Education 795A-795B, Seminar, or Education 799A Thesis (3 units).

Special Education

The Master of Arts degree in Education with a concentration in special education is designed to assist the applicant in improving performance in his roles as a classroom teacher. Individually designed programs have as goals increased knowledge and skill in the areas of the gifted, educationally handicapped, and mentally retarded. With adviser's approval, in this 30-unit program, up to 12 units (Plan B) or up to 15 units (Plan A) of electives may be chosen from courses in the elementary, secondary and special education departments, and related academic departments.

1. Prerequisite: A basic background in education (minimum of 12 units) to include such courses as curriculum and methods, educational psychology, growth and development, and history and philosophy of education.
2. Education 690, Procedures of Investigation and Report (3 units).
3. Core program (9 units) to include: Education 660, Advanced Educational Psychology; Special Education 670, Seminar in Education of Exceptional Children; and a 600- or 700-level education course in area of specialty.
4. Electives selected with adviser's approval.
5. Additional required courses (3-6 units): Education 795A-795B, Seminar (6 units); or Education 799A, Thesis (3 units).

Master of Science Degree in Counseling

Application for Admission

In seeking admission to the program leading to the Master of Science degree in Counseling, or work in rehabilitation counseling, the student should write directly to Dr. John D. Chamley, Chairman, Department of Counselor Education, requesting appropriate application materials. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms.

FULL-TIME STUDENTS ARE ADMITTED ONLY IN THE FALL SEMESTER OF EACH YEAR AND APPLICATIONS MUST BE RECEIVED BY THE DEPARTMENT OF COUNSELOR EDUCATION NOT LATER THAN MARCH 15.

PART-TIME STUDENTS MAY APPLY BOTH SPRING AND FALL SEMESTERS. THE DEADLINE FOR APPLICATION IS OCTOBER 15 FOR THE SPRING AND MARCH 15 FOR THE FALL SEMESTER.

The student must file an application for admission to San Diego State University with the Office of Admissions and the Department of Counselor Education.

Admission to Graduate Study

A student seeking admission to the curriculum leading to the Master of Science in Counseling degree, or work in rehabilitation counseling, must meet the requirements for admission to the University with classified graduate standing, as stated in Part Three of this catalog.

Criteria for admission require that the student submit evidence in written form and through interviews demonstrating personal, professional, and academic adequacy for the Master of Science in Counseling degree. Only students who show reasonable promise of success in counseling as a career will be admitted to this curriculum. In order to continue in the program the student must demonstrate on-going academic and personal growth.

Advancement to Candidacy

The student must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, the student must maintain continued good standing in the counselor education program. For further information, refer to the Department of Counselor Education, School of Education, Room 179.)

The Comprehensive Examination

A comprehensive examination is required. The student must demonstrate satisfactory performance on a comprehensive examination, in lieu of a thesis, prepared by the Department of Counselor Education.

Reservations for the examination must be made in advance in the Office of Graduate Programs, School of Education, Room 179.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing, as described in Part Three of this catalog, and for advancement to candidacy, the requirements must be met for the specific program in which the student is enrolled, as described below.

Full-Time Block Program

The full-time block program leads to a 36-unit master of science degree. It includes those courses listed below as required for the part-time evening program and allows for individualized in-depth work in selected areas of study. There is an emphasis upon field work experience in various settings through the internship part of the program. This degree is designed primarily for those planning to enter public school counseling and other related areas of counseling.

Part-Time Evening Program

1. Education 690; Counselor Education 710A-710B or equivalent.
2. At least nine units of work from each of the following groups of courses:
First Level: Education 690, Counselor Education 610A, 610B, 620
Second Level: Counselor Education 640, 650, 660, 670 (645 and 667)
Third Level: Counselor Education 710A, 710B, 720, 730, 740, 750, and Psychology 654 and 655.
3. Successful completion of a program consisting of at least 36 units of approved course work.

Master of Science Degree in Rehabilitation Counseling

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog.

Students seeking admission to the graduate program which leads to a Master of Science degree in Rehabilitation Counseling should address their inquiries to the director of the program. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms. As there are specific requirements for the program, it is not sufficient merely to file the general university admission forms.

STUDENTS ARE ADMITTED ONLY IN THE FALL SEMESTER EACH YEAR AND APPLICATIONS MUST BE RECEIVED BY THE REHABILITATION COUNSELOR PROGRAM NO LATER THAN MARCH 15.

Criteria for admission require that students submit evidence in written form and through interviews demonstrating personal, professional, and academic adequacy for the Master of Science degree in Rehabilitation Counseling. Only students who show reasonable promise of success in rehabilitation counseling as a career will be admitted to this curriculum. In order to continue in the program, the student must demonstrate ongoing academic and professional growth.

A student who has already completed a program leading to a Master of Arts degree in Education with a concentration in counseling, or a Master of Science degree in Counseling, will not be eligible for admission to the program leading to the Master of Science degree in Rehabilitation Counseling.

The Rehabilitation Counselor Program has the primary objective of preparing students to enter the field of vocational rehabilitation, and has an emphasis in providing counseling services to physically,

emotionally, and mentally disabled persons. A limited number of graduate stipends from the Rehabilitation Services Administration are available to (1) students who are committed to entering vocational rehabilitation after graduation, and (2) students with a financial need.

Advancement to Candidacy

To be eligible for advancement to candidacy the student must, in addition to holding classified graduate standing, have completed at least 24 units of the coursework listed on the official program, maintain good standing in the Rehabilitation Counselor Program, and otherwise comply with the regulations of the Graduate Division as described in Part Three of this catalog.

Specific Requirements for the Master of Science Degree in Rehabilitation Counseling

In addition to meeting the requirements for classified graduate standing, and the basic requirements for the master's degree, as described in Part Three of this catalog, the student must complete a minimum of 60 graduate units of 500-, 600- and 700-numbered courses, to include:

- Counselor Education 610A-610B - Determinants of Human Behavior (3-3)
- Counselor Education 645 - Appraisal and Vocational Choice (6)
- Counselor Education 660 - Theory and Process of Counseling (4)
- Counselor Education 670 - Theory and Process of Group Counseling (4)
- Counselor Education 680A - Introduction to Rehabilitation Process (3)
- Counselor Education 680B - Medical Aspects of Disability (3)
- Counselor Education 680C - Psychological Aspects of Disability (3)
- Counselor Education 680D - Placement of the Disabled (3)
- Counselor Education 710A, 710B - Professional Seminar (3-3)
- Counselor Education 720 - Internship (6) or (3-3) Cr/NC
- Counselor Education 730 - Field Work in Counseling (3) Cr/NC
- Counselor Education 740 - Practicum: Individual Counseling (3) Cr/NC
- Counselor Education 750 - Advanced Seminar and Practicum: Individual Counseling (3) Cr/NC
- Education 690 - Procedures of Investigation and Report (3)
- Counselor Education 506-S - Guidance Conference (1)

The Comprehensive Examination

A comprehensive examination is required. The student must demonstrate satisfactory performance on a comprehensive examination, in lieu of thesis, prepared by the Rehabilitation Counselor Program. Reservations for the examination must be made in advance in the Office of Graduate Programs, School of Education, Room 179.

Full-time Block Program

The two-year, full-time block program leads to a 60-unit Master of Science degree in Rehabilitation Counseling.

Part-Time Evening Block Program

The Part-Time Evening Block Program leads to a 60-unit Master of Science degree in Rehabilitation Counseling. This program is designed specifically for persons already working in one of the helping professions. It requires the same courses as the full-time block program, although the courses are not taken in the same sequence and when possible, are held in the evening. It provides for completion of the 60-unit program in a total of 33 months, beginning with the fall semester and utilizing three fall semesters, three spring semesters, and two summer sessions. Due to the nature of the Part-Time Evening Block Program, the students are expected to maintain continuous enrollment through the completion of the program. Students who are unable to maintain continuous enrollment will be required to re-enroll in the following year's Part-Time Evening Block Program. Students who do not register each semester and during the summer must wait one year until the next Part-Time Evening Block Program begins.

Teaching Credentials

San Diego State University offers credential programs requiring at least one year of postbaccalaureate course work at the upper division or graduate level for the following credentials:

- Multiple Subjects
- Single Subject
- Early Childhood Education Specialist
- Bilingual/Cross-cultural Specialist
- Special Education Specialist
- Reading Specialist
- Administrative Services
- Library Services
- Pupil Personnel Services
- Community College Instructor

A student who completes the prescribed programs for any of the above credentials will be recommended by the university to the Commission for Teacher Preparation and Licensing for the credential.

For information regarding admission to teacher education and requirements for these credentials, refer to the university *General Catalog* or contact the School of Education.

Community College Instructor Credential

Specific Requirements

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

Baccalaureate Degree Candidates

Education 380, 381, 382 and 565 are offered to students who have had occupational experience and have been recommended by the following departments: Industrial Studies, Recreation, Family Studies and Consumer Sciences, Criminal Justice Administration, Health Science and Safety, Microbiology, Nursing, Public Administration and Urban Studies, Social Welfare, and Telecommunications and Film; and the School of Business Administration. Students may also enroll if they presently hold a partial credential in an occupational area or obtain an endorsement by the Dean of Occupational Education in a California community college. Early consultation with the Higher Education Programs Coordinator is recommended.

Master's Degree Candidates

No formal courses in education are required under the current interpretation of the Education Code. The program is elective and selective. It is strongly suggested, however, that graduate students enroll in the professional courses in teacher education in order to enhance employment possibilities as most community colleges require some professional preparation and/or experience. Students desiring further information are urged to consult the Higher Education Programs Coordinator, Room 129, Education Building. Admission to Education 700 is based upon successful completion of Education 666 (not required for psychology majors) and Education 680 and selection by the Community College Admission Committee.

Most departments on the San Diego State University campus have developed programs permitting graduate students to obtain the master's degree and enroll in the education courses concurrently in as little as one year of full-time study. The courses in education are typically offered in the summer session and after three o'clock in regular semesters.

- The following courses are suggested to enhance employment in the community college:
- Education 630 Seminar in Instructional Methods and Materials Community College (2)
 - Education 666 Educational Psychology: Community College (2)
 - Education 680 The Community College (3)
 - Education 700 Directed Teaching (4)

NOTE: Directed teaching can be accomplished only in a community college day assignment and not in summer session.

Library Services Credential

San Diego State University offers curricula leading to the Library Services Credential. This credential authorizes the holder to serve as a school library/media specialist in grades kindergarten through 12. For information concerning the credential, the student is referred to the Department of Educational Technology and Librarianship.

Requirements for Admission

1. Formal application to the Department of Educational Technology and Librarianship.
 2. Admission to a basic teaching credential program.
- or-
3. Possession of a basic teaching credential.
 4. Interview(s) with a faculty member in the Department of Educational Technology and Librarianship.
 5. An undergraduate grade point average of 2.5 or a graduate grade point average of 3.0.

Program

The following program elements are required of all library credential candidates: (28 units.)

	Units
ETL 445 School Library Media Programs	3
ETL 540 Educational Technology	3
ETL 541 Production of Instructional Materials	3
ETL 546 Basic Reference Materials	3
ETL 547 Selection of Instructional Materials	3
ETL 548 Cataloging and Classification	3
ETL 675 Seminar in the Administration of Instructional Media Centers	3
ETL 678 Literature for Children	3
-or-	
ETL 679 Literature for Adolescents	4
-and-	
ETL 483 Directed Teaching-Library Practice	4
-or-	
ETL 775 Directed Internship for the Instructional Media Specialist	4

All library credential candidates must, with the approval of an adviser, select three units of elective program elements from among the following: (3 units)

ETL 549 Ethnic Materials for Children and Young People	3
ETL 550 Workshop in Educational Technology and Librarianship	1-3
ETL 641 Instructional Graphics Communication	3
ETL 642 Multi-Media Message Design	3
ETL 674 Seminar in Educational Technology	3
ETL 677 Reference Materials in Subject Areas	3
ETL 678 Literature for Children	3
ETL 679 Literature for Adolescents	3

Total Units 31

Pupil Personnel Services Credential

San Diego State University offers programs leading to the Pupil Personnel Services Credential. This credential authorizes the holder to function as a counselor or other pupil personnel specialist in grades K through 12. For information concerning this credential, the student is referred to the Department of Counselor Education.

Requirements

1. Admission to the University and to the Department of Counselor Education. Formal application also must be made to the Department of Counselor Education early in the semester prior to anticipated enrollment.

- There are 44 competencies which must be satisfied for this credential. These competencies are met in the following courses: Education 690, Counselor Education 610A, 610B, 620, 640, 645, 650, 660, 667, 670 710A, 710B, 730, and 740. Students who have had comparable course work outside the Department of Counselor Education and who desire to apply for the P.P.S. Credential through this department are required to provide evidence, in each case to the satisfaction of the relevant faculty member, that the designated competencies have been met.
- Included as part of the above competencies is a field work requirement which involves cross-cultural field experiences with pupils of divergent age levels. The specific nature of the field work will vary according to the background of each student.
- A master's degree is not a requirement for this credential, however, courses in the program described above may be acceptable also for the Master of Science degree in Counseling for which satisfactory completion of the Comprehensive Examination in Counselor Education and a minimum of 30 acceptable graduate units in residence are required.

Bilingual/Cross-Cultural Specialist Credential

Candidates in the credential program must possess a valid California Teaching Credential and must successfully complete 24 units of credit as follows:

- Education 690: Procedures of Investigation and Report 3
- Multicultural Education Core Curriculum 12
 - Ed 550 Philosophy of Cultural Pluralism in Education 3
 - Ed 553 Multicultural Oral Language Assessment Training 3
 - Ed 650 Bilingual/Cross-Cultural Curriculum Development 3
 - Ed 651 Bilingual/Cross-Cultural Teaching Strategies 3
- Education courses: All students are required to enroll in special sections of Education 687, Workshop in Community Influences on Learning and Curriculum Planning 6
- Electives: Selected from outside the School of Education, with approval of adviser 3

Candidates must notify the Credentials Office of their program of study.

Early Childhood Education Specialist Credential

This credential authorizes the holder to serve as an Early Childhood Education Specialist in one or more of the following capacities:

- Teacher—lead teacher, demonstration teacher.
- Coordinator of Early Childhood Education programs.
- Instructor and/or coordinator of paraprofessionals.
- Supervisor and/or director of Early Childhood Education programs.
- Program developer.
- Program evaluator.
- Researcher.

Attainment of this credential requires the following:

- A bachelor's degree (or higher).
- Completion of requirements for the Multiple Subjects or other valid and appropriate California Teaching Credential.
- Completion of an approved 30-unit graduate program for the Specialist Credential. Required courses are Elementary Education 502, 571, 710, 711, 712, 713.
- Verification of two years of successful teaching experience at the preschool or primary grade levels.

Reading Specialist Credential

San Diego State University offers a program leading to a Reading Specialist Credential. This credential authorizes the holder to function as a reading specialist in grades Kindergarten through 12. For information concerning this credential, the student is referred to the Clinical Training Center.

Requirements for Admission

- Basic teaching credential.
- Interview(s) with a faculty member in Reading.
- Ryan Reading Methods Course or equivalent.

Program

Program	Units
Education 511 Reading Diagnosis	3
Education 621 Advanced Diagnosis in Reading	3
Education 631 Reading Clinic	3
Education 690 Procedures of Investigation and Report	3
Elementary Education 611 Seminar in Reading in Elementary Education/	
Secondary Education 681 Seminar in Secondary School Reading	3
Education 652 Topics in Reading	1-6
Education 701 Field Experience as a Reading Specialist	4

and three electives chosen in consultation with an adviser.
 A master's degree is not a requirement for this credential; however, courses in the program described above may be acceptable also for the Master of Arts in Education degree with a concentration in Curriculum and Instruction.

Students seeking the master's degree may take Education 795A and 795B as two of the electives, thus completing the course requirements for that degree.

Special Education Specialist Credential

San Diego State University offers curricula for the Special Education Specialist Credential in the five areas: Communication Handicapped, Learning Handicapped, Severely Handicapped, Physically Handicapped, and Gifted. For information concerning the Communication Handicapped, the student is referred to the Department of Speech Pathology and Audiology. For information concerning the other specialties, the student is referred to the Department of Special Education.

The five areas authorize the holder to teach the types of exceptional children listed:

- Communication Handicapped.
- Learning Handicapped.
- Severely Handicapped.
- Physically Handicapped.
- Gifted.

Requirements for Admission

- Formal application to the Department of Special Education.
- Admission to the program for the Single Subjects Credential (secondary) or Multiple Subjects Credential (elementary).
 -or-
 A basic teaching credential.
- Interview(s) with a faculty member in the Department of Special Education or Communicative Disorders.

Program

Persons interested in the Special Education Specialist Credential shall:

- Concurrently or prior to completion of the Specialist Credential, complete the Single Subjects Credential (preliminary or clear) or the Multiple Subjects Credential (preliminary or clear).
- Complete one year of study in Special Education, including:
 - The generic course work: Special Education 500, 501, 502.
 - Advanced work in area of specialization:
 - Special Education 510, 511, 512, 513 series.
 - Special Education 420 series, 421, 422 and 423, or 480 series.
 - Electives—six units—on advice of adviser.

* Applies only to specialization in Learning Handicapped, Severely Handicapped, Physically Handicapped, and Gifted. Those interested in the Communication Handicapped specialization are referred to the Department of Communicative Disorders.

Courses Acceptable on Master's Degree Programs in Education

UPPER DIVISION COURSES IN EDUCATION

511. Reading Diagnosis (3)

Two lectures and three hours of laboratory.

Prerequisites: Valid teaching credential and consent of instructor.

Diagnosis of reading difficulties and exploration of remedial techniques.

550. Philosophy of Cultural Pluralism in Education (3)

Study of culture from a multidisciplinary and holistic perspective provides a thorough understanding of the interrelationship between education and cultural patterns and the roots of cultural pluralism; emphasis on establishing a theoretical framework for appreciating cultural and linguistic diversity in children.

553. Multicultural Oral Language Assessment Training (3)

Prerequisite: Education 550.

Orientation to study of selected culture's linguistic characteristics; comparison with Standard American English for distinguishing problems of linguistic interference on oral language performance of pupils as a basis for prescribing individualized instruction; emphasis on home/community context of child language.

565. (158.) Occupational Student (3) S

Prerequisite: Education 380 or 381.

The learning process and individual differences, behavioral characteristics of youth, race and ethnic relations in the schools.

568. (128D.) Human Relations and Counseling in Adult Education (2)

Prerequisite: Possession of a valid teaching credential.

Principles, procedures and issues appropriate to human relations and counseling in adult education.

593. (128E.) Workshop in Adult Education (1-3) II

Prerequisite: Possession of a valid teaching credential.

Designed to meet the needs of individuals or groups of adult educators who wish to study special problems in adult education.

GRADUATE COURSES IN EDUCATION

Students without classified graduate standing are not admitted to 600- and 700-numbered courses in Education.

Twelve units of professional education are prerequisite for enrollment in all graduate courses, except Education 630, 666 and 680, which require special clearance from the Coordinator of Higher Education Programs; and courses in Counselor Education.

621. (246.) Advanced Diagnosis in Reading (3)

Prerequisites: Psychology 654 and Elementary Education 521.

Principles and techniques of individual and group diagnosis of reading difficulties. Experience in administration and interpretation of individual and group instruments in diagnosis. (Formerly numbered Elementary Education 621.)

630. (251.) Seminar in Instructional Methods and Materials: Community College (2)

Prerequisites: Education 666 and concurrent registration in Education 700.

The teaching process at the community college level, including lesson planning, utilization of audiovisual and other instructional materials, and procedures of evaluation.

632. Change in Education (3)

Prerequisite: Valid teaching credential.

Examination of the process of change in education, analysis of recent major changes and study of techniques for effecting change.

650. Bilingual/Cross-Cultural Curriculum Development (3)

Prerequisite: Advancement to candidacy or teaching credential.

Study of competency-based education techniques; development of skills in devising performance criteria and criterion-referenced tests in bilingual-bidialectal/cross-cultural situations; development of individualized instruction and program planning strategies.

651. Bilingual/Cross-Cultural Teaching Strategies (3)

Prerequisite: Advancement to candidacy or teaching credential.

Examination of existing bilingual/cross-cultural teaching materials and skills in adapting these materials for instruction; emphasis on methodology for the bilingual/cross-cultural classroom.

652. Topics in Reading Education (1-6)

Prerequisite: Valid teaching credential.

A variety of instructional sequences, each focusing on a single topic or competency in reading instruction. Topics differ each semester to adjust to current trends, in-service needs and resource availability.

660. (220.) Advanced Educational Psychology (3)

Prerequisite: Elementary Education 362 or Secondary Education 411.

Advanced study of the research in educational psychology and its application to learning and human growth.

661. (221.) Seminar in Educational Measurement (3)

Problems in educational testing. Emphasis on construction, administration and validation of teacher-made tests.

666. (223.) Educational Psychology: Community College (2)

Prerequisite: Credit or concurrent registration in Education 680.

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.

670. Simulation and Games (3)

Prerequisite: Open to teachers and those enrolled in education credential programs. The use and construction of simulations and games for education. (Formerly numbered Secondary Education 618.)

672. Values Education (3)

Prerequisite: Valid teaching credential or enrollment in a credential program.

Analysis of various strategies that promote clarification of values and moral dilemmas. Development of classroom strategies to measure values and implement value clarification.

674. Schools and Changing Sex Roles (3) I

Prerequisite: Open to teachers and those enrolled in education credential programs.

Impact of schools upon the role of males and females and the role the educational systems play in maintaining traditional roles. (Formerly numbered Secondary Education 685.)

680. (201.) The Community College (3)

Overview of philosophy, history, aims, scope, function, outcomes, principles and problems of the community college. Relation of the community college to secondary and higher education.

682. (202.) Social Foundations (2 or 3)

Prerequisite: Admission to teacher education.

Sociological, historical, and philosophical foundations of American education and their influences on present-day educational practices.

683. (204.) Comparative Education (3)

The contemporary educational ideas and practices of various countries of the world and their impact on our culture and education.

685. (206.) Philosophy of Education (3)

Prerequisite: Education 383.

Advanced study of philosophical backgrounds of educational thought; a study of comparative philosophies, and an analysis of selected current trends and problems.

686. (207.) Educational Sociology (3)

Prerequisite: Education 383.

A study of the social, economic, political and moral setting in which present-day American education functions.

687. (208.) Workshop in Community Influences on Learning and Curriculum Planning (1-3)

Prerequisite: Teaching experience.

Advanced study of community influences on learning and child growth and development, and of group techniques; implications for curriculum planning. Provides opportunity for work on individual problems of the participants. Maximum credit six units.

688. (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.

689. (257.) Workshop in Intercultural Education (3)

A cooperative workshop sponsored by the University and local school districts to study trends in intercultural education in American schools, including the examination and construction of units, curricular and instructional materials and techniques.

690. (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.

691. (212.) Seminar in Educational Research Design (3)

Prerequisite: Education 690.

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.

700. (316.) Directed Teaching: Community College (4) Cr/NC

Prerequisites: Education 666 (not required for psychology majors) and 680, approval of the Community College Admissions Committee, and concurrent registration in Education 630.

Systematic observation, participation, and teaching under supervision in a community college. A weekly seminar or conference is required. Application to take this course must be made in the preceding semester by preregistration with the Higher Education Programs Coordinator.

701. Field Experience as a Reading Specialist (4)

Prerequisites: Education 511, 621, 631, 651 and consent of the instructor.

Supervised experience as a Reading Specialist. Approval of local school district required in the semester prior to registration.

720. Internship in Community College Education (2-6) Cr/NC

Prerequisites: Education 666, 680 and teaching or administrative experience in a community college.

Supervised internship experience in community college administration, curriculum design or other appropriate emphases.

795A-795B. (295A-295B.) Seminar (3-3)

Prerequisites: Education 690 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.

798. (298.) Special Study (1-6) Cr/NC

Individual study. Maximum credit six units.

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

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

UPPER DIVISION COURSES IN COUNSELOR EDUCATION**506-S. (191-S.) Guidance Conference (1-3) S**

Prerequisite: Consent of conference director.

A series of lecture and discussion sessions centering on current problems in counseling and guidance. Designed to serve the needs of any person desiring to keep informed of developments in this area.

GRADUATE COURSES IN COUNSELOR EDUCATION**601. Student Personnel Services in Higher Education (3)**

Philosophy, goals and objectives of Student Personnel Services in Higher Education. Focus on supportive services and their administration.

610A-610B. (225A-225B.) Determinants of Human Behavior (3-3)

Implications of theory and research in behavioral sciences for the understanding of human behavior. Counselor Education 610A deals with personality theories and psychological determinants of behavior; 610B with social and cultural determinants.

615. Multicultural Dimensions in Counseling (3)

Issues, insights and techniques for improving effectiveness in working with culturally different populations.

616. Counselors as Change Agents: Theory and Practice (4)

Three lectures and three hours of laboratory.

Organizational models, system analysis, power, and change theories and strategies as applied to educational institutions. Laboratory emphasis on change techniques for counselors and student personnel workers.

620. (226.) Guidance Services in Public Education (3)

Historical, philosophical and legal bases of pupil personnel services; staff roles and relationships in a variety of organizational patterns.

621. Introduction to School Psychology (3)

Introduction to school psychology: roles (assessing, counseling, consulting) skills (innovative techniques, consultation); and issues (modifying the system, multicultural impact).

630. (229.) Workshop in Counseling (3)

Prerequisite: Consent of instructor.

Application of principles and procedures to specific situations for improvement of counseling services. Individual problems emphasized. May be repeated with new content. Maximum credit six units applicable on a master's degree.

640. (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 Counselor Education 645. Offered during summer sessions only in combination with Counselor Education 650 as 645.

641A-641B. Individualized Appraisal of Learning Characteristics (4-4)

Three lectures and three hours of laboratory.

Prerequisite: Counselor Education 640.

Administration and interpretation of instruments and techniques for assessing learning characteristics of children from multicultural settings. 641A: Scholastic status, learning aptitudes, social-emotional maturity, interpersonal relations and behavioral adjustment. 641B: Individualized intellectual assessment of school-aged children.

645. (237-S.) 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 Counselor Education 640 or 650. Application to take the course must be made early during the preceding semester.

650. (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 Counselor Education 645. Offered during summer sessions only in combination with Counselor Education 640 as 645.

651. Counseling Women in Transition (3)

Development of counseling skills in career development, educational, psychological and social forces affecting contemporary women and men. Impact of these forces upon relationships between the sexes and personal definitions of femininity/masculinity.

660. (233.) Theory and Process of Counseling (4)

Three lectures and three hours of laboratory.

Prerequisite: Counselor Education 610A.

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 Counselor Education 667 or Psychology 452 or 650. Offered during summer sessions only in combination with Counselor Education 670 as 667.

667. (238-S.) 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 Counselor Education 660 or 670. Application to take the course must be made early during the preceding semester.

670. (234.) Theory and Process of Group Counseling (4)

Three lectures and three hours of laboratory.

Prerequisites: Counselor Education 610A and 610B.

Group process and individual growth, theories of group interaction, sensitivity training and group leadership techniques. Not open to students with credit in Counselor Education 667. Offered during summer sessions only in combination with Counselor Education 660 as 667.

680A. (235A.) Introduction to the Rehabilitation Process (3)

Two lectures and three hours of laboratory.

Prerequisite: Admission to Rehabilitation Counselor Program.

Background and legislation related to vocational rehabilitation; overview of client services and role and function of the rehabilitation counselor as a professional person. Orientation to community rehabilitation agencies.

680B. (235B.) Medical Aspects of Disability (3)

Two lectures and three hours of laboratory.

Prerequisite: Admission to Rehabilitation Counselor Program.

Orientation to medicine and illness in relation to work capacity and work outlook. Focus on major diseases and impairments resulting in vocational disability. Lecture and clinical seminars.

680C. (235C.) Psychological Aspects of Disability (3)

Two lectures and three hours of laboratory.

Prerequisite: Admission to Rehabilitation Counselor Program.

Analysis of the psychological component to illness and disease. Focus on functional disorders and vocational implications. Lecture and clinical seminars.

680D. (235D.) Placement of the Disabled (3)

Two lectures and three hours of laboratory.

Prerequisite: Admission to Rehabilitation Counselor Program.

Determination of employment needs of disabled clients, case study method. Follow-through to placement. Continuous survey of employment needs and opportunities in the wider community.

710A-710B. (239A-239B.) Professional Seminar (3-3)

Prerequisites: Education 645; six units from Counselor Education 640, 650, 660 and 670.

Study of selected areas in counseling and rehabilitation culminating in a written project with emphasis on research, counseling, and/or rehabilitation as a profession. Topic to be announced in class schedule.

720. (330.) Internship (2-6) Cr/NC

Supervised internship experience in counseling or school psychology 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.

730. (331.) Field Work in Counseling (2-6) Cr/NC

Prerequisite: Counselor Education 660.

Application of concepts and procedures of counseling or school psychology services in appropriate school or agency setting. Daily observation and practice. Weekly seminar sessions with university staff. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable on a master's degree in counseling; maximum credit nine units applicable on master's degree in Rehabilitation Counseling.

740. (332.) Practicum: Individual Counseling (3) Cr/NC

Prerequisite: Counselor Education 660.

Supervised experience in individual counseling and career planning. Maximum credit six units applicable on a master's degree in counseling; maximum credit nine units applicable on master's degree in Rehabilitation Counseling.

741. Practicum: Group Counseling (3) Cr/NC

Prerequisite: Counselor Education 670.

Supervised experience in group counseling and career planning. Maximum credit six units applicable on a master's degree.

750. (333.) Advanced Seminar and Practicum: Individual Counseling (3-6) Cr/NC

Supervised experience in individual counseling and study of problems, issues, and research.

751. Seminar and Practicum: Group Counseling (3-6) Cr/NC

Prerequisite: Counselor Education 741.

Supervised experience in group counseling, study of problems, issues and research.

752. Seminar & Practicum: School Psychology (3-6) Cr/NC

Prerequisite: Counselor Education 621.

One lecture and six hours of practicum for three units.

Advanced theories of learning and development of normal and exceptional pupils from multicultural backgrounds. Application of standard and innovative school psychology practices.

760. Advanced Seminar in School Psychology (3)

Prerequisite: Counselor Education 621.

Study of selected areas in school psychology which culminates in a written project with emphases on research, problems and/or issues. Topic to be announced in class schedule.

GRADUATE COURSES IN EDUCATIONAL ADMINISTRATION**600. (260.) Principles of School Administration (3)**

Prerequisite: Teaching credential.

Federal, state and local school administrative relationships including the financial and legal structure at these three levels.

610. (261.) Education Leadership (3)

Prerequisite: Teaching credential.

Concepts and techniques of leadership, analysis of the factors and practice in the procedures of group and individual leadership in four areas: (a) the community; (b) the teaching staff; (c) the student personnel; (d) the professional field of educational administration and supervision.

620. (262.) Legal and Financial Aspects of School District Policies (3)

Prerequisite: Teaching credential.

Relationship of the school district to attendance units. The legal basis for policy formation in the selection and retention of certified personnel, in the admission and assignment of pupils, in the instructional programs and in related budgetary considerations.

630. (263.) Curriculum Development and Evaluation (3)

Prerequisite: Teaching credential.

Curriculum development in both elementary and secondary schools, with emphasis on interrelationships between these levels, responsibilities of curricular and supervisory personnel, and use of research.

640A-640B-640C. (264A-264B-264C.) Seminar in Elementary School Administration and Supervision (2-2-2)

Prerequisites: Educational Administration 600, 610, 620, 630, and admission to Program of Educational Administration; concurrent registration in 660A-660B-660C.

Analysis of theories and practices in the administration and supervision of the elementary school.

650A-650B-650C. (265A-265B-265C.) Seminar in Secondary School Administration and Supervision (2-2-2)

Prerequisites: Educational Administration 600, 610, 620, 630, and admission to Program of Educational Administration; concurrent registration in 670A-670B-670C.

Analysis of theories and practices in the administration and supervision of the secondary school.

660A-660B-660C. (266A-266B-266C.) Field Experience in Elementary School Administration and Supervision (1-1-1) Cr/NC

Prerequisite: Concurrent registration in Educational Administration 640A-640B-640C.
Field experience in the elementary schools. Approval of local school district required in the semester prior to registration.

670A-670B-670C. (267A-267B-267C.) Field Experience in Secondary School Administration and Supervision (1-1-1) Cr/NC

Prerequisite: Concurrent registration in Educational Administration 650A-650B-650C.
Field experience in the secondary schools. Approval of local school district required in the semester prior to registration.

680. (268.) Seminar in School Administration and Supervision (1-6)

Prerequisite: Teaching credential and consent of instructor.
School administration and supervision in a specialized field, such as the community college, a subject field, or designated services. Field experiences when appropriate. Maximum credit six units.

700. (280.) Seminar in Legal and Financial Aspects of School District Management (3)

Prerequisites: Teaching credential, and Educational Administration 600, 610, 620, 630.
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.

710. (281.) Seminar in School-Community Relationships (3)

Prerequisites: Teaching credential, and Educational Administration 600, 610, 620, 630.
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.

720. (282.) Seminar in School District Personnel Management (3)

Prerequisites: Teaching credential, and Educational Administration 600, 610, 620, 630.
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.

730. (283.) Seminar in District Curriculum Development, Evaluation and Improvement (3)

Prerequisites: Teaching credential, and Educational Administration 600, 610, 620, 630.
School district curricular development from kindergarten through community college, relationships of the superintendent and central administrative staff to regular staff and supervisory staff.

740. (284.) Advanced Seminar in School Administration and Supervision (3)

Prerequisites: Teaching credential, and Educational Administration 700, 710, 720, 730.
An intensive study of a selected area in school administration and supervision. Typical courses in this area are school law, school finance, school supervision, personnel procedures. May be repeated with new content. Maximum credit nine units.

750A-750B. (286A-286B.) Seminar in School Building Construction and Utilization (3-3)

Prerequisite: Possession of Administration or Supervision Credential, or consent of instructor.
Credit or concurrent registration in Educational Administration 750A is prerequisite to 750B.
School building construction and utilization: the development of new facilities from the planning stage to complete utilization; remodeling.

760. (360.) Internship in School Administration and Supervision (3-6) Cr/NC

Prerequisites: Teaching credential and consent of instructor.
Internship for prospective school administrators in the public schools. Released time, permission of school district, and preregistration with Coordinator of Program of Educational Administration previous semester required.

UPPER DIVISION COURSES IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

540. (140.) Educational Technology (3) I, II, S

Two lectures and three hours of laboratory.
Applications of educational technology to instruction and learning. Individualization through the use of media. Includes film, TV, simulation, programmed instruction, computers and multi-media.

541. (141.) Production of Instructional Materials (3) I, II, S

Six hours of activity.
Planning and preparing instructional materials for classroom use. Independent study centers, transparencies, film, charts, lettering aids, learning games.

542. Advanced Production Techniques (3)

Six hours of activity.
Prerequisite: Educational Technology and Librarianship 541.
Application of communication principles, skills and techniques pertaining to the design and production of light and heat sensitive instructional materials to problems of educational communication and instructional development.

544. (144.) Instructional Materials Design (3) I, II

Systematic approach to instructional design. Review of research and theory in materials design and programmed instruction. Development and validation of programmed materials in various formats.

546. (146.) Basic Reference Materials (3) I, II

General reference books, bibliographies and source materials with emphasis on their use in the school library media center.

547. (147.) Selection of Instructional Materials (3) I, II

Prerequisite: Educational Technology and Librarianship 445.
Selection criteria and development of written policy statements. Annotations, reviewing media, standard catalogs and bibliographies.

548. (148.) Cataloging and Classification (3) I, II

Two lectures and three hours of laboratory.
Prerequisite: Educational Technology and Librarianship 445.
A practical approach to organizing instructional materials in school library media centers. Descriptive cataloging, classification, and choice of subject headings. Basic knowledge of typing helpful.

549. Ethnic Materials for Children and Young People (3)

Six hours of activity.
Survey and evaluation of instructional material for children and young people of varied ethnic and cultural groups. Opportunity for selective and critical in-depth reading, listening, viewing, analysis and evaluation.

550. (150.) Workshop in Educational Technology and Librarianship (1-3)

Selected problems in educational technology and librarianship. Maximum credit six units.

553-S. (143-S.) Workshop in Educational Television (6) S

(Same course as Telecommunications and Film 320-S.)
Open to teachers and students interested in instruction by television.
The procedures and theories of television production as it pertains to closed circuit and instructional use of television. The selection and utilization of program content and the method of presenting material through the television medium will be discussed and demonstrated.

GRADUATE COURSES IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

641. Instructional Graphic Communication (3)

Six hours of activity.
Prerequisite: Educational Technology and Librarianship 541.
Application of communication principles and learning theory to the design and production of instructional graphic materials. Emphasis on design, production and evaluation of opaque and transparent visual imagery.

642. Multimedia Message Design (3)

Six hours of activity.
Prerequisite: Educational Technology and Librarianship 541.
Application of communication principles and learning theories to the design, development and integration of audio and visual media into instructional packages.

674. (274.) Seminar in Educational Technology (3) I

Prerequisite: Educational Technology and Librarianship 540.
Research reviewed and the findings related to current practices. Relationships of educational technology to educational philosophies and current issues. Recent trends evaluated.

675. (275.) Seminar in the Administration of Instructional Media Centers (3) I, II

Prerequisites: Educational Technology and Librarianship 445 and 540.

The relationship of school, district, and regional media centers to the educational program. Concepts of leadership and management, review of current practices and policies.

676. (276.) Seminar in Instructional Design (3) I, II

Prerequisite: Educational Technology and Librarianship 541.

Design and production of self-instructional sequences. Instructional materials design will be investigated. Student entry behavior, objectives, media characteristics and learning will be considered.

677. (277.) Reference Materials in Subject Areas (3)

Prerequisite: Educational Technology and Librarianship 546.

Reference materials in humanities, social sciences, and sciences with emphasis on their use in the school library media center.

678. (278.) Literature for Children (3)

Prerequisite: Educational Technology and Librarianship 547.

Literature and other library materials suited to the elementary school student. Standard, classic and current books for children; aids and criteria for selection.

679. (279.) Literature for Adolescents (3)

Prerequisite: Educational Technology and Librarianship 547.

Literature and other library materials suited to the high school student. Standard, classic and current books for the adolescent; aids and criteria for selection.

775. (375.) Directed Internship for the Instructional Media Specialist (2-6) Cr/NC

Application to take the course must be made during the preceding semester. Supervised internship in an instructional media center.

UPPER DIVISION COURSES IN ELEMENTARY EDUCATION**502. Field Experience in Early Childhood Education (1-6) I, II, S**

Prerequisite: Elementary student teaching or approved full-time teaching experience.

Supervised field experience in pre-school or primary grades. Assignments made on an individual basis to fit the candidate's background, experience and career goals. Maximum credit six units.

512. (133.) Children's Literature in Elementary Education (3) I, II

A survey of children's literature; the selection and use of material in the elementary classroom.

514. (138B.) Social Studies Unit Construction in Elementary Education (3) Irregular

Prerequisite: Elementary Education 414 or 418.

Selecting and organizing content, analyzing materials, and developing instructional units in elementary social studies for classroom use.

523. Classroom Diagnosis and Remediation of Underachievers in Mathematics (3) I, II

Six hours of activity.

Prerequisite: Teaching credential or teaching experience.

The assessment and remediation of underachievers in mathematics. Techniques in determining difficulties in mathematics and prescribing remedial work; for use by elementary and secondary classroom teachers and mathematics education specialists.

562. (151.) Measurement and Evaluation in Elementary Education (3) Irregular

The use of intelligence and achievement tests in the diagnosis and improvement of learning; construction of objective examinations; problems of evaluation in education; the elements of statistical techniques.

571. (114-S.) Seminar in Child Development (3) I, II, S

Prerequisite: One course in child development.

Patterns in human development, especially in children ages eight and younger. Interpreting child development to differentiated staff, paraprofessionals, parents and community members. Planning for continuous progress. Reporting progress to parents.

596. (135.) Workshop in Elementary Education (1-6) I, II, S

To meet the needs of individuals or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching or other suitable demonstrations will be provided for members in attendance. Interested persons should contact the Coordinator of Elementary Education. May be repeated with new content for more than six units. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN ELEMENTARY EDUCATION**610. (240.) Curriculum Construction and Evaluation in Elementary Education (3)**

Prerequisite: Credit or concurrent registration in Education 690.

Advanced study of the research in curriculum development, construction and evaluation.

611. (242.) Seminar in Reading in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 690.

Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences and interests. Students will develop individual projects or problems.

612. (244.) Seminar in Language Arts in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 690.

Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of the scientific research in the field.

613. (241.) Seminar in Mathematics in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 690.

A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school mathematics.

614. (243A.) Seminar in Social Studies in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 690.

Problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field.

615. (248.) Seminar in Science in Elementary Education (3)

Prerequisite: Credit or concurrent registration in Education 690.

Advanced study of the problems of teaching science in the elementary school with emphasis on the literature of science education.

618. (247.) Advanced Diagnosis and Treatment of Learning Difficulties (3)

Prerequisites: A teaching credential and Elementary Education 562 or Secondary Education 563.

Principles and techniques of diagnosis and treatment of difficulties in learning the school subjects. Supervised experience in working with individual pupils and their parents.

624. (243B.) Seminar in Elementary Social Studies Curriculum Development (3)

Prerequisite: Elementary Education 414 or 418, and credit or concurrent registration in Education 690.

Current theories of instruction pertaining directly to elementary social studies teaching and curriculum development; critique of current social studies courses of study and guides; experience in elementary social studies curriculum planning at the classroom, school and district levels.

710. Curriculum Development and Evaluation for Early Childhood Education (3)

Prerequisite: Nine units of elementary methods.

Philosophy of Early Childhood curriculum development. Analysis, evaluation and development of curriculum materials for children, ages eight and younger.

711. Diagnostic and Prescriptive Teaching of Young Children (3)

Prerequisite: One course in educational psychology.

Diagnosing learning needs of young children. Planning varied activities which match learning needs. Evaluation of objectives and pupil attainment. Teaching strategies for children eight and younger.

712. Community Involvement in Early Childhood Education (3)

Parent and community involvement in goal-setting, policy formation and instruction. Cultural influence on communicative skill development, personal identity and value acquisition. Identifying and utilizing community resources for early childhood education programs.

713. Organization and Supervision of Early Childhood Education Programs (3)

Planning, organizing and implementing various E.C.E. programs (e.g., nursery schools, day care center, kindergarten-primary programs). Coordination and supervision of programs for cognitive, motor and social development, health, nutrition, psychological services and staff development.

UPPER DIVISION COURSES IN SECONDARY EDUCATION**563. (152.) Measurement and Evaluation in Secondary Education (3) Irregular**

Problems of evaluation in secondary education; construction of examinations; elements of statistics; selection and interpretation of standardized measures.

564. (153.) Quantitative Methods in Educational Research (3) I, II

Basic tests of statistical significance with special reference to the interpretation of educational data.

596. (126.) Workshop in Secondary Education (1-3 or 6) I, II

Designed to meet the needs of individuals or groups of teachers who wish to develop or continue the study of some problem with the consultation of the university staff and the San Diego County Curriculum staff. May be repeated with new content for more than six units. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN SECONDARY EDUCATION**610. (250.) Curricular Problems in Secondary Education (3)**

Prerequisite: Student teaching or teaching experience.

Present status and development of the secondary school curriculum with emphasis on curriculum construction and curriculum evaluation. Opportunities provided for study of problems submitted by students.

613. (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.

614. (255.) Seminar in Advanced Curriculum and Instruction in Mathematics (3)

Factors directing the changing mathematics curriculum; recent trends and current research in the teaching of secondary mathematics.

615. Innovations in Instruction (3)

Prerequisite: Teaching experience or enrollment in the Secondary Credential Program.

An exploration of innovative instructional practice in the public and private schools, with emphasis on innovative teaching strategies. An evaluation of the motivational effect and structural validity of promising instructional practices.

616. (256.) Recent Trends in Secondary Curriculum (3)

Prerequisites: Twelve units in secondary education and consent of instructor.

Current practices and trends in secondary schools. Extensive individual work on related problems of interest to members of the class.

617. (258.) Seminar in Research in Curricular Problems (1-3)

Prerequisites: Consent of the Coordinator of Secondary Education and instructor.

Individual study by graduate students who have demonstrated exceptional ability.

667. (230.) Guidance Problems in Secondary Education (3)

The theory and practice of guidance, emphasizing advanced mental hygiene concepts needed by teachers and counselors.

673. Seminar in Curriculum and Instruction in the Social Sciences (3)

Prerequisite: Valid teaching credential and appropriate teaching experience.

Theories of content selection, social pressures which affect curriculum design of the secondary school; current research in curriculum development, trends in teaching techniques and materials. Field trips to be arranged.

681. (259.) Seminar in Secondary School Reading (3)

Prerequisite: Education 690.

Sources of research on reading; reading and criticism of selected studies; identification of research trends and needs.

790. Seminar in Secondary Education (3)

Prerequisite: Advancement to Candidacy.

Intensive consideration of selected topics of current importance in Secondary Education. May be repeated with new content. Maximum credit six units applicable on a master's degree.

UPPER DIVISION COURSES IN SPECIAL EDUCATION**500. Exceptional Individuals (3) I, II, S**

Two lectures and two hours of activity.

Behavioral commonalities among exceptional pupils, knowledge of principles, procedures, techniques and tests in identifying the learning and behavioral patterns of exceptional pupils, characteristics of exceptional pupils in terms of program and developmental needs. (Formerly numbered Special Education 567.)

501. Instructional Programs for Exceptional Individuals (2) I, II, S

Prerequisite: Credit or concurrent registration in Special Education 500.

Assessment of instructional needs, planning an effective individualized school program and developing procedures for evaluating pupil progress. Identify current programs and trends for planning effective individualized and group programs for exceptional individuals.

502. Interaction and Interpersonal Processes (2) I, II, S

Prerequisite: Credit or concurrent registration in Special Education 500.

Theories and processes of communication technology as they pertain to the functioning, individually and collectively, of parent, professionals, and community agencies in promoting personal, social, and vocational growth of individuals with exceptional needs.

510. Assessment and Evaluation of Exceptional Individuals (3) I, II

Prerequisites: Special Education 501 and 502, and concurrent registration in Special Education 420.

Tests and procedures for assessing, evaluating and monitoring progress of exceptional individuals to meet their physical, intellectual, social, and emotional needs. Problems in the psychoeducational diagnosis and appraisal. Utilization of assessment procedures for the educational and rehabilitation program. (Formerly numbered Special Education 561.)

May be taken in each of the four areas of specialization.

- A. Learning Handicapped
- B. Severely Handicapped
- C. Physically Handicapped
- D. Gifted

511. Curriculum and Instruction for Exceptional Individuals (3) I, II

Prerequisites: Special Education 501 and 502; concurrent registration in Special Education 421.

Utilization of data for determining general and specific objectives to meet the needs unique to exceptional individuals. Developing and selecting materials and procedures for the achievement of these objectives. Establishing procedures for monitoring and evaluating pupil progress. (Formerly numbered Special Education 563, 568 and 573.)

May be taken in each of the four areas of specialization.

- A. Learning Handicapped
- B. Severely Handicapped
- C. Physically Handicapped
- D. Gifted

512. Personal Adjustment of the Exceptional Individual (3) I, II

Prerequisites: Special Education 501 and 502; concurrent registration in Special Education 422.

Overlay of intellectual, emotional and physical problems which influence the success or failure patterns of individuals with exceptional needs. Strategies used to facilitate the adjustment of the exceptional individual to his environment including home, school and work. (Formerly numbered Special Education 572.)

May be taken in each of the four areas of specialization:

- A. Learning Handicapped
- B. Severely Handicapped
- C. Physically Handicapped
- D. Gifted

513. Dynamics of Behavior Change and the Exceptional Individual (3) I, II

Prerequisites: Special Education 501 and 502; concurrent registration in Special Education 423.

Management and treatment of individuals with exceptional needs. Current theories and programs in behavioral change studies analyzed with reference to their applications for the educational environment.

May be taken in each of the four areas of specialization:

- A. Learning Handicapped
- B. Severely Handicapped
- C. Physically Handicapped
- D. Gifted

550. (170.) Workshop in Special Education (2-4) I, II

Curriculum and methods of teaching in an area of exceptionality; observation of demonstration class; development of materials of instruction. May be repeated once in a second area of exceptionality. Maximum credit six units applicable on any degree.

GRADUATE COURSES IN SPECIAL EDUCATION**622. (222.) The Gifted Child (3)**

Prerequisites: Elementary Education 362 and 372, or Secondary Education 411.

The abilities and characteristics of the intellectually gifted or talented; related problems of curriculum, teaching, administration and guidance.

670. (270.) Seminar in Education of Exceptional Children (3)

Prerequisite: Special Education 500.

Principles, trends and research in the education of exceptional children.

671. (271.) Seminar in Emotionally Disturbed Children and Youth (3)

Prerequisite: Special Education 670.

Advanced study of the theories, principles and practices in working with the emotionally handicapped.

672. (272.) Seminar in Education of the Gifted (3)

Prerequisite: Special Education 670.

Review of studies and investigation in learning and adjustment of the gifted, including assessment, classification, curriculum provisions, and social and emotional adjustment.

673. (273.) Seminar in Education of the Mentally Retarded (3)

Prerequisite: Special Education 670.

Review of studies and investigation in learning and adjustment of retarded children including etiology, classification, diagnosis and assessment.

771. (371.) Directed Internship: Mentally Retarded (4) Cr/NC

Application to take the course must be made during the preceding semester.

Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of the mentally retarded.

Engineering**Faculty****School of Engineering**

Dean: Glen L. Martin

Associate Dean: G. T. Craig

Department of Aerospace Engineering

Chairman: R. D. McGhie

Graduate Adviser: R. D. McGhie

Professors: Conly, Dharmarajan, McGhie, Shutts

Associate Professor: Narang

Department of Civil Engineering

Chairman: Howard H. Chang

Graduate Adviser: F. E. Stratton

Professors: Chang, Chou, Johnson, Krishnamoorthy, Noorany, Stone, Stratton

Assistant Professor: Banks

Department of Electrical Engineering

Chairman: S. Y. Chan

Graduate Adviser: M. S. Lin

Professors: Chan, Lin, Lodge, Skaar

Associate Professors: Brown, Harris, Panos

Assistant Professors: Drake, Marino, Stuart

Department of Mechanical Engineering

Chairman: R. A. Fitz

Graduate Adviser: R. Bedore

Professors: Bedore, Craig, Fitz, Hussain, Morgan, Murphy, Ohnysty, Rao

Associate Professor: Mansfield

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in engineering are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the appropriate department.

General Information

The School of Engineering offers graduate study leading to Master of Science degrees in Aerospace, Civil, Electrical, and Mechanical Engineering. These curricula are designed to augment the student's undergraduate training by advanced study in one of the various fields of engineering. Recognizing the increasing importance in modern technology of the engineer-scientist team, San Diego State University has developed an academic pattern which offers to one holding a first degree in engineering an opportunity to pursue advanced study in a specialized area of knowledge.

The undergraduate curricula in engineering, with degrees in aerospace, civil, electrical, and mechanical engineering, are accredited by the Engineers' Council for Professional Development.

Within the region served by San Diego State University are to be found many organizations which employ a considerable number of engineers holding the master of science degree.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing as described in Part Three of this catalog. In addition, the student must have a bachelor's degree in a field of engineering appropriate to the field in which he desires to earn an advanced degree or in a field closely related thereto from an institution acceptable to the School of Engineering. If a student's undergraduate preparation is deemed insufficient, he will be required to take specified courses for the removal of the deficiency. Such courses, taken as an unclassified student, are in addition to the minimum of 30 units for the master's degree in engineering.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this catalog.

Specific Requirements for the Master of Science Degrees

In addition to meeting the requirements for classified graduate standing as stated above, the student must satisfy the basic requirements for the master's degree as described in Part Three of this catalog. With the approval of the appropriate department the student working toward the master of science degree may elect either Plan A, requiring a thesis, or Plan B, requiring a comprehensive written examination. In either case, a final oral examination will be required.

The student shall arrange his course pattern, in conference with his graduate adviser, according to the following requirements for the specific degree:

Aerospace Engineering

Specific requirements for the degree: The student's program prepared in conference with and approved by the graduate adviser, must satisfy the following requirements:

1. Eighteen units of 600- and 700-numbered courses in aerospace engineering and/or engineering mechanics including EM643, EM601 and EM621, and at least nine units in one area of concentration (designated as Group A, Group B, and Group C below) and excluding Aerospace Engineering 797, 798, 799A.
2. At least six additional units of 500-, 600- and 700-numbered courses in the School of Engineering or in the Departments of Mathematical Sciences, Physics, or Astronomy, including Aerospace Engineering 799A (Plan A), if elected.
3. Six elective units of 500-, 600- and 700-numbered courses approved by the graduate adviser.

Areas of Concentration in Aerospace Engineering

Group A: Fluid Dynamics

- AE 600. (AE 200.) Seminar (1-3)
- EM 744. (EM 244.) Advanced Fluid Mechanics II (3)
- AE 612. (AE 243.) Compressible Fluid Flow (3)
- AE 716. (AE 242.) Aerodynamics of Flight (3)

Group B: Engineering Mechanics

- EM 600. (EM 200.) Seminar (1-3)
- EM 725. (EM 225.) Theory of Plates (3)
- EM 726. (EM 226.) Theory of Shells (3)
- EM 727. (EM 227.) Theory of Elastic Stability (3)

Group C: Flight Dynamics

- AE 600. or EM 600. (AE 200. or EM 200.) Seminar (1-3)
- AE 671. (AE 205.) Flight Dynamics—Theory of Flight Paths (3)
- AE 771. (AE 204.) Flight Dynamics—Stability and Control (3)
- EM 703. (EM 203.) Theory of Vibrations (3)

Civil Engineering

Specific Requirements for the Degree: The student's program, prepared in conference with and approved by the graduate adviser, must satisfy the following requirements:

1. Eighteen units of 600- and 700-numbered courses in civil engineering, excluding Civil Engineering 797, 798, and 799A.
2. At least six additional units of 500-, 600- or 700-numbered courses in the School of Engineering or in the College of Sciences, including Civil Engineering 799A, (Plan A), if elected.
3. Six elective units of 500-, 600- and 700-numbered courses approved by the graduate adviser.

Electrical Engineering

Specific Requirements for the Degree: The student's program, prepared in conference with and approved by the graduate adviser, must satisfy the following requirements:

1. Eighteen units of 600- and 700-numbered courses in electrical engineering (excluding Electrical Engineering 797, 798 and 799A).
2. At least six additional units of 500-, 600- or 700-numbered courses in the School of Engineering or, with the approval of the graduate adviser, in the College of Sciences.
3. Six elective units of 500-, 600- or 700-numbered courses approved by the graduate adviser.

Mechanical Engineering

Specific Requirements for the Degree: The student's program, prepared in conference with and approved by the graduate adviser, must satisfy the following requirements:

1. Fifteen units of 600- and 700-numbered courses in mechanical engineering excluding Mechanical Engineering 797, 798, 799A.
2. At least nine additional units of 500-, 600- or 700-numbered courses in the School of Engineering.
3. Six elective units of 500-, 600- and 700-numbered courses approved by the graduate adviser.

Courses Acceptable on Master's Degree Programs

UPPER DIVISION COURSES IN ENGINEERING

General

596. (196B.) Advanced Engineering Topics (1-3) I, II

Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.

Modern developments in engineering. Maximum credit six units for any combination of Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

Industrial and Management Engineering

510. (187B.) Methods of Analysis (3) I, II

Prerequisite: Engineering 310.

Selected topics from vector calculus, partial differential equations, and complex analysis, with engineering applications. (Formerly numbered Engineering 501.)

511. (188.) Digital Solutions of Engineering Problems (3) I, II

Prerequisites: Engineering 120 or Mathematics 107, and Engineering 310.

Digital solution of classes of engineering problems. Application of numerical methods with consideration of limitations imposed by computer and programming language characteristics. (Formerly numbered Engineering 502.)

UPPER DIVISION COURSES IN AEROSPACE ENGINEERING

510. (155.) Matrix Methods in Aerospace Structures (3)

Prerequisite: Aerospace Engineering 310B.

Static and dynamic analysis of aerospace structures utilizing matrix methods. (Formerly numbered Engineering 587.)

520. (153B.) Intermediate Aerospace Flight Mechanics (3) I

Prerequisite: Aerospace Engineering 320.

A continuation of Aerospace Engineering 320 to include orbit determination techniques, general and special perturbations, artificial satellites, rocket dynamics and transfer orbits, earth-moon trajectories, and interplanetary trajectories. (Formerly numbered Engineering 590.)

530. (152.) Aircraft Propulsion Systems (3)

Prerequisite: Aerospace Engineering 301 or Mechanical Engineering 450.

Theory and performance characteristics of aircraft propulsion systems including reciprocating engines, turbojets, ramjets, etc. (Formerly numbered Engineering 584.)

596. (196B.) Advanced Aerospace Engineering Topics (1-3) I, II

Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.

Modern developments in engineering. Maximum credit six units for any combination of Aerospace Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

GRADUATE COURSES IN AEROSPACE ENGINEERING

600. (200.) Seminar (1-3)

Prerequisite: Consent of the graduate adviser and instructor.

Intensive study of one of the following topics: Aeroelasticity, aerodynamic noise, aerothermal structural analysis, hydrodynamic stability, hypersonic flow theory, magnetofluidmechanics, rarified and real gas flows, electromagnetic propulsion, boundary layers, and other areas of aerospace engineering. Topic to be announced in class schedule.

- 612. (243.) Compressible Fluid Flow (3)**
Prerequisite: Aerospace Engineering 302 and credit or concurrent registration in Engineering 510.
Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady flight slender-body theory, methods of characteristics.
- 671. (205.) Flight Dynamics—Theory of Flight Paths (3)**
Prerequisite: Aerospace Engineering 302.
Analysis of trajectories of aircraft, missiles, satellites, and spacecraft subjected to uniform or central gravitational forces, aerodynamic forces, and thrust.
- 716. (242.) Aerodynamics of Flight (3)**
Prerequisite: Aerospace Engineering 612.
Trans-sonic flight, VSTOL, and related topics.
- 771. (204.) Flight Dynamics—Stability and Control (3)**
Prerequisite: Credit or concurrent registration in Engineering Mechanics 601.
Dynamic stability and control of aerospace vehicles. Stability derivatives, stability of uncontrolled motion, response to actuation of controls, automatic stability and control.
- 796. (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.
- 797. (297.) Research (1-3) Cr/NC**
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.
- 798. (298.) Special Study (1-3) Cr/NC**
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit three units.
- 799A. (299.) Thesis or Project (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
- 799B. Thesis or Project Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

UPPER DIVISION COURSES IN CIVIL ENGINEERING

- 518. (128B.) Advanced Surveying and Photogrammetry (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Civil Engineering 218 with minimum grade of C.
Theory and application of precise control surveys; specialized survey operations. Principles of metrical photogrammetry as applied to engineering. Map compilation from aerial photographs.
- 521. (120B.) Structural Analysis II (3) I**
Prerequisite: Civil Engineering 321 with minimum grade of C.
Analysis of statically indeterminate structures by virtual work. Advanced treatment of slope deflection, moment distribution. Arch analysis, secondary stresses in trusses. Advanced treatment of influence lines. (Formerly numbered Engineering 510.)
- 523. Timber Design (3) I**
Prerequisite: Engineering 310.
Structure and characteristics of wood; strength properties; loads and stresses; fasteners; working stress design of structural connections and members.
- 525. (190A.) Design of Steel Structures (3) II**
One lecture and six hours of laboratory.
Prerequisite: Civil Engineering 321.
Behavior of structural steel components under load. Design of steel beams, girders, columns, rigid frames and industrial building. Design of various types of connections of steel structures. (Formerly numbered and entitled Civil Engineering 425. Civil Engineering Structural Design.)
- 555. Water and Wastewater Engineering (2) I**
Prerequisite: Civil Engineering 455 with minimum grade of C.
Examination of water and wastewater. Physical, chemical and biological methods of treatment. Advanced waste treatment processes. Water reclamation.

- 562. (124.) Applied Soil Mechanics and Foundation Engineering (3) II**
Prerequisite: Civil Engineering 462.
Soil mechanics theories applied to the design of shallow and deep foundations; lateral pressure of soils, design of retaining walls. (Formerly numbered Civil Engineering 464.)
- 579. (129.) Highway Materials (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Civil Engineering 462 or 482.
Selection, design, and control of mixes of various materials used in highway construction practice. Emphasis on strength and properties of plain concrete and asphalts. (Formerly numbered Engineering 521.)
- 596. (196B.) Advanced Civil Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in civil engineering. Maximum credit six units for any combination of Civil Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

GRADUATE COURSES IN CIVIL ENGINEERING

- 600. (200.) Seminar (2 or 3)**
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in advanced civil engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 605. (205.) Prestressed Concrete Structures (3)**
Prerequisite: Civil Engineering 321 with minimum grade of C.
Fundamental concepts of prestressed concrete theory. Design applications to various types of structures.
- 606. (206.) Matrix Analysis of Structures (3)**
Prerequisite: Civil Engineering 421 with minimum grade of C.
Development of matrix methods for the analysis of structural systems. Force methods, displacement methods. Application of the digital computer to structural analysis.
- 607. (207.) Dynamics of Structures (3)**
Prerequisite: Civil Engineering 321 with minimum grade of C.
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.
- 610. (210.) Finite Element Analysis of Structures (3)**
Prerequisites: Engineering 120 and Civil Engineering 321 with minimum grade of C.
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.
- 620. (220.) Traffic Engineering (3)**
Prerequisite: Civil Engineering 482 with minimum grade of C.
Traffic characteristics and studies. Control and regulation of street and highway traffic. Parking facilities, mass transportation, traffic engineering administration.
- 622. (222.) Mass Transit Engineering (3)**
Prerequisite: Civil Engineering 481 with minimum grade of C.
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.
- 630. (230.) Open Channel Hydraulics (3)**
Prerequisite: Civil Engineering 444 with minimum grade of C.
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.
- 635. (235.) Water Quality Engineering (3)**
Prerequisite: Civil Engineering 555 with minimum grade of C.
Development of water quality criteria. Survey of current methods of water treatment, wastewater treatment and water renovation. Economic considerations of water quality management.

636. (236.) Water Quality Processes (3)

Prerequisite: Civil Engineering 555 with minimum grade of C.
Two lectures and three hours of laboratory.
Theoretical and laboratory study of the chemical and microbiological processes which govern modern water and wastewater treatment.

640. (240.) Advanced Soil Mechanics (3)

Prerequisite: Civil Engineering 462 with minimum grade of C.
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.

641. (241.) Advanced Foundation Engineering (3)

Prerequisite: Civil Engineering 464 with minimum grade of C.
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.

642. (242.) Seepage and Earth Dams (3)

Prerequisite: Civil Engineering 462 with minimum grade of C.
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.

780. (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.

781. (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.

782. (282.) Seminar in Soil Mechanics and Foundation Engineering (2 or 3)

Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in soil mechanics and foundation engineering. Maximum credit six units applicable on a master's degree.

785. (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.

796. (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.

797. (297.) Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Three units maximum credit.

799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

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

UPPER DIVISION COURSES IN ELECTRICAL ENGINEERING**520. (168.) Feedback Control Systems (3) I**

Prerequisites: Electrical Engineering 420.
Analysis of regulatory systems including servomechanisms by the Laplace transform method. System performance and stability; Nyquist, Bode, and root-locus diagrams; elementary synthesis techniques. Practical components and examples of typical designs. (Formerly numbered Engineering 568.)

521. (169.) Advanced Feedback Control Systems (3) II

Prerequisite: Electrical Engineering 520.
A continuation of Electrical Engineering 520 to include feedback compensation, advanced compensation techniques, signal flow theory, state-variable techniques, introduction to nonlinear and sampled-data control systems. (Formerly numbered Engineering 569.)

530. (162.) Transistor Circuit Analysis (3) I, II

Prerequisite: Electrical Engineering 430.
Analysis and design of transistor voltage and power amplifier circuits by use of duality and matrix methods. Feedback amplifiers, audio amplifiers, video amplifiers, power supplies and oscillators; transient analysis and noise considerations. (Formerly numbered Engineering 562.)

534. (164.) Solid-State Devices (3) I

Prerequisite: Electrical Engineering 430.
Conduction theory of solids. Characteristics of tunnel, backward, breakdown, multilayer and varactor diodes; silicon controlled rectifiers and switches, unijunction transistors, hot electron devices. Lasers and laser applications. (Formerly numbered Engineering 564.)

540. (139.) Microwave Communications (3) II

Prerequisites: Electrical Engineering 430 and 450.
Applications of Maxwell's equations to wave propagation; skin effect, circuit impedance elements; vector potential, and other time-varying electrical phenomena; waveguides and resonators, strip line circuits, electromagnetic radiation. (Formerly numbered Engineering 556.)

540L. (139L.) Microwave Measurements Laboratory (1) II

Three hours of laboratory.
Prerequisites: Credit or concurrent registration in Electrical Engineering 430L and 540.
Experimental study of microwave generation including klystrons, Gunn and IMPATT oscillators. TWT and microwave transistor amplifiers. Microwave modulation and detection. Microwave transmission and antennas. (Formerly numbered Engineering 556L.)

553. (133.) Stochastic Signals (3) II

Prerequisite: Engineering 310 or Mathematics 340A.
Random signals, correlation functions, power spectral densities, the Gaussian process, narrow band processes. Applications to communication systems.

554. (134.) Communication Principles and Circuits (3) I, II

Prerequisite: Electrical Engineering 430.
Signal transmission in linear networks; modulators and detectors; wide-band and narrow-band amplifiers; oscillators; AM, FM, and phase modulation; transient response of amplifiers.

554L. (134L.) Communication Circuits Laboratory (1) I

Three hours of laboratory.
Prerequisite: Electrical Engineering 430L.
Regulated power supply systems; oscillator, modulator, detector, and switching circuits; superheterodyne receivers and television circuitry.

555. (135.) Modulation Theory (3) I

Prerequisite: Electrical Engineering 410.
Theory and performance characteristics of modulation and demodulation; spectral characteristics and noise performance of carrier systems: amplitude, frequency and phase, pulse coded, and compound modulation.

570. (175.) Advanced Pulse and Digital Circuits (3) II

Prerequisite: Electrical Engineering 470.
Digital system design using linear elements. Microcircuit amplifiers, sweep circuits, JFETs and MOS devices, A/D and D/A converters.

- 571. (177.) Advanced Logic Design and Switching Circuits (3) I, II**
Prerequisite: Electrical Engineering 370.
Detailed synthesis of synchronous and asynchronous sequential circuits. Impact of microcircuit technology on practical logic design.
- 573. (178.) Computer Organization (3) I, II**
Prerequisites: Engineering 120 or Mathematics 107, and Electrical Engineering 370.
Data and information structure, machine and assembly language programming, arithmetic and control units microprogramming, memory devices, input-output devices, channels and operating systems concepts.
- 575. Microprocessors (3) I, II**
Prerequisites: Electrical Engineering 470 and 573.
Microprocessor organization and operation. Comparative analysis of commercially available microprocessors. Circuit design and programing of microprocessor-based computing and controller systems. (Formerly offered under Engineering 196B Advanced Topics, Engineering 503 Advanced Topics, and Electrical Engineering 596 Advanced Topics.)
- 580. (193.) Modern Power Systems I (3) I**
Prerequisites: Engineering 310, Electrical Engineering 310 and 380.
Modern power system elements; calculation of load flow, fault currents, and system stability. (Formerly numbered Engineering 550.)
- 581. (194.) Modern Power Systems II (3) II**
Prerequisite: Electrical Engineering 580.
Transient response of modern power system elements; positive, negative and zero sequence impedance; subharmonic effects. (Formerly numbered Engineering 551.)
- 596. (196B.) Advanced Electrical Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.
Modern developments in electrical engineering. Maximum credit six units for any combination of 496, 499 and 596. (Formerly numbered Engineering 503.)

GRADUATE COURSES IN ELECTRICAL ENGINEERING

- 600. (200.) Seminar (1-3)**
Prerequisite: Consent of the graduate adviser and instructor.
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.
- 604. (201.) Seminar in Electromagnetic Systems (1-3)**
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in electromagnetic systems. Maximum credit six units applicable on a master's degree. (Formerly numbered Electrical Engineering 601.)
- 605. (205.) Seminar in Communications Systems (1-3)**
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in communication theory and systems. Maximum credit six units applicable on a master's degree.
- 606. (206.) Seminar in Computer Engineering (1-3)**
Prerequisite: Consent of the graduate adviser and instructor.
Intensive study in computer engineering topics. Maximum credit six units applicable on a master's degree.
- 607. (203.) Seminar in Digital Systems (1-3)**
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in digital systems. Maximum credit six units applicable on a master's degree. (Formerly numbered Electrical Engineering 603.)
- 610. (210.) Linear System Analysis (3)**
Prerequisites: Electrical Engineering 310 and credit or concurrent registration in Engineering 510 or Mathematics 340B.
Loop and nodal system equations based on topological considerations, four-terminal network theory using matrices. Fourier integral transform theory as applied to linear system analysis. Positive real functions and associated testing methods.
- 620. (220.) Feedback Control Systems (3)**
Prerequisite: Electrical Engineering 520.
Analysis and synthesis of feedback control systems using feedback compensation. Multiple-loop control systems; a-c feedback control systems; optimization.
- 622. (222.) Sampled-Data Systems (3)**
Prerequisite: Electrical Engineering 520.
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.
- 625. (225.) State Space Analysis of Control Systems (3)**
Prerequisite: Electrical Engineering 520.
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.
- 630. (211.) Synthesis of Active and Passive Networks (3)**
Prerequisite: Electrical Engineering 610.
Frequency-domain synthesis of driving point and transfer impedances in passive and active networks. Canonical forms and network equivalents. Time-domain synthesis and considerations of pulsed-data systems. (Formerly numbered Electrical Engineering 611.)
- 631. (231.) Integrated Circuits (3)**
Prerequisite: Electrical Engineering 470.
Fabrication methods, logic gates, multivibrators, medium- and large-scale integration techniques and devices. Linear integrated circuits and MOS technology. Emphasis on proper application of devices through knowledge of circuit operation and interpretation of manufacturers' specification sheets.
- 632. (232.) Linear Semiconductor Circuit Design (3)**
Prerequisite: Electrical Engineering 530.
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.
- 634. (234.) Semiconductor RF Circuit Design (3)**
Prerequisite: Electrical Engineering 554.
Wide band amplifiers, low level RF amplifiers and mixers, IF amplifiers, AGC, tuning and stability problems, unilateralization and mismatching techniques, harmonic oscillators, VHF power amplifiers including varactor multipliers. (Formerly numbered Electrical Engineering 654.)
- 636. (216.) Noise in Electrical Devices (3)**
Prerequisite: Electrical Engineering 530.
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. (Formerly numbered Electrical Engineering 616.)
- 640. (250.) Quantum Electronics (3)**
Prerequisite: Electrical Engineering 534.
Quantum mechanics for engineers concerned with its application to solid-state devices. Basic principles and engineering applications of lasers. (Formerly numbered Electrical Engineering 650.)
- 642. (252.) Optical Communications (3)**
Prerequisite: Electrical Engineering 640.
Fundamentals of electro-optical technology from ultraviolet through infrared. Characteristics of thermal and laser radiation including generation, transmission, detection, data processing and display. (Formerly numbered Electrical Engineering 652.)
- 645. (240.) Antennas and Propagation (3)**
Prerequisite: Electrical Engineering 540.
Impedance characteristics and radiation patterns of thin linear antenna elements; field intensity calculations. Tropospheric and ionospheric propagation; propagation anomalies. (Formerly numbered Electrical Engineering 655.)
- 647. (246.) Radar Systems (3)**
Prerequisite: Electrical Engineering 540.
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. (Formerly numbered Electrical Engineering 657.)

650. (260.) Modern Communication Theory I (3)

Prerequisite: Electrical Engineering 553 or Mathematics 550.

Probability theory, random variables, random processes, Gaussian process, random signals through linear systems, noise considerations, optimum receiver design, applications to digital and wave-form communication. (Formerly numbered Electrical Engineering 660.)

651. (261.) Modern Communication Theory II (3)

Prerequisite: Electrical Engineering 650.

Estimation of signal parameters in noise. Estimation of spectral densities and correlation functions. Intersymbol interference. Adaptive and feedback systems. (Formerly numbered Electrical Engineering 661.)

653. (263.) Coding Theory (3)

Prerequisite: Electrical Engineering 553.

The theory of coding to combat noise over communication channels. Redundancy added to messages to assure arbitrarily small error rates at a given information rate. Discussion of channels and capacity. Block codes, cyclic codes, BCH codes, convolutional code.

658. (264.) Digital Processing of Signals (3)

Prerequisite: Electrical Engineering 555.

Theory of digital signal processing. Emphasis on digital filters, discrete spectrum analysis, and windows. Fast Fourier transforms. Generalized linear filtering; Cepstral analysis and deltic loops.

670. (270.) Microprogramming (3)

Prerequisite: Electrical Engineering 573.

Fundamentals of microprogramming and read only storage technology as related to the design of digital computers.

671. (271.) Computer Input/Output Devices and Systems (3)

Prerequisite: Electrical Engineering 573.

Control programs, interrupt procedures, I/O programming techniques, interfaces, channels, magnetic recording techniques, I/O devices.

672. (272.) Minicomputer Design and Applications (3)

Prerequisite: Electrical Engineering 573.

Current minicomputer architectures. CPU-oriented and universal bus-oriented machines.

676. (276.) Fault Tolerant Computing (3)

Prerequisite: Electrical Engineering 370.

Triple modular redundancy, standby sparing, quaded logic, parity and residue checking of computer systems and subsystems. Diagnostic programming and fault testing fundamentals.

677. (277.) Topics in Logic Design (3) II

Prerequisite: Electrical Engineering 571.

Review of current technical periodic literature in logic design and digital systems. Stress on specialized synthesis techniques and recent theoretical developments.

678. (278.) Electronic Digital Systems (3)

Prerequisite: Electrical Engineering 573.

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.

797. (297.) Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser.

Research in engineering. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Three units maximum credit.

799A. (299.) Thesis or Project (3) Cr/NC

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

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

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

UPPER DIVISION COURSES IN ENGINEERING MECHANICS**520. (156.) Intermediate Dynamics (3)**

Prerequisites: Engineering Mechanics 220, Electrical Engineering 210, and Engineering 310.

Kinematics and kinetics of systems of particles and rigid bodies. Dynamic analysis procedures for studying mechanical, electrical, and electromechanical systems. Variational methods. (Formerly numbered Engineering 588.)

540. (157.) Intermediate Fluid Mechanics (3)

Prerequisites: Credit or concurrent registration in Engineering Mechanics 340, and Engineering 510 or Mathematics 340B.

Kinematics of fluid motion. Conservation of mass, momentum, and energy. Ideal and viscous flows and applications. Boundary layer approximations. (Formerly numbered Engineering 583.)

541. (181.) Hydrodynamics (3)

Prerequisites: Engineering Mechanics 220, and Engineering 310 or Mathematics 340A or 530 or 533.

Kinematics, equations of continuity, energy, and momentum of perfect fluids. Introduction to conformal transformations. Three-dimensional and two-dimensional irrotational motion, with applications to physical problems. Vector notation will be used. (Formerly numbered Engineering 585.)

596. (196B.) Advanced Engineering Mechanics Topics (1-3) I, II

Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the School of Engineering.

Modern developments in engineering mechanics. Maximum credit six units for any combination of Engineering Mechanics 496, 499 and 596. (Formerly numbered Engineering 503.)

GRADUATE COURSES IN ENGINEERING MECHANICS**600. (200.) Seminar (1-3)**

Prerequisite: Consent of the graduate adviser and instructor.

Intensive study of one of the following topics: Nonlinear vibrations, random vibrations, continuum mechanics, anisotropic elasticity, energy methods, plasticity, and other areas of engineering mechanics. Topic to be announced in class schedule. Maximum credit six units applicable on a master's degree.

601. (201.) Advanced Dynamics (3)

Prerequisites: Engineering Mechanics 220, and Engineering 310 or Mathematics 340A.

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.

621. (221.) Theory of Elasticity (3)

Prerequisites: Engineering Mechanics 301 and credit or concurrent registration in Engineering 510 or Mathematics 340B.

Analysis of stress and strain: stress-strain relations; the equations of elasticity; uniqueness theorem; compatibility conditions; flexure and torsion. Vector and tensor notation will be used.

643. (243.) Advanced Fluid Mechanics I (3)

Prerequisites: Engineering Mechanics 340 and credit or concurrent registration in Engineering 510 or Mathematics 340B.

Fluid kinematics and kinetics. Conservation of mass, energy, and momentum, applied to Newtonian fluids. Navier-Stokes equations. Couette and Poiseuille flow. Potential flow. Introduction to turbulence and boundary layer theory. Vector and tensor notation will be used.

703. (203.) Theory of Vibrations (3)

Prerequisites: Engineering Mechanics 601 and credit or concurrent registration in Engineering 510 or Mathematics 340B.

Linear and nonlinear periodic phenomena as applied to discrete systems and continuous media with application to physical problems.

725. (225.) Theory of Plates (3)

Prerequisite: Engineering Mechanics 621.

Bending and buckling theory of plates; application of small deflection and large deflection theories to plates with various boundary conditions; use of approximate methods and exact methods in solution.

- 726. (226.) Theory of Shells (3)**
Prerequisite: Engineering Mechanics 621.
Membrane and bending theory of shells of revolution and shells of arbitrary shape; exact and approximate methods of solution of shells subjected to axisymmetric and arbitrary loads.
- 727. (227.) Theory of Elastic Stability (3)**
Prerequisite: Engineering Mechanics 621.
Stability of elastic systems. Differential equations of stability by summation of forces and movements, and by the variational method. Applications.
- 744. (244.) Advanced Fluid Mechanics II (3)**
Prerequisite: Engineering Mechanics 643.
A continuation of Engineering Mechanics 643. Further work in laminar and turbulent flow, and boundary layer theory. Diffusion. Applications to engineering problems.
- 796. (296.) Advanced Topics in Engineering Mechanics (2 or 3)**
Advanced study in the field of engineering mechanics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 797. (297.) Research (1-3) Cr/NC**
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING

- 510. (146B.) Advanced Machine Design (3)**
Prerequisite: Mechanical Engineering 314.
Advanced topics in strength of materials including energy methods, stress concentrations, curved beams, and thick-walled cylinders. Applications to design of machine elements. (Formerly numbered Engineering 532.)
- 512. (183.) Simulation of Engineering Systems (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Engineering 120 and 310.
Analysis and design of engineering systems using modern analog and digital computers. Simulation of dynamic systems. Application to problems in mechanics, heat transfer, thermodynamics, and control systems. (Formerly numbered Engineering 541.)
- 514. Experimental Stress Analysis (3)**
Prerequisite: Mechanical Engineering 314.
Advanced study of resistance of materials, failure theories and experimental stress analysis. Methods will include photoelasticity, brittle lacquers, strain gauges, grid methods, and analogs for determining static and dynamic stress distributions. Laboratory demonstrations. (Formerly numbered Mechanical Engineering 611.)
- 520. (147A.) Introduction to Mechanical Vibrations (3)**
Prerequisite: Engineering Mechanics 301.
Analysis of mechanical vibration; single- and multi-degree of freedom systems; free and forced vibrations; vibration isolation; vibration absorbers. Theory of vibration measuring instruments. (Formerly numbered Engineering 533.)
- 521. (147B.) Vibration, Shock and Noise Measurements (3)**
Prerequisite: Mechanical Engineering 512.
Experimental problems utilizing vibration excitation equipment, recording systems, transducers, sound analysis systems and analog computers. (Formerly numbered Engineering 534.)
- 530. (189.) Automatic Control Systems (3)**
Prerequisites: Engineering 310, Electrical Engineering 303 and Engineering Mechanics 220.
Not open to students filing an electrical engineering master plan.
Analysis of the input-output characteristics of linear, mechanical, electrical, hydraulic, and pneumatic control systems. (Formerly numbered Engineering 535.)
- 540. (109.) Nonmetallic Materials (3)**
Two lectures and three hours of laboratory.
Prerequisite: Mechanical Engineering 340.
Fundamentals of plastics, reinforced plastics, and ceramics. Analysis of effect of physical properties upon selection of a material for use in design. (Formerly numbered Engineering 530.)

- 560. (143.) Gas Dynamics (3)**
Prerequisites: Engineering Mechanics 340 and Mechanical Engineering 350.
Thermodynamics of high velocity compressible fluid flow. Shock regions; adiabatic and diabatic flow. Applications to the propulsive duct and discharge nozzles. (Formerly numbered Engineering 538.)
- 580. (142.) Elements of Energy Conversion (3)**
Prerequisite: Mechanical Engineering 350.
Principles of physics and chemistry applied to the analysis of a broad spectrum of energy conversion devices from an engineering point of view. (Formerly numbered Engineering 537.)
- 582. (144.) Thermal Environmental Engineering (3)**
Prerequisite: Mechanical Engineering 470.
Psychrometrics. Mass transfer. Two-phase flow. Heat transfer. Thermoelectric refrigeration. Change of phase. (Formerly numbered Engineering 539.)
- 584A-584B. (160A-160B.) Principles of Chemical Engineering (3-3)**
(Same course as Chemistry 500A-500B.)
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or Chemistry 310A or 410A.
Industrial stoichiometry; fluid flow and heat transfer as applied to unit operations such as evaporation, distillation, extraction, filtration, gas-phase mass transfer, drying, and others. Problems, reports, and field trips. (Formerly numbered Engineering 540A-540B.)
- 596. (196B.) Advanced Mechanical Engineering Topics (1-3) I, II**
Prerequisites: Minimum grade point average of 2.0 in mechanical engineering or approval of the department chairman.
Modern developments in mechanical engineering. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596. (Formerly numbered Engineering 503.)

GRADUATE COURSES IN MECHANICAL ENGINEERING

- 613. Engineering Design: Advanced Mechanisms (3)**
Prerequisites: Engineering 510, Mechanical Engineering 312 and 512.
A continuation of Mechanical Engineering 312. Problems from recent publications.
- 616. (276.) Bearing Design and Lubrication (3)**
Prerequisite: Engineering 510.
Friction and wear of materials. Boundary and thick film lubrication. Design of incompressible and compressible fluid bearings; rolling-element bearings.
- 621A-621B. (220A-220B.) Mechanical Vibrations (3-3)**
Prerequisites: Engineering 510, Mechanical Engineering 512 and 520.
Topics in vibration relating to mechanical design such as nonlinear vibrations, distributed mass systems, random vibrations, mobility analysis, isolater design.
- 631. (224.) Fluid Power and Control Systems (3)**
Prerequisite: Mechanical Engineering 530.
Analysis of dynamic performance of physical systems such as pneumatic, hydraulic and hot-gas. Transient forces and valve instability. Servo characteristics.
- 632. (246.) Advanced Topics in Automatic Controls (3)**
Prerequisite: Mechanical Engineering 530.
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.
- 645. (233.) Mechanical Metallurgy for Engineers (3)**
Prerequisites: Mechanical Engineering 340 and 350.
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.
- 651. (250.) Analytical Thermodynamics (3)**
Prerequisite: Engineering 310.
Advanced concepts of macroscopic thermodynamics. Application of thermodynamics to special systems.

661. (270.) Gas Dynamics (3)

Prerequisites: Engineering 510 and Mechanical Engineering 560.
Further consideration of the flow of compressible fluids in conduits. Shock fronts, unsteady flow and real gases.

663. (274.) Boundary Layers in Internal Flows (3)

Prerequisites: Engineering 510 and Mechanical Engineering 470.
Conservation laws applied to boundary layers in viscous, heat conducting fluids; analysis of the boundary layer equations; applications to internal flows.

671. (260.) Heat Transfer I (3)

Prerequisites: Mechanical Engineering 470 and Engineering 510.
Conduction Heat Transfer; Multidimensional Conduction Processes, Transient Analysis. Convection Heat Transfer; Advanced Theories of Forces and Free Convection.

675. (274.) Heat Transfer II (3)

Prerequisites: Mechanical Engineering 470 and Engineering 510.
Radiation Heat Transfer, Solar Radiation, Multimode Heat Transfer in Systems that involve change of phase.

681. (267.) Cryogenic Engineering (3)

Prerequisite: Mechanical Engineering 450.
Analysis of low-temperature processes and equipment. Physical properties of structural and other materials used in producing, maintaining, and using low temperatures.

683. (281.) Propulsion Systems for Spacecraft (3)

Prerequisites: Engineering 510 and Mechanical Engineering 450.
The physical and chemical laws that govern the performance, selection and design of nonair-breathing propulsion systems for space applications.

684. (284.) Theory of Turbomachines (3)

Prerequisite: Aerospace Engineering 301 or Mechanical Engineering 560.
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.

700. (200.) Seminar (1-3)

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. (Formerly numbered Engineering 600.)

796. (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.

797. (297.) Research (1-3) Cr/NC

Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit three units.

799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

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

Family Studies and Consumer Sciences

Faculty

Director, Family Studies and Consumer Sciences: D. M. Fulcomer
Graduate Adviser: D. W. Hewes
Credential Adviser: K. J. Martin
Professors: Cannon, Fulcomer, Gunning
Associate Professors: Josephson, Milne, Price, Stout
Assistant Professors: Dickerson, Hewes, Kwallek, Martin, Ross, Schupp

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in home economics are available to a limited number of qualified students. Application blanks and additional information may be secured from the Director, Family Studies and Consumer Sciences.

General Information

Family Studies and Consumer Sciences, in the College of Professional Studies, offers graduate study leading to the Master of Science degree in Home Economics.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing as described in Part Three of this catalog. In addition, the student must have a bachelor's degree in home economics or a related field, and satisfy the prerequisites of the courses selected. If a student's undergraduate preparation is deemed insufficient, the student will be required to complete specified courses in addition to the minimum of 30 units required for the master's degree in home economics. The student must have a grade point average of 3.0 in the last 90 units of undergraduate study, and a minimum score of 950 on the GRE Aptitude Test. The applicant must submit a letter stating reasons for choosing graduate work in Family Studies and Consumer Sciences at San Diego State University, professional goals, special interests in the discipline, and background preparation. The student must be approved for admission by graduate faculty of Family Studies and Consumer Sciences.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this catalog.

Specific Requirements for the Master of Science Degree in Home Economics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units including at least 24 units from courses listed as acceptable on master's degree programs in home economics. At least 18 units must be in 600- and 700-numbered courses, including Family Studies and Consumer Sciences 790, Research Methods, or Education 690, Procedures of Investigation and Report.

In Plan A, all students will be expected to include Family Studies and Consumer Sciences 799A, Thesis.

In Plan B, students will be expected to (a) pass a comprehensive examination; and (b) complete Family Studies and Consumer Sciences 797, Research, culminating in a paper acceptable to the student's committee.

Courses Acceptable on Master's Degree Programs in Home Economics

UPPER DIVISION COURSES

- 507. Processing Food and Nutrition Data (3) II**
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 402A and 403.
Application of computer logic to food service management, diet planning and analysis.
- 508. (108.) Advanced Food Systems Management (3) II**
Prerequisite: Family Studies and Consumer Sciences 404.
Analysis of current topics in food systems management. Application of management principles in individual special projects.
- 510. Nutrition and Community Health (3) Irregular**
Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 402A and 402B.
Exploration of nutrition problems in the community with consideration of current and potential means of resolving them.
- 518. (118.) Clothing Design: Flat Pattern (3) I**
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Problems involving principles and techniques of flat pattern construction. Development of basic sloper for purpose of interpreting new designs. Investigation of sources of inspiration and their relationship to significant trends in design.
- 519. (119.) Textile Analysis and Testing (3) II**
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 119 and Chemistry 130, 130L.
Analysis based on physical and chemical tests for quality differences due to variation in fibers, content, structure, and finishes and their suitability for specified uses.
- 520. (120.) Clothing and Human Behavior (3) I**
Socioeconomic influences on consumer clothing behavior patterns.
- 521. (121.) Clothing Design: Draping (3) II**
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Experience in creative designing through fabric manipulation. Designer problems related to mass-production techniques.
- 522. (122.) Clothing Design: Historical Influences (3) I**
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 315.
Chronological analysis of men's and women's fashions providing inspiration for original creations in clothing design.
- 536. (136.) Family Study (3) I, II**
Prerequisites: Family Studies and Consumer Sciences 135 and Sociology 101.
Dynamics of family living; attitudes, practices, social and psychological interaction and family life patterns in different cultures, social classes and ethnic groups.
- 539. Family Relationships in Literature (3) I, II**
Insights through creative literature into the variations in relationships between the sexes and between generations in various cultures and subcultures. Fiction viewed as social documents which reveal changing expectations and ways of coping with stress.
- 541. Consumer Interest (3) II**
Prerequisite: Family Studies and Consumer Sciences 240 or 440.
Analysis of consumer legislation, consumer information and consumer protection programs.
- 545. (145.) Family Housing (3) I**
One lecture and six hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 245.
Advanced housing problems at various stages of the family life cycle and the different socioeconomic levels.

- 546. Environmental Factors of Housing (3) II**
Prerequisite: Family Studies and Consumer Sciences 245.
Problems of developing effective housing for families in various cultural situations. Investigation of sociopsychological, economic and legislative factors of housing.
- 553. (153.) Supervised Field Work in Home Management (3) I, II**
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 371, 451, 536.
Management and social problems as they relate to the home and family. Supervised field work with various community agencies and selected families.
- 570. (170.) Human Development: Infancy (3) I, II**
Two lectures and three hours laboratory.
Prerequisites: Family Studies and Consumer Sciences 270 or Psychology 330; Psychology 260. Biology 350 recommended.
Physiological, psychological, social and cultural development of the human organism from birth through age two with directed observation and laboratory demonstration with infants.
- 575. (175.) The Nursery School Program (3) I, II**
Prerequisites: Family Studies and Consumer Sciences 371; concurrent registration in Family Studies and Consumer Sciences 575L for one unit only.
Methods, materials, program development, and evaluation of current trends in working with young children.
- 575L. (175L.) Laboratory Experiences in Nursery School (1-4) I, II**
Three hours of laboratory for each unit of credit.
Prerequisites: Family Studies and Consumer Sciences 371; first unit requires concurrent registration in Family Studies and Consumer Sciences 575. Application to take additional units requires prior consent of instructor.
Directed experiences in working with children in child development laboratory and other preschool situations. May be repeated with consent of instructor. Maximum credit four units.
- 576. Supervised Experiences with Young Children (3) I, II**
Nine hours of field work.
Prerequisite: Nine units in child development.
Directed experiences in various community settings. Emphasis on application of child development principles in working with young children. May be repeated with new content. Maximum credit six units.
- 577. (177.) Administration and Supervision in Nursery Schools (3) Irregular**
Prerequisite: Family Studies and Consumer Sciences 575 and 575L or teaching experience in a nursery school.
Problems of organization in conducting schools for young children; interrelationships of staff; personnel practices; communication with teaching staff, parents, and community; records and reports.
- 579. (179.) Advanced Child Study (3) I, II**
Prerequisite: Nine units in child development courses.
Physical, social, and psychological factors which determine the direction of child behavior. Readings and interpretations of scientific literature which contribute to an understanding of theories of human development
- 584. Occupational Home Economics Programs (3) I**
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences.
Vocational education legislation; development and administration of occupational and career programs in all areas of home economics.
- 590. (190.) Advanced Studies in Family Studies and Consumer Sciences (1-6) Irregular**
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences.
Advanced study of selected topics. Maximum credit nine units. No more than six units may be applied toward either the bachelor's or master's degree.

GRADUATE COURSES

- 600. (200.) Seminar: Foods and Nutrition (3)**
Prerequisites: Family Studies and Consumer Sciences 401 and 402A.
Introductory seminar of research and research publications in foods and nutrition.

603. (203.) Seminar in Food Science (3)

Prerequisite: Family Studies and Consumer Sciences 600.
Reading and analysis of basic and applied research in food science.

605. (205.) Assay for Nutrients in Foodstuffs and Tissues (3)

Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 401 and 402A-402B.
Determination of energy values, organic nutrients, and minerals in foodstuffs and tissues by chemical, biological, and microbiological methods.

606. (206.) Physiological Bases of Diet Therapy (3)

Prerequisite: Family Studies and Consumer Sciences 406. Chemistry 361B or 560B is recommended.

The biochemical and/or physiological lesions in pathological states and the modifications of diet which should accompany medical treatment to prevent or alleviate patient symptoms.

607. (207.) Child Nutrition (3)

Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 402A-402B.
Nutrition, health, and biochemical growth in children. Conditions leading to malnutrition, the prevention and correction of same.

615. (215.) Seminar: Clothing (3)

Prerequisite: Nine units in the area of clothing.
Selected problems in the field of clothing.

631. (231.) Family Life and Sex Education (3)

Prerequisite: Six units in child development and family relations.
Content, resources and alternative methods of presentation of family life and sex education for schools, colleges, churches and social agencies.

634. (234.) Seminar: Marriage Adjustment (3)

Prerequisite: Family Studies and Consumer Sciences 335.
Individual study, seminar reports, and group discussion of selected topics in marriage adjustment.

670. (270.) Seminar: Child Development and Guidance (3)

Prerequisite: Family Studies and Consumer Sciences 270 and 579.
Emphasis on personality theories and on research and clinical findings relevant to a systematic study of human development and the guidance of children.

671. (271.) Seminar in Advanced Readings in Human Development (3)

Prerequisites: Family Studies and Consumer Sciences 270 and 579.
Analysis of selected research in human development.

681. (281.) Seminar: Home Economics Education (3)

Prerequisite: Eighteen units in family studies and consumer sciences.
The study and evaluation of home economics research and philosophical principles which have implications for the secondary homemaking teacher.

682. (282.) Current Development in Home Economics Education (3)

Prerequisite: Family Studies and Consumer Sciences 483 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.

700. (204.) Seminar in Nutrition (3)

Prerequisite: Family Studies and Consumer Sciences 600.
Reading and analysis of basic and applied research in nutrition.

790. (290.) Research Methods (3)

Prerequisite: Twelve upper division or graduate units in Family Studies and Consumer Sciences.
Analysis of research in the area of Family Studies and Consumer Sciences; criteria and procedures for conducting research.

791. Research Seminar: Foods and Nutrition (1)

Prerequisite: Consent of Foods and Nutrition Graduate Faculty.
Discussion of current research by students, faculty and visiting scientists. Each student will participate and presentations will be based on current literature and research projects. Maximum credit three units applicable on a master's degree.

797. Research (3) Cr/NC

Prerequisites: Family Studies and Consumer Sciences 790 or Education 690.
Research in one of the areas of Family Studies and Consumer Sciences.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with the director and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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



French

Faculty

Chairperson, Department of French and Italian Languages and Literatures: E. R. Jackson
 Credential Adviser: T. Cox
 Graduate Adviser: H. Nelson
 Professors: Jackson, Max, Messier, Nelson, Piffard
 Associate Professors: Branan, Glasgow, Woodle
 Assistant Professors: Ghilbert, Palmer

Assistantships

Graduate teaching assistantships in French are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of French and Italian Languages and Literatures, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in French.

The staff in charge of the graduate program in French is composed of professors whose native tongue is French, or who have studied and traveled extensively in France and in other French-speaking areas, enabling them to represent authoritatively the French language and culture. Library facilities include rich resources in French literature and linguistics, including books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

Admission to Graduate Study

The student must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, the student must satisfy the following requirements: (1) an undergraduate major in French, or its equivalent, including 24 upper division units, at least six units of which must be in a survey course in French literature; (2) a GPA of 3.0 (on a 4-point scale) in all upper division French courses; (3) three letters of recommendation from professors, at least two of which should be from professors of French at the institution where the degree was granted; and (4) a short entrance examination, administered early in the semester by the graduate committee, to test a candidate's basic written and oral command of the language.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as stated in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of at least 24 units in French, of which at least 18 units must be in 600- and 700-numbered courses in French, including French 799A, Thesis, for those following Plan A.

Students, with the consent of the graduate staff, may elect Plan A, which includes French 799A, Thesis, or Plan B, which includes a comprehensive examination in lieu of the thesis.

Courses Acceptable on Master's Degree Programs in French

UPPER DIVISION COURSES

501A-501B. (112A-112B.) French Poetry (3-3)

Prerequisites: French 301 and 302.

The French poetic tradition and its development from the Middle Ages to the present.

511. (117.) Renaissance and Baroque Literature (3)

Prerequisites: French 301 and 302.

Readings from the major writers of the Renaissance and Baroque periods.

521A-521B. (111A-111B.) Seventeenth Century French Literature (3-3)

Prerequisites: French 301 and 302.

Semester I: Major seventeenth century dramatists with emphasis on Corneille, Moliere, and Racine. Semester II: Major works of seventeenth century poets and prose writers.

531A-531B. (107A-107B.) Eighteenth Century French Literature (3-3)

Prerequisites: French 301 and 302.

The works of Montesquieu, Voltaire, Rousseau, the Encyclopedistes, as well as the theatre and novel of the period. Outside reading and reports.

541. (110A.) Nineteenth Century French Novel (3)

Prerequisites: French 301 and 302.

Major novelists of the nineteenth century.

543. (105.) Nineteenth Century French Theatre (3)

Prerequisites: French 301 and 302.

Intensive study of nineteenth century plays.

551. (114.) Twentieth Century French Novel (3)

Prerequisites: French 301 and 302.

Major novelists of twentieth century France.

552. (115.) Twentieth Century French Theatre (3)

Prerequisites: French 301 and 302.

Major dramatists of twentieth century France.

Related Fields: Related courses in the fields of anthropology, geography, history, political science, comparative literature, and others, may be selected with the approval of the graduate adviser.

GRADUATE COURSES

601. (290.) Seminar in Introduction to Graduate Study (3)

Prerequisite: Eighteen upper division units in French.

Purposes and methods of research in the fields of the language and literature, the collection and collation of bibliographic material, and the proper presentation of the results of such investigation.

611. (201.) Seminar in History of the French Language (3)

Prerequisite: Eighteen upper division units in French.

The history of the French language from the beginnings through the sixteenth century.

621. (230.) Seminar in Methods of Literary Criticism (3)

Prerequisite: Eighteen upper division units in French.

Theory and practice of various traditional and modern critical approaches to specific literary texts.

701. (202.) Seminar in Medieval French Literature (3)

Prerequisites: Eighteen upper division units in French and French 611.

Readings in the principal movements, trends and genres of medieval French literature from the beginnings through Francois Villon.

711. (203.) Seminar in Literature of the French Renaissance (3)

Prerequisites: Eighteen upper division units in French and French 611.

Literature and thought of the 16th century as represented in the works of Rabelais, Montaigne, Ronsard, DuBellay, etc.

721. (250.) Seminar in Seventeenth Century French Literature (3)

Prerequisite: Eighteen upper division units in French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

731. (260.) Seminar in Eighteenth Century French Literature (3)

Prerequisite: Eighteen upper division units in French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

741. (270.) Seminar in Nineteenth Century French Literature (3)

Prerequisite: Eighteen upper division units in French.

Directed research in the works of a representative author, genre or movement. Maximum credit six units applicable on a master's degree.

751. (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.

796. (284.) Seminar in Topics in French Literature (3)

Prerequisite: Eighteen upper division units in French.

Study of movement, genre, theme, myth or individual author. May be repeated with new content. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Prerequisites: Eighteen upper division units in French and consent of staff; to be arranged with department chairman and instructor.

Individual study. Maximum credit three units applicable on a master's degree.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Geography

Faculty

Chairman, Department of Geography: W. A. Johnson

Graduate Adviser: N. H. Greenwood

Professors: Eidemiller, Finch, Greenwood, Johnson, Keen, Kiewiet de Jonge, O'Brien, Pryde,

Stutz, Taylor, Wright, Yahr

Associate Professors: Blick, Ford, Griffin, Heiges, Quastler

Assistant Professors: Colombo, Fredrich, McArthur

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in geography are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Geography, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Geography. In addition to the standard program, it is possible to pursue an emphasis in either conservation of environmental quality or transportation.

The Master of Arts degree is designed to provide advanced training for (a) students who plan to terminate their graduate studies at the master's level, and (b) those who anticipate additional work leading to the doctoral degree in geography or related fields.

Research and instructional facilities provided by the Department of Geography include an excellent map library, a research center, laboratories for physical geography, soils, cartography, and meteorology, and equipment for remote sensing studies, aerial photograph interpretation, and field studies. The social science research laboratory, located adjacent to the Department, provides specialized data collections in the social sciences, and a well equipped data processing center.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified standing as described in Part Three of this catalog. Candidates whose preparation is deemed insufficient by the graduate advising committee will be required to complete specified courses in addition to the minimum of 30 units required for the degree.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as stated in Part Three of this catalog. In addition, the student must pass a comprehensive oral examination administered by the Department of Geography covering the basic elements of the discipline and his area of specialization.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units of upper division and graduate courses selected with the approval of the Geography Graduate Committee.

Standard Program

Students electing the standard geography program must complete at least 24 units selected from courses in geography listed below as acceptable on master's degree programs. The student's program must include a minimum of 21 units in 600- and 700-numbered geography courses including Geography 600 and 610.

Students in the program may elect one of two plans, A or B, to complete the requirements for the degree. Plan A requires the writing of a thesis under Geography 799A as part of the outlined course program. If Plan B is elected, the student must complete two research papers, a minimum of three units in Geography 797, and pass a comprehensive written examination in lieu of the thesis.

Emphasis in Conservation of Environmental Quality

The requirements for students electing an emphasis in conservation of environmental quality are as follows:

1. A minimum of 30 units, including 21 units of 600- and 700-numbered courses.
2. Geography 600 (205), Seminar in Geographic Research and Techniques of Presentation (3).
3. Geography 670 (272), Seminar in Environment and Resource Conservation Theory (3).
4. At least nine units taken from the courses listed below:
 Geography 500-level courses with approval of Graduate Advising Committee
 Geography 650 (250), Seminar in Systematic Geography (3)*
 Geography 654 (255), Seminar in Urban and Settlement Geography (3)*
 Geography 659 (259), Seminar in Urban Transportation (3)
 Geography 671 (270), Seminar in Problems of Environment and Resource Conservation (3)
 Geography 675 (275), Seminar in Recreational Geography (3)
 Geography 687 (288), Seminar in Remote Sensing of the Environment (3)

*If topic is approved by student's adviser.

5. At least nine units taken from any of the following:
 Anthropology 528 (159) Cultural Ecology (3)
 Biology 520 (110) Ecology (4)
 Biology 521 (114) Advanced Ecology (3)
 Biology 525 Agricultural Ecology (3)
 Biology 528 Ecology of Renewable Resources (3)
 Biology 530 (111) Limnology (4)
 Biology 531 (113) Biological Oceanography (4)
 Biology 532 (112) Fisheries Biology (3)
 Biology 580 (109) Regional Field Studies in Biology (1-3)
 Biology 615 (250) Biogeography (3)
 Biology 621 (243) Physiological Ecology (3)
 Biology 622 (246) Behavioral Ecology (3)
 Biology 625 (244) Physical Aspects of Ecology (3)
 Biology 626 (245) Aquatic Ecology (3)
 Biology 630 (240) Seminar in Terrestrial Ecology (2)
 Biology 631 (241) Seminar in Aquatic Ecology (2)
 Biology 663 (261) Seminar in Environmental Radiation (2)
 Economics 758 (238) Seminar in Urban and Regional Economics (3)
 Economics 777 (222) Seminar in Utilities and Energy Resources (3)
 History 540 (185) Environmental History of the United States (3)
 History 635 (251) Seminar in United States History (3)
 Public Administration 512 (148) The Metropolitan Area (3)
 Public Administration 620 (250) Seminar in Management of Urban Governments (3)
 Public Administration 621 (255) Seminar in The Metropolitan Area (3)
 Public Administration 660 (260) Administration and Public Policy Development (3)
 City Planning 610 (CP 266A) Seminar in Urban Planning (3)
 City Planning 620 (CP 266B) Seminar in Urban Planning Methodologies (3)
 City Planning 630 (CP 266C) Seminar in Urban Planning Implementation (3)
 City Planning 640 (CP 266D) Seminar in Urban Planning Theory (3)
 City Planning 650 (CP 260) Seminar in Urban Theory (3)
 City Planning 660 (CP 265) Seminar in Planning Administration (3)
 City Planning 670 (CP 262) History of Urban Planning (3)
 City Planning 700 (CP 261) Urban Design and Land Use Planning Studio (6)
 City Planning 710 Seminar in Theories of Urban Design (3)
 City Planning 720 Seminar in Environmental Planning and Management (3)
 City Planning 730 Seminar in Urban Transportation Planning (3)
 Sociology 550 (150) Population Problems (3)
 Sociology 557 (157) Urban Sociology (3)
 Sociology 750 (250) Seminar in the Community (3)
 Sociology 770 (270) Seminar in Population and Demography (3)

Graduate or 500-level courses in other departments that are not listed above may be taken if approved by the geography graduate advisory committee.

6. Three units selected from:
 Geography 795 (296) Geographic Internship (3)
 Geography 798 (298) Special Study (1-3) Cr/NC
 Biology 798 (298) Special Study (1-3) Cr/NC
 Economics 798 (298) Special Study (1-3) Cr/NC
 History 798 (298) Special Study (1-3) Cr/NC
 Public Administration 798 (298) Special Study (1-3) Cr/NC
 City Planning 798 (CP 298) Special Study (1-3) Cr/NC
 Sociology 798 (298) Special Study (1-3) Cr/NC
7. Three units in:
 Geography 799A (299) Thesis (3) Cr/NC
 or
 Geography 797 (297) Research (1-3) Cr/NC

Emphasis in Transportation

The requirements for students electing an emphasis in transportation are as follows:

1. A minimum of 30 units, including 21 units of 600- and 700-numbered courses.
2. Geography 600 (205) Seminar in Geographic Research and Techniques of Presentation (3)
3. At least 12 units, nine of which will be 600-numbered to be taken from courses listed below:
 Geography 558 (160) Advanced Transportation Geography (3)
 Geography 559 (159) Urban Transportation Geography (3)
 Geography 658 (258) Seminar in Geography of Transportation (3)
 Geography 659 (259) Seminar in Urban Transportation (3)
 Geography 660 (260) Seminar in Spatial Structure of Transport Systems (3)
 Geography 654 (255) Seminar in Urban and Settlement Geography (3)*
 Geography 655 (256) Seminar in Location of Urban Activities (3)*

*May be taken only if topical offering is approved by the student's adviser.

4. At least nine units to be taken from the courses listed below:
 Civil Engineering 620 (220) Traffic Engineering (3)
 Civil Engineering 622 (222) Mass Transit Engineering (3)
 Civil Engineering 781 (281) Seminar in Transportation Engineering (2 or 3)
 City Planning 730 Seminar in Urban Transportation Planning (3)
 Geography 798 (298) Special Study (3) Cr/NC - Regulated Industries (USD Law Course)
5. Geography 795 (296) Geographic Internship (3)
 (Must be in approved transportation activity.)
6. Three units in:
 Geography 799A Thesis (3) Cr/NC (Plan A)
 or
 Geography 797 (297) Research (1-3) Cr/NC (Plan B).
7. A student should have completed a quantitative methods course prior to initiating the program, or take Geography 585, Quantitative Methods in Geographic Research (3) concurrently.

Courses Acceptable on Master's Degree Programs in Geography

UPPER DIVISION COURSES

501. (101.) **Climatic Physiography (3)**
 Prerequisite: Geography 400.
 The origin and morphology of landforms with emphasis on the external forces. Occasional field trips may be arranged.
502. (102.) **Structural Physiography (3)**
 Prerequisite: Geography 400.
 Origin and morphology of landforms with emphasis on internal forces. Occasional field trips may be arranged.
503. (103.) **Fluvial and Eolian Physiography (3)**
 Prerequisite: Geography 400.
 Flowing water and the wind as agents in shaping the land. Transportation of material by water and air, drainage basin characteristics, river channel shape and dimension, sand dunes, and loess. Occasional field trips may be arranged.

504. (104.) Coastal and Submarine Physiography (3)

Prerequisite: Geography 400.

Analysis of marine waves, of their modification in shallow waters, of coastal currents and tides. Interpretation of coastal and submarine relief in relation to environmental processes and their modification by man. Occasional field trips may be arranged.

505. (105.) Geography of Soils (3) II

Prerequisite: Geography 101.

The nature, properties and distribution of soils and their relationships to the influence of climates, landforms, and human activity. Occasional field trips may be arranged.

506. (106.) Geography of Soils Laboratory (1)

Three hours of laboratory.

Prerequisite: Credit or concurrent registration in Geography 505.

Theories of soil genesis, edaphology and structure related to empirical phenomena through laboratory experimentation and observation. Best suited to concurrent enrollment in Geography 505. Occasional field trips may be arranged.

507. (107.) Geography of Natural Vegetation (3) I, II

Prerequisite: Geography 101.

The natural vegetation associations of the world, their distribution, classification and development, including relationship to human activities.

A. Lecture course (occasional field trips may be arranged)

B. Fieldwork course

508. (100A.) Physical Climatology (3) I

Prerequisite: Geography 103.

Effects of latitude, altitude, mountains, ocean currents, wind systems, and various surfaces on the distribution of solar radiation, temperature, precipitation, and other climatic elements. Statistical reduction and interpretation of climatic data.

509. (100B.) Regional Climatology (3) II

Prerequisite: Geography 103.

The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

521. Urbanization and Modernization in Latin America (3)

Prerequisite: Geography 102, 323 or 324.

Analysis of specific aspects of urbanization and modernization processes in Latin America. Emphasis on changing spatial relationships resulting from rapid urban growth and culture change. Occasional field trips.

522. Historical Geography of Latin America (3)

Prerequisite: Geography 102, 323 or 324.

Changes in the Latin American cultural landscape over time. The peopling, exploration, settlement and changing geographical patterns of all or a part of the region. Origin and diffusion studies will be stressed.

554. (157.) Quantitative Methods of Urban Analysis (3)

Prerequisites: Geography 555 or 556, and 585.

Spatial models of urban activities and land use, population distribution and allocation, and computer applications in urban analysis, including computer methods of mapping and graphing.

555. (155.) Urban Location and Settlement Geography (3)

Prerequisite: Geography 154 or 354.

Analysis of urban and other agglomerated settlements in terms of their spatial arrangement, principal functions, economic base, and supporting areas. Occasional field trips may be arranged.

556. (156.) Internal Spatial Structure of Cities (3)

Prerequisite: Geography 154 or 354.

Geographic principles and characteristics concerning the internal structure and functioning of urban centers, including discussions of internal problems of our cities today. Field reconnaissance in the local urban "laboratory." Occasional field trips may be arranged.

558. (160.) Advanced Transportation Geography (3)

Prerequisite: Geography 358 or 559.

Topics in the spatial analysis of transportation, e.g., spatial interaction patterns, diffusion process, models in spatial analysis. Occasional field trips may be arranged.

559. (159.) Urban Transportation Geography (3)

Prerequisite: Three units of upper division urban or transportation course work in geography or related field.

Urban transportation networks and their effects, past, present and future, on the economy and physical structure of the urban region. Occasional field trips may be arranged.

566. Environmental Perception and Spatial Behavior (3)

Prerequisite: Geography 102.

Effects of social and cultural factors on man's perception and cognitive structuring of his spatial and regional physical and social environment. Effect of perceived images on migration and travel behavior.

570. Land Use Analysis (3) II

Prerequisite: Geography 370.

Problems of maintaining environmental quality in the process of land conversion from rural to urban uses with emphasis on land capability and suitability studies. Occasional field trips may be arranged.

573. (173.) Geography as Human Ecology (3)

Prerequisite: Geography 170 or 370.

Human ecology related to resource geography. Occasional field trips may be arranged.

574. (174.) Water Resources (3) II

Prerequisites: Geography 101 or 102; and 170 or 370 or 371.

Occurrence and utilization of water resources and the problems of water resource development. Occasional field trips may be arranged.

575. (175.) Geography of Recreational Land Use (3)

Prerequisite: Geography 170 or 370 or 371.

Importance of location and environment in the use, management, and quality of recreation areas.

A. Lecture course (occasional field trips may be arranged)

B. Fieldwork course

576. (176.) Geography of Marine Resources (3)

Prerequisite: Geography 101 or 102.

Economic geography of use of marine biotic and mineral resources. Occasional field trips may be arranged.

581. (181B.) Advanced Cartography (3)

Two lectures and three hours of laboratory.

Prerequisite: Geography 381.

Advanced laboratory instruction and practice in cartographic techniques.

585. (185.) Quantitative Methods in Geographic Research (3) I, II

Prerequisites: Two geography courses including one in upper division; Mathematics 118 or a higher numbered course, and Mathematics 119.

Use of quantitative methods in geographic research.

587. (187.) Remote Sensing of the Environment (3)

Two lectures and three hours of laboratory.

Prerequisites: Geography 101, 102 and consent of instructor.

Multiband spectral reconnaissance of the environment. Emphasis on multispectral photography, infrared, microwave scanning systems and multifrequency radar systems, and their uses in the study of cultural and biophysical phenomena.

589. (180.) Field Geography (3)

Prerequisites: Senior or graduate standing and the completion of at least 12 units in geography, including Geography 101 and 102, and consent of instructor.

Directed fieldwork in physical and cultural geography. Occasional field trips may be arranged.

GRADUATE COURSES**600. (205.) Seminar in 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.

610. (210.) Seminar in History of Geography (3)

Prerequisite: Approval of graduate adviser.

The evolution of concepts concerning the nature, scope, and methodology of geography.

- 620. (220.) Seminar in Regional Geography (3)**
Prerequisite: Approval of departmental graduate advisory committee.
Intensive study of a major world region, such as South America, Southeast Asia, or Northern Europe. Maximum credit six units applicable on a master's degree.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
- 650. (250.) Seminar in Systematic Geography (3)**
Prerequisite: Approval of departmental graduate advisory committee.
Intensive study of an aspect of systematic geography, such as climatology, economic geography, or graphic presentation. Maximum credit six units applicable on a master's degree.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
- 654. (255.) Seminar in Urban and Settlement Geography (3)**
Prerequisites: Geography 555 or 556 and approval of departmental graduate advisory committee.
Selected topics in urban geography. Field reconnaissance in the local urban "laboratory" is essential part of the research undertaken.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
- 655. (256.) Seminar in Location of Urban Activities (3)**
Prerequisites: Geography 556 and approval of departmental graduate advisory committee.
Systematic analysis of the locations and linkages of activities in urban areas.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
- 658. (258.) Seminar in Geography of Transportation (3)**
Prerequisite: Geography 358.
Directed study and research on selected topics in transportation geography. Occasional field trips may be arranged.
- 659. (259.) Seminar in Urban Transportation (3)**
Prerequisites: Geography 559 and approval of departmental graduate advisory committee.
Intensive study and research on topics in urban transportation geography. Emphasis on transport innovations and their impact on urban spatial patterns. Occasional field trips may be arranged.
- 660. (260.) Seminar in Spatial Structure of Transport Systems (3)**
Prerequisites: Geography 358 and approval of departmental graduate advisory committee.
Transportation systems and networks, optimum route patterns, and commodity flows.
- 670. (272.) Seminar in Environment and Resource Conservation Theory (3)**
Prerequisites: Geography 370 and 371, and approval of departmental graduate advisory committee.
Theory and general principles involved in natural resources conservation and in attaining and preserving a high level of environmental quality.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
- 671. (270.) Seminar in Problems of Environment and Resource Conservation (3)**
Prerequisites: Geography 670 and approval of departmental graduate advisory committee.
Investigation of specific problem areas in natural resources conservation or in the maintenance of environmental quality. May be repeated once for credit with different content.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
- 675. (275.) Seminar in Recreational Geography (3)**
Prerequisites: Geography 575 and approval of departmental graduate advisory committee.
Geography 170 or 370 and 371 are recommended.
Design and management of recreational areas. Emphasis on man-land relationship in natural parks of San Diego County.
A. Lecture course (occasional field trips may be arranged)
B. Coursework course

680. (281.) Seminar in Cartography (3)

Prerequisites: One course in cartography and approval of departmental graduate advisory committee.

Use of the map in geographic analysis. Problems and recent trends in cartography. Maximum credit six units applicable on a master's degree.

687. (288.) Seminar in Remote Sensing of the Environment (3)

Prerequisite: Geography 587.

The use of remote sensing techniques in the study of man's cultural and biophysical environment.

689. (280.) Techniques of Field Research (3)

Three lectures and three hours of laboratory.

Prerequisites: Geography 589 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.

A. Lecture course (occasional field trips may be arranged)

B. Fieldwork course

795. (296.) Geographic Internship (3)

Prerequisites: Approval of departmental graduate advisory committee, and consent of 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.

797. (297.) Research (1-3) Cr/NC

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

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Geological Sciences

Faculty

Chairman, Department of Geological Sciences: R. W. Berry
 Graduate Adviser: M. J. Walawender
 Professors: Berry, Gastil, Krummenacher, McEuen, Peterson, Roberts, Threet
 Associate Professors: Abbott, Kern, Ptacek
 Assistant Professors: Bertine, Dorman, Walawender

Assistantships

Graduate teaching assistantships in geology are available to a limited number of qualified students. Application blanks and additional information may be secured from the graduate adviser of the department.

General Information

The Department of Geological Sciences, in the College of Sciences, offers graduate study leading to the Master of Science degree in Geology. The curriculum provides a wide variety of advance training enabling the graduate to qualify for employment in most branches of earth science.

The present geology facilities were completed in 1960 and consist of 18,000 square feet of space equipped for classroom and laboratory instruction at both graduate and undergraduate levels and for graduate research within the basic specialties of geology, geochemistry, and geophysics. In addition to these physical facilities, the interesting and diverse geological environment of the San Diego area, and the mild climate which permits year-round field work, place San Diego State University in a highly favorable location for graduate work in the geological sciences.

Admission to Graduate Standing

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Three of this catalog. In addition, the student must have an over-all grade point average of at least 2.75 in the last 60 units of his undergraduate work and must have a preparation in geology, mathematics, chemistry, and physics at least equivalent to the minimum required for the bachelor's degree in geology at San Diego State University.

Advancement to Candidacy

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this catalog, students must pass the Graduate Record Examination in Geology (Advanced Test) and have completed in undergraduate or graduate work at least one course in each of the following: field geology, paleontology, stratigraphy, structural geology, petrography, and either geochemistry or geophysics.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing, the student must satisfy the basic requirements for the master's degree as described in Part Three of this catalog. Students will normally be assigned to Plan A with the thesis, but in exceptional circumstances, Plan B with the comprehensive examination may be substituted with approval of the department. The student's graduate program must include 24 units of 600- and 700-numbered courses in geology to include 797 (3 units), and 799A, Thesis, and six units of upper division or graduate electives approved by his departmental adviser or, if Plan B is elected, 18 units of 600- and 700-numbered courses and 12 units of upper division or graduate electives. Geological Sciences 308 and 508, Field Geology, or their equivalent as approved by the graduate adviser, are required as a part of the program if they were not a part of the student's undergraduate work.

Courses Acceptable on Master's Degree Programs in Geological Sciences

UPPER DIVISION COURSES

502. (102.) Geology of North America (3) I

Prerequisite: Geological Sciences 105.

A regional analysis of North American geology, its structural, stratigraphic, and tectonic patterns and hypotheses concerning their origin and evolution.

505. (105.) Photogeology (3) II

Two lectures and three hours of laboratory.

Prerequisites: Geological Sciences 305 and 314.

Geologic interpretation of aerial photographs, elementary stereoscopy and stereometry applied to structural and stratigraphic problems, and compilation of geologic maps from annotated aerial photographs.

506. (106.) Paleontology (3) I, II

Two lectures and three hours of laboratory.

Prerequisites: Geological Sciences 105 and Biology 100 and 100L.

Principles and methods, exemplified by a study of the morphology, classification, habit, and geologic significance of fossil invertebrates.

Vertebrate Paleontology, see Zoology 560.

507. (107.) Stratigraphy (3) II

Two lectures and three hours of laboratory.

Prerequisites: Geological Sciences 105 and 224.

Stratigraphic principles and practices. Consideration of the North American stratigraphic record.

508. (108B.) Field Geology (4) I, II

One lecture and three hours of laboratory and twelve Saturday field sessions.

Prerequisite: Geological Sciences 308.

Geologic investigation of an assigned area with preparation of an individual report and a geologic map.

510. (110.) Petroleum Geophysics (3) I

Two lectures and three hours of laboratory. Occasional field trips.

Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 195L, 196, 196L, 197, 197L.

Airborne, surface, and bore-hole geophysical techniques as presently used in oil exploration.

512. (112.) Mining Geophysics (3) II

Two lectures, and three hours of laboratory or occasional field trips.

Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 195L, 196, 196L, 197, 197L.

Airborne, surface, and bore-hole geophysical techniques used for delineation of ore bodies.

516. (116.) Micropaleontology (3) II

Two lectures and three hours of laboratory.

Prerequisite: Geological Sciences 506.

The morphology, classification and geologic significance of the various microfossils.

520. (120.) Ore Deposits (3) I

Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.

Geologic relations, origin, distribution, and economics of metallic and nonmetallic mineral deposits.

521. (121.) Petroleum Geology (3) II

Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.

Geologic occurrence of petroleum and the application of geologic principles in exploration and production.

524. (124.) Optical Mineralogy (3) I

Two lectures and three hours of laboratory.

Prerequisite: Geological Sciences 221.

Theory and use of the polarizing microscope for determining optical properties of minerals as an aid to their identification.

- 525. (125.) Petrography (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 524.
A study of rocks with the polarizing microscope; identification of mineral constituents; interpretation of textures; classification of rocks; problems of genesis.
- 526. (126.) Sedimentology (3) I**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 105 and 224.
Origin, description, and classification of sedimentary rocks and structures.
- 530. (130.) Geochemistry (3) I, II**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 224; Chemistry 201, 201L; Mathematics 121 and 122, or 150.
The relationship of basic chemical principles to geologic phenomena and environments, including applications to geologic exploration problems.
- 531. (131.) Advanced Geochemistry (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 530.
Application of physical-chemical methods and principles to the solution of geologic problems. Emphasis on genesis of ore deposits and pollution geochemistry.
- 540. (140.) Marine Geology (3) I**
Two lectures and three hours of discussion, demonstration, and field work.
Prerequisites: Geological Sciences 105, and either Geological Sciences 224, 314, 502, or 506.
The morphology, composition, structure, history, and geologic processes of the earth beneath the sea.
- 545. Descriptive Physical Oceanography (3) I, II**
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical environment of oceans including heat, water, and salt budgets, physical properties of sea water, sea ice, air-sea relationships, effects of light and sound, distribution of temperature, salinity, density, surface current, deep circulation, water mass formation, instruments and methods of study.
- 546. Theoretical Physical Oceanography (4) I**
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical principles behind the dynamics of oceans. Covers physical principles behind surface waves, internal waves, seiches, tsunamis, storm surges, wind wave generation and forecasting, tidal currents, air-sea interaction, heat and light transmission.
- 548. Coastal and Estuarine Physical Oceanography (3) II**
Prerequisites: Mathematics 121 and 122 or 150; Physics 124A or 195, 195L.
Physical processes of marine coastal areas and estuaries. Includes longshore currents, rip currents, real waves in shallow water, wave refraction and diffraction, mechanics of sediment transport, forces and dynamics of estuarine circulations and tides.
- 550. (150.) Engineering Geology (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 308.
Case histories selected to demonstrate the application of geology to the location, design, and maintenance of engineering projects.
- 551. (151.) Groundwater Geology (3) II**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 224.
Geologic factors controlling the occurrence, movement and development of groundwater.
- 560. (160.) X-Ray Diffraction (2) II**
One lecture and three hours of laboratory.
Prerequisites: Chemistry 200, 200L, 201, 201L; Mathematics 150; Physics 124A-124B and 125A-125B, or 195, 195L, 196, 196L, 197, 197L; and credit or concurrent registration in either Chemistry 310A or 410A, Engineering Mechanics 260, Geological Sciences 221, or Physics 354A.
Theory and application of x-ray diffraction to the study of materials.

- 573. (173.) Advanced Palynology (3) II**
One lecture and six hours of laboratory.
Prerequisite: Botany 572.
Investigating problems in anthropology, botany and geology using spores, pollen grains and microplankton.
- Related Fields:** Appropriate courses in the Departments of Biology, Botany, Chemistry, Engineering, Mathematics, Physics, and Zoology may be selected in consultation with and approval of the graduate adviser.

GRADUATE COURSES

- 600. (200.) Seminar (1-3)**
Prerequisite: Consent of instructor.
An intensive study in advanced geology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 608. (208.) Graduate Field Geology (3)**
One lecture and nine Saturday field sessions.
Prerequisite: Geological Sciences 508.
Experience in one or more specialized aspects of field mapping.
- 609. (209.) Igneous Petrology (3)**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 525.
Investigation of problems in igneous petrology, using petrography, geochemistry, and experimental methods.
- 611. (211.) Metamorphic Petrology (3)**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 525.
Investigation of problems in metamorphic petrology using petrography, geochemistry, and experimental methods.
- 612. (212.) Petrology of Carbonates (3)**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 524 and 526.
Thin-section and hand-specimen description and classification of carbonate rocks and other chemical sediments. Emphasis on recent depositional processes, diagenesis, and geochemistry.
- 620. (220.) Biostratigraphy (3)**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 507.
Development of concepts and practices in stratigraphic and geochronologic synthesis critically reviewed in context of current knowledge of the fossil record.
- 625. (225.) Paleocology (3)**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 506 and Biology 520.
Problems and methods in the study of relationships between fossil organisms and their environment: interpretation of paleoenvironment, paleoclimate, and biologic relationships among fossil organisms.
- 629. (229.) Seminar: Advanced Studies in Stratigraphy (3)**
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 507.
Regional stratigraphic patterns in North America and their historical implications.
- 635. (235.) Petrology of Terrigenous Rocks (3)**
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 524 and 526.
Thin-section and hand-specimen description and classification of sandstones and mud-rocks. Emphasis on mineralogy, modern depositional processes, environmental interpretation, and paleogeographic reconstruction.

640. (240.) Geotectonics (3)

Prerequisite: Geological Sciences 305.

A consideration of topics on continental genesis and evolution, orogeny, plate tectonics theory, and a survey of classic geologic provinces.

645. (245.) Advanced Structural Geology (3)

Prerequisite: Geological Sciences 305.

Topics in advanced structural geology in the light of petrographic, geophysical, and experimental data, combined with classic field observations.

650. (250.) Seminar: Physical Properties of Earth Materials (3)

Prerequisite: Geological Sciences 510 or 512.

Theoretical principles and instrumental techniques used to remotely determine the physical properties of earth materials.

660. (260.) Isotope Geology (3)

Two lectures and three hours of laboratory.

A survey of isotopic and geochronologic topics with individual projects in isotopic analysis.

680. (280.) Sedimentary Geochemistry (3)

Two lectures and three hours of laboratory.

Prerequisite: Geological Sciences 530.

Problems in low temperature geochemistry, including clay mineralogy and diagenesis.

685. (285.) Genesis of Ore Deposits (3)

Two lectures and three hours of laboratory.

Prerequisites: Geological Sciences 520, 525; and Geological Sciences 530 or four units of physical chemistry.

Application of mineralogy, petrography, and chemistry to an understanding of the origin of ore deposits.

797. (297.) Research (1-3) Cr/NC

Prerequisite: Consent of the department.

Supervised research in an area of geology. Maximum credit six units applicable on a master's degree.

799A. (299.) Thesis (3) Cr/NC

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

Preparation of a thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

German**Faculty**

Chairman, Department of Germanic and Slavic Languages and Literatures: L. A. Kozlik

Graduate Adviser: Julian Wulbern

Credential Adviser: H. W. Paulin

Professors: Boney, Kozlik, Paulin, Schaber, Tanaka, Westervelt, Wulbern

Associate Professor: Dunkle

Assistantships

Graduate teaching assistantships in German are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Germanic and Slavic Languages and Literatures, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in German.

The master of arts degree provides advanced training for (a) students who plan to terminate their graduate studies at the master's level, and (b) those who plan to proceed to a doctoral degree in German or in Germanic linguistics.

There is a full range of graduate courses in German literature and in Germanic linguistics, and the student may concentrate in the area of preference. Library resources, both books and periodicals, provide excellent research bases in both areas. A taped German dialect library, among the most extensive in the country, is also available for research use.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. An undergraduate major in German, including 24 upper division units, must have been completed, at least six units of which must have been in a survey course in German literature.

Advancement to Candidacy

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this catalog, students may be required to pass a qualifying examination in German given by the Department of Germanic and Slavic Languages and Literatures.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of at least 24 units in German of which at least 15 units must be in 600- and 700-numbered courses including German 600, 601, and 799A, and six units selected from German 610, 650, 655, 665, 670, 675, and 680. If Plan B is followed, the student must pass a comprehensive examination in lieu of German 799A.

Courses Acceptable on Master's Degree Programs in German

UPPER DIVISION COURSES

- 505. (148.) Applied German Linguistics (3)**
Prerequisite: German 301 and 302.
Linguistic study of modern German; integration of modern linguistic theory with the language classroom.
- 510. (150.) German Phonetics (3)**
Prerequisites: German 202 and 212.
Sounds and intonation of German.
- 515. Germanic Linguistics (3)**
Prerequisites: German 202 and 212.
Structural and comparative Germanic linguistics.
- 540. (107.) German Literature from its Beginning to the Reformation (3)**
Prerequisites: German 202 and 212.
Literature from the eighth century to about 1500.
- 545A-545B. (103A-103B.) German Literature of the Eighteenth Century (3-3)**
Prerequisites: German 202 and 212.
The literature of the German Enlightenment, the "Storm and Stress," the Classical Age. Outside readings and reports.
- 549. (115.) Goethe's *Faust* (3)**
Prerequisites: German 202 and 212.
Goethe's *Faust*, Parts 1 and 2: its philosophical content and its position in German and European literature; lectures, reading, reports.
- 555A-555B. (105A-105B.) German Literature of the Nineteenth Century (3-3)**
Prerequisites: German 202 and 212.
The literature of German Romanticism, Young Germany, Realism, and Naturalism. Outside readings and reports.
- 561A-561B. (110A-110B.) Contemporary German Literature (3-3)**
Prerequisites: German 202 and 212.
The main developments in German literature from Neo-Romanticism to the present. Outside readings and reports.
- 563. (111.) Contemporary German Drama (3)**
Prerequisites: German 202 and 212.
German drama from Hauptmann to the present.

GRADUATE COURSES

- 600. (290.) Research and Criticism (3)**
Prerequisite: Twelve upper division units in German.
Purposes and methods of research in the language and in the literature; theories and practice of literary criticism. Recommended for the first semester of graduate study.
- 601. (201.) History of the German Language (3)**
Prerequisite: Twelve upper division units in German.
The historical development of the German language, with source readings from the Gothic Bible to Luther's translation of the Bible.
- 610. (202.) Middle High German (3)**
Prerequisite: Twelve upper division units in German or six upper division units in linguistics.
The grammatical structure of Middle High German; reading and analysis of selected literary works.
- 620. Gothic (3)**
Prerequisites: German 515 or 601 or three graduate units in linguistics or six upper division units in linguistics.
Phonology, grammar and reading of Gothic texts; the relationship of Gothic to Indo-European and to other Germanic languages.
- 650. (207.) Seminar in Renaissance and Baroque Literature (3)**
Prerequisite: Twelve upper division units in German.
German literature of the sixteenth and seventeenth centuries.
- 655. (208.) Seminar in Goethe (3)**
Prerequisite: Twelve upper division units in German.
Goethe's lyric, epic, and dramatic poetry excluding *Faust*.
- 665. (206.) Seminar in the German Drama of the Nineteenth Century (3)**
Prerequisite: Twelve upper division units in German.
Representative works of German dramatic literature from Kleist to Hauptmann.
- 670. (205.) Seminar in German Lyric Poetry from Hoelderlin to Rilke (3)**
Prerequisite: Twelve upper division units in German.
The major German lyric poets from the beginnings of Romanticism to Rilke.
- 675. (203.) Seminar in the German Novelle (3)**
Prerequisite: Twelve upper division units in German.
The development of the Novelle as a literary form from Goethe to the present.
- 680. (204.) Seminar in the German Novel in the Twentieth Century (3)**
Prerequisite: Twelve upper division units in German.
Selected German novels of the twentieth century.
- 700. (265.) Seminar in Germanic Linguistics (3)**
Prerequisite: Eighteen upper division or graduate units in German.
Directed research in a specialized area of Germanic linguistics or philology. Maximum credit six units applicable on a master's degree.
- 710. (251.) Seminar in Eighteenth Century Literature (3)**
Prerequisite: Eighteen upper division units in German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the eighteenth century. Maximum credit six units applicable on a master's degree.
- 720. (255.) Seminar in Nineteenth Century Literature (3)**
Prerequisite: Eighteen upper division units in German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the nineteenth century. Maximum credit six units applicable on a master's degree.
- 730. (260.) Seminar in Twentieth Century Literature (3)**
Prerequisite: Eighteen upper division units in German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the twentieth century. Maximum credit six units applicable on a master's degree.
- 797. (297.) Research (3) Cr/NC**
Prerequisite: Advancement to candidacy.
Individual research in a specialized subject in German literature or linguistics.
- 798. (298.) Special Study (1-3) Cr/NC**
Individual study. Maximum credit six units.
Prerequisites: Eighteen upper division units in German and consent of staff, to be arranged with department chairman and instructor.
- 799A. (299.) Thesis (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
- 799B. Thesis Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Health Science and Safety

Faculty

Chairman, Department of Health Science and Safety: R. Grawunder
 Credential Adviser: W. D. Sorochan
 Graduate Adviser: L. A. Harper
 Professors: Bender, Burgess, Grawunder, Harper, McTaggart, Sorochan
 Associate Professors: Barnes, Boskin, Fellers, Kessler, Noto
 Assistant Professor: Sleet

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in health science and safety are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Health Science and Safety, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Health Science.

Close liaison among the departments concerned and with community agencies provides opportunities for realistic field experiences.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy which are described in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree in Health Science

In addition to meeting the requirements for classified graduate standing, the student must satisfy the basic requirements for the Master of Arts degree as described in Part Three of this catalog. The minimum 30-unit program consists of at least 24 units in health science and safety selected from those courses listed as applicable on master's degree programs, 21 units of which must be in 600- and 700-numbered courses. Students electing Plan A must include Health Science and Safety 791, 792, and 799A. Those electing Plan B must include Health Science and Safety 791, 792, and 797. Students electing Plan B will be required to pass a final comprehensive examination in lieu of the thesis. This examination may be repeated only once.

Courses Acceptable on Master's Degree Programs in Health Science

UPPER DIVISION COURSES

- 510. (154.) Workshop in Health Science and Safety (1-3)**
 Selected problems in health science and safety are used as a basis for workshop experiences. Maximum credit six units; maximum credit three units applicable on a master's degree.
- 520. (153.) Administration of the School Health Program (3) II**
 Administrative responsibilities of the school health program. Principles, policies, and practices involved in health instruction, health services, environment, legal implications, and community relationships.
- 552. (181.) Safety Administration (3) I**
 Prerequisite: Health Science and Safety 341.
 Designed to acquaint the student with the basic administrative elements of a modern safety program. (Formerly numbered Health Science and Safety 352.)

560. (160.) Introduction to Public Health (3) I, II

Prerequisites: Health Science and Safety 102 and 400.

Philosophy, development, organization, administration, and legal aspects of public health in the United States. Disease prevention and control, health education, and the other functions and activities of official health departments, voluntary agencies, private physicians and others engaged in professional health work.

561. (176.) Health and Medical Care (3) I, II

Prerequisite: Senior or graduate standing with a major or minor in health education or a closely related area.

Health values, concepts, and attitudes; health products and facilities; hospital care and hospitalization plans; governmental health controls; economic and cultural influences on health and medical care; professional contributions, relationships, and careers; national and international health programs. Not open to students with credit in Sociology 526.

562. (169.) International Health (3) I, II

Prerequisite: Health Science and Safety 102.

Population dynamics, vital statistics, global disease patterns, and analysis of variations among nations and cultures with respect to health problems and health care services.

573. (175.) Health in Later Maturity (3) I, II

An approach to the conservation of human resources, with emphasis on understandings, attitudes, and practices related to health in later maturity. Designed for those with a personal or professional interest in the field.

574. (172.) Habit-Forming Substances (3) I, II, S

Prerequisite: Health Science and Safety 101 or 301.

Tobacco, alcohol, and other drugs; their use, misuse and abuse.

575. (155.) Sex Education (3) I, II, S

Prerequisite: Health Science and Safety 475.

Philosophy, current procedures, and materials needed for development of healthy attitudes and scientific knowledge appropriate for the understanding of human sexuality.

597. (197.) Supervised Field Experience (1-6) I, II

Prerequisites: Community Health Education students: Health Science and Safety 401, 402 and 560. Occupational Safety and Health students: Health Science and Safety 340 and 341.

Supervised practical experience in local health agencies and/or schools. Maximum credit six units. Maximum credit three units applicable on a master's degree.

GRADUATE COURSES

600. (200.) Seminar (3)

Prerequisite: Fifteen units in Health Science and Safety.

An intensive study of advanced problems in health education. Maximum credit six units applicable on a master's degree.

601. (201.) Seminar in Interdisciplinary Factors in Health Education (3)

Prerequisite: Fifteen units in Health Science and Safety.

Synthesis of basic scientific and cultural principles which contribute to an understanding of human well-being and how it is deliberately influenced.

620. (252.) Health Science Curriculum Development (3)

Prerequisite: Health Science and Safety 320 or 321.

Structuring educational experiences in the health sciences; developing curriculum materials, performance standards and ways of incorporating health education in open learning environments.

640. (240.) Administration of Traffic Safety (3)

Prerequisites: Health Science and Safety 341 and 347.

Research and trends in traffic safety with emphasis on the problems of administration.

645. (245.) School Safety Programs and Procedures (3)

Prerequisite: Health Science and Safety 341.

Advanced consideration of school safety programs including legal bases and requirements, personnel responsibilities, liability, instruction, maintenance, and school transportation.

660. (204.) Program Planning and Evaluation in Community Health Education (3)

Prerequisite: Health Science and Safety 560.

Program planning and evaluation theories, systems and techniques in community health education.

671. (270.) Problems in Disease Control (3)

Prerequisite: Health Science and Safety 470.
New concepts in the community management of disease. Individual investigation and discussion.

672. (271.) Drug Abuse Education (3)

Prerequisite: Health Science and Safety 574.
Drug abuse education in the school and community.

791. (291.) Health Science and Safety Research (3)

Prerequisites: Health Science and Safety 490 and advancement to candidacy.
Methods and techniques of research appropriate to health science, the process by which potential problems in health science are analyzed, and the standards for the writing of research papers and theses.

792. (292.) Seminar in Analysis of Professional Literature (3)

Prerequisite: Health Science and Safety 490.
Investigation and study of literature in the fields which have an important bearing on health science and safety programs in the school and community.

793. (203.) Evaluation Instruments (3)

Prerequisite: Health Science and Safety 490.
Construction, selection and analysis of evaluation instruments in health science and safety.

797. (297.) Research (3) Cr/NC

Prerequisites: Health Science and Safety 791, 792, and advancement to candidacy.
Supervised research in an area of health science and safety. Limited to students following Plan B for the Master of Arts degree in Health Science.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department special study adviser and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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

History

Faculty

Chairman, Department of History: R. C. Detweiler
Graduate Advisers: A. Appleby, F. Stites, R. Cunniff
Graduate Coordinator: C. D. Smith
Credential Adviser: A. O'Brien
Professors: Appleby, J., Berge, Coox, Cox, Davies, Detweiler, Dunn, Hanchett, Merrill, Munter, Norman, Pincetti, Rader, Ruetten, Schatz, Smith, C., Smith, R., Starr, Steele, Strong, Sutherland
Associate Professors: Cheek, Chu, Cunniff, DuFault, Flemion, J., Flemion, P., Hamilton, Heyman, Hoidal, McDean, O'Brien, Phillips, Stites, Vanderwood, Vartanian, Weinberg
Assistant Professors: Appleby, A., Bartholomew, Filner, Oades

General Information

The Department of History, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in History and to the Master of Arts degree for teaching service with a concentration in History.

The Master of Arts degree is designed to provide advanced training for (1) students who plan to terminate their graduate studies at the master's level, and (2) those who anticipate further study leading to a doctoral degree in history or related fields.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. As an additional requirement, the student must have completed a bachelor's degree with an undergraduate major in history. Applicants who do not have an undergraduate major in history may be admitted to conditionally classified graduate standing on the recommendation of the department, but they will be held responsible for completing the minimum requirements for an undergraduate major in history. The GPA required for admission to the M.A. program in history is 2.75 for the last 60 units of the student's undergraduate work and 3.0 in the major (not necessarily history), plus a score of 950 on the GRE Aptitude Test. Students with a GPA in the major of 2.75-3.0 will be admitted if their score on the Aptitude Test during the first semester of enrollment and the attainment of a satisfactory score.

APPLICATIONS FOR THE FALL SEMESTER SHOULD BE RECEIVED BY THE GRADUATE OFFICE AND BY THE HISTORY DEPARTMENT BY MARCH 1. APPLICATIONS FOR THE SPRING SEMESTER SHOULD BE RECEIVED BY THE GRADUATE OFFICE AND BY THE HISTORY DEPARTMENT BY AUGUST 31. APPLICATIONS CAN BE SUBMITTED AFTER THESE DATES BUT ADMISSIONS MAY BE MORE RESTRICTIVE IN LIGHT OF PREVIOUS ACCEPTANCES.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as stated in Part Three of this catalog, as well as the specific requirements of the department. All students should consult the graduate coordinator.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes a major consisting of at least 24 units in history from courses listed below as acceptable on the master's degree programs, at least 18 units of which must be in 600- and 700-numbered courses. Students may elect either Plan A, requiring a thesis, or Plan B, requiring a comprehensive written and oral examination in both a major and minor field of history chosen in consultation with the graduate adviser. Required courses are History 601; six units selected from History 610, 620, 630, 640, 650, 660, or 680; three units selected from History 615, 625, 635, 645, 655; History 797; and History 799A for those students electing Plan A. Students electing Plan B must enroll in History 795 (six units) in lieu of History 797 and 799A.

Three additional units in a research seminar in history may be substituted for History 601 (in either Plan A or Plan B) with the consent of the graduate adviser. Candidates for this degree must demonstrate knowledge of either a relevant foreign language or an approved substitute in computer language or statistical methods. Other substitutes may be approved where the skills involved are directly related to the student's research interests.

Specific Requirements for the Master of Arts Degree for Teaching Service

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes a major consisting of at least 24 units in history from courses listed below as acceptable on the master's degree programs, at least 18 units of which must be in 600- and 700-numbered courses. Students may elect either Plan A, requiring a thesis, or Plan B, requiring a comprehensive written and oral examination in both a major and minor field of history chosen in consultation with the graduate adviser. Required courses are History 601; six units selected from History 610, 620, 630, 640, 650, 660, or 680; three units selected from History 615, 625, 635, 645, 655; History 797; and History 799A for those students electing Plan A. Students electing Plan B must enroll in History 795 (six units) in lieu of History 797 and 799A.

Three additional units in a research seminar in history may be substituted for History 601 (in either Plan A or Plan B) with the consent of the graduate adviser. No foreign language competency is required in this degree option.

Scholarships

The K. W. Stott Scholarship, in the amount of \$100, is awarded each June to a student who has attended San Diego State University for at least two years and who is being graduated or who has been graduated by San Diego State University with a major in history. The recipient must continue work in San Diego State University, or in any other accredited college or university, toward a higher degree or credential. The selection is made by the Department of History with approval of the Committee on Scholarships.

A Copley Scholarship of \$200 is awarded annually to a graduate student who is writing his thesis on some aspect of San Diego history. Selection is made by the Department of History with the approval of the Committee on Scholarships.

Courses Acceptable on Master's Degree Programs in History

UPPER DIVISION COURSES

Field (a). Ancient and Medieval

500A-500B. (111A-111B.) Ancient History (3-3)
Semester I: Greece to the Roman Conquest. Semester II: Rome to the 5th Century A.D.

503A-503B. (121A-121B.) Europe in the Middle Ages (3-3)
European social, cultural, and political developments from the fall of Rome to the Renaissance.

505. (123.) The Byzantine Empire (3)
The social, political, cultural, and economic development of the Eastern Roman Empire from the crisis of the third century to the fall of Constantinople in 1453.

Field (b). Modern Europe

508. (131.) The Renaissance (3)
The intellectual, artistic, and social transformation of Europe from the 14th through the early 16th century.

509A-509B. (132A-132B.) Early Modern Europe (3-3)
Continental Europe in the 16th and 17th centuries: the religious revolt and religious wars, rise of monarchy, baroque culture, the revolutions in commerce and science. Semester I: The century after Luther. Semester II: The 17th century.

510A-510B. (133A-133B.) Europe in the 18th Century (3-3)
The "Old Regime" and the influence of the Enlightenment and the Enlightened Despots are emphasized. Semester I: The 18th century to 1763. Semester II: Intellectual and social changes in the quarter century before the French Revolution.

511A-511B. (135A-135B.) Europe in the 19th Century (3-3)
Social, political, and economic developments of 19th century Europe.

512A-512B. (137A-137B.) Europe in the 20th Century (3-3)
Political and social developments from 1870 to the present.

513A-513B. (141A-141B.) History of Scandinavia (3-3)
The major political, social and economic developments in Scandinavia from the Viking Age to the present. Semester I: From the Viking Age to the end of the Napoleonic Wars. Semester II: Modern Scandinavia, 1814 to the present.

514A. (142A.) The French Revolution and Napoleonic Era (3) I
Prerequisite: History 105A-105B.
France on the eve of the Revolution; the Great Revolution, 1789-1799, the Napoleonic Era.

514B. (142B.) Modern France (3) II
Prerequisite: History 105A-105B.
The development of France since 1815.

515A-515B. (143A-143B.) The Iberian Peninsula (3-3)
Survey of Spain and Portugal and their empires, with emphasis on economic, social, and cultural developments. Semester I: From the beginnings to the early sixteenth century. Semester II: From the sixteenth century to the present.

517A-517B. (146A-146B.) Germany and Central Europe (3-3)
A social and political history of Germany and Central Europe. Semester I: From the Reformation to 1848. Semester II: From 1848 to the present.

518A-518B. (147A-147B.) Russia and the Soviet Union (3-3)
Semester I: Political, social and economic development of Russia in Europe and Asia from the earliest times to the close of the 19th century. Semester II: Emphasis on the 20th century.

519. (149.) Modern Italy (3)
The development of Italy from 1815 to the present.

520A-520B. (151A-151B.) England (3-3)
Prerequisite: History 520A is prerequisite to 520B.
Political and social history of England from the earliest times to the present day, stressing the origins of American institutions and social patterns. Recommended for majors in English.

521A-521B. (152A-152B.) Constitutional History of England (3-3)
Evolution of the common law and the development of parliamentary institutions.

522A-522B. (153A-153B.) Tudor and Stuart England (3-3)
Semester I: The Age of the Tudors. Semester II: England during the Stuart Dynasty, 1603-1714.

523A-523B. (154A-154B.) Modern Britain (3-3)
Semester I: The development of constitutional and social patterns from the Glorious Revolution to the French Revolution, emphasizing the immediate background to the American Revolution. Semester II: From the 19th century to the present, including the rise of Parliamentary democracy, imperialism and the Victorian age, and political thought from the Utilitarians to the Fabians.

526A-526B. (136A-136B.) Intellectual History of Modern Europe (3-3)
Selected problems in European intellectual history beginning with the 17th century, with special attention to social and political thought.

527A-527B. (138A-138B.) Diplomatic History of Modern Europe (3-3)
Prerequisite: History 105A-105B.
Diplomatic relations of the various European states with European and non-European powers. Semester I: From the Concert of Europe (1815) to the Era of *Realpolitik* in the late 19th century. Semester II: The diplomatic backgrounds and results of two wars.

Field (c). United States

531A-531B. (171A-171B.) Rise of the American Nation (3-3)
The settlement and development of the British colonies in North America and the American Revolution. Stresses the creation of the American nation through modification of Old World institutions in the new environment.

532A-532B. (172A-172B.) Development of the Federal Union (3-3)

Prerequisite: History 532A is prerequisite to 532B.

Political, cultural, social and intellectual aspects of the Confederation and early national period; the Convention of 1787 and establishment of the Constitution; the administrations of Washington through John Quincy Adams. This year course meets the graduation requirements in American history, institutions and ideals; 532A meets the requirement in U.S. Constitution; and 532B includes materials which meet the requirements in California state and local government.

533A-533B. (173A-173B.) Jacksonian Democracy, Civil War and Reconstruction (3-3)

Semester I: Territorial expansion, democratic politics, revivalism, and the slavery controversy. Semester II: The Civil War and Reconstruction, emphasizing political affairs and the role of Lincoln.

534. (174.) The Rise of Modern America, 1868-1900 (3)

Economic, social, political, and intellectual developments from the end of the Civil War to the close of the 19th century.

535A-535B. (175A-175B.) The United States, 1901-1945 (3-3)

The age of reform and the United States as leader of the free world.

536. (175C.) The United States in the Nuclear Age (3)

The United States since World War II.

537A-537B. (181A-181B.) The Westward Movement (3-3)

The American frontier: Expansion, exploration, settlement and building of the new states, with emphasis on frontier problems of defense, communications, finance, etc.; the development of cultural institutions. The causes, effects and results of the frontier experiences of the American people. This year course meets the graduation requirement in American history, institutions and ideals.

538A-538B. (182A-182B.) The American Southwest (3-3)

Semester I: Exploration, colonization and development of the Southwest under Spanish and Mexican rule. Emphasis on frontier institutions and Indian policy. Semester II: Anglo American penetration and acquisition of the Southwest. Themes such as boundary problems, mining, transportation, water, ranching and ethnic relations.

539A-539B. (183A-183B.) Black American Civilization (3-3)

Semester I: The Black minority group and its contributions and challenges to American civilization. African backgrounds, slavery, the abolitionists, the free Black. Semester II: Ghetto life, leadership personalities, and protest movements.

540. (185.) Environmental History of the United States (3)

The relationship of Americans to their environment from colonial times to the present with emphasis on how attitudes and values have affected personal behavior and public policy toward the land.

541A-541B. (189A-189B.) California (3-3)

Political institutions; social, cultural, economic and intellectual development; international background. Semester I: To 1850; Spanish and Mexican heritage. Semester II: 1850 to the present. History 541B will fulfill the requirement in California state and local government.

544A-544B. (176A-176B.) American Foreign Policy (3-3)

Semester I: The development of American foreign policy from the Colonial Period to the First World War. Semester II: Developments from the First World War to the present. This year course meets the graduation requirements in American history, institutions, and ideals.

545A-545B. (177A-177B.) Constitutional History of the United States (3-3)

American constitutional history since the establishment of the federal government. This year course meets the graduation requirement in U.S. Constitution and in American history, institutions and ideals.

546A-546B. (178A-178B.) Development of American Capitalism (3-3)

The changes in agriculture, industry, labor, banking, transportation and commerce in a capitalist society with emphasis on the prominent personalities who made the changes possible.

547A-547B. (179A-179B.) Intellectual History of the American People (3-3)

Survey of American thought from 1620 to the present, focusing on the ideas of individuals, groups and movements in religion, politics, society, the arts and reform. Emphasis on liberal and conservative impulses and their role in the making of the modern American mind.

548A-548B. Social History of the United States (3-3)

Historical survey of American society emphasizing demographic trends, the changing role of the family, social structure, immigration patterns, religious movements, developments in education, the economy and entertainment.

Field (d). Latin America

551A-551B. (161A-161B.) Mexico (3-3)

Prerequisite: History 115A-115B or 315A-315B.

Colonial and modern Mexico. Semester II: Emphasis on the 20th century.

552A-552B. (162A-162B.) History of Brazil (3-3)

Semester I: Colony and empire, 1500-1889, with focus on Portuguese heritage, plantation society, African slavery and its abolition and development of classes and regions. Semester II: The 20th century, with focus on messianism and social banditry, creation of the industrial and military state, Afro-Brazilians, and the conquest and destruction of the Amazonian forest and Indians. Recommended for persons minoring in Portuguese.

553A-553B. (163A-163B.) The Caribbean Area (3-3)

Development of the Caribbean area with emphasis on the 20th century.

554. (164.) The West Coast Nations of South America (3)

The historical development of Chile, Bolivia, Peru and Ecuador with emphasis on race relations and social revolutions in the 20th century.

557. (165A.) History of Latin American Popular Culture and Social Thought (3)

Examination of the ways Latin Americans have historically viewed their cultures and societies from the dual perspective of elites and the masses.

Popular Culture—the Latin American self-image reflected in family relations, folklore, myth, legend, popular music and art and mass expression.

558A-558B. (167A-167B.) Diplomatic History of Latin America (3-3)

Origins of Inter-Americanism; relations among the Latin American nations; the origins and development of the American States; Latin America in World Affairs.

Field (e). South, Southeast and East Asia

561A-561B. (191A-191B.) The Far East (3-3)

Particular, but not exclusive, emphasis on Asian-Western relations. Semester I: Through the 19th century. Semester II: The 20th century.

562. (196A.) Civilization of India: The Great Traditions (3)

From earliest times to the eighteenth century including Hindu, Buddhist, and Muslim contribution to Indian society, changing political ideas and institutions, and historic trends in art and literature. (Formerly numbered and entitled History 562A, India—Hindu, Muslim and Modern.)

563. (196B.) The Modern Indian Subcontinent (3)

British conquest and colonial policy, Hindu and Muslim nationalism, Gandhi's significance, and the emergence of independent India, Pakistan, and Bangladesh. (Formerly numbered and entitled History 562B, India—Hindu, Muslim and Modern.)

564A-564B. (190A-190B.) Southeast Asia (3-3)

Semester I: Cultural traditions of Southeast Asian peoples. Indigenous institutions and the influence of China, India and Islam. Semester II: Southeast Asia in the modern world. Patterns of foreign stimulus and local response among the peoples of the area.

566. (192.) Chinese Civilization (3) I

Chinese internal history and institutions during the period of relative isolation; religions, philosophy, literature and the arts.

567A-567B. (193.) Modern and Contemporary Chinese History (3-3)

Semester I: Impact of the West on China's history and civilization, particularly in the 19th and early 20th centuries. Semester II: Selected historical problems of contemporary China since the development of Chinese Communist Party. Theory and practice of the party, Red Army, rural soviets, socialist economic and cultural systems, and revolutionary foreign policies.

569. (194.) Japanese Civilization (3) I

Japanese internal history and institutions during the period of indigenous development and Chinese influence including religions, philosophy, literature and the arts.

570. (195.) Modern Japan (3)

Japan's development as a modern state, particularly in the 19th and 20th centuries.

571A-571B. (197A-197B.) Intellectual History of Modern Asia (3-3)

Asian intellectual history during the 19th and 20th centuries, with special attention to social and political thought.

Field (f). Africa and Middle East

573A-573B. (156A-156B.) History of the Near East from the 7th Century to World War I (3-3)

Prerequisite: History 105A-105B.

Semester I: Medieval Islam from the 7th century A.D. to the rise of the Ottoman Turks. Semester II: The Ottoman Empire to 1914.

574. (157.) The Near East in the Twentieth Century, 1914 to Present (3)

Prerequisite: History 105A-105B.

Analysis of sociopolitical and intellectual developments in the Near East during and after World War I.

575A-575B. (158A-158B.) Africa (3-3)

Semester I: Civilization of precolonial Africa both north and south of the Sahara from the advent of Islam to 1880. Semester II: Colonial and postcolonial Africa.

Field (g). Topical Subjects

581A-581B. (101A-101B.) The Contemporary World in Historical Perspective (3-3)

Trends and developments in the recent past which can contribute to an understanding of the problems of our age.

582A-582B. (105A-105B.) War and Civilization (3-3)

The political and social implications of warfare, of the development of military technologies, and of changing concepts of military organization. Semester I: Through the eighteenth century. Semester II: Napoleonic Wars to the present.

583A-583B. (106A-106B.) The Quest for Peace (3-3)

Prerequisite: Six units in history.

Historical analysis of man's efforts to achieve peace from the Greeks to the present.

584A-584B. (107A-107B.) Science and Society (3-3)

The historical development of the interaction between science and other aspects of society, including politics, economics, philosophy, religion and technology. Semester I: The rise of modern science. Semester II: Revolutions in scientific thought and 20th century problems in science and society.

596. Selected Studies in History (3)

Topics in the various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration and capitalism. Maximum credit six units.

GRADUATE COURSES

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.

601. (201.) Seminar in Historical Method (3)

General historical bibliography. The use of libraries and archives. Methods of critical historical investigation. The interpretations of history.

610. (246.) Directed Reading in Ancient and Medieval History (3)

Prerequisite: Six upper division units in Ancient or Medieval history.

Selected readings in source materials and historical literature in a designated area of Ancient or Medieval history. Maximum credit six units applicable on a master's degree.

615. (256.) Seminar in Ancient and Medieval History (3)

Prerequisite: Six upper division units in Ancient or Medieval history.

Directed research on topics selected from a designated area of Ancient or Medieval history. Maximum credit six units applicable on a master's degree.

620. (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.

625. (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.

630. (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.

635. (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.

640. (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.

645. (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.

650. (243.) Directed Reading in Asian History (3)

Prerequisite: Six upper division units in Asian history.

Selected readings in source materials and historical literature in a designated area of Asian history. Maximum credit six units applicable on a master's degree.

655. (253.) Seminar in Asian History (3)

Prerequisite: Six upper division units in Asian history.

Directed research on topics selected from a designated area of Asian history. Maximum credit six units applicable on a master's degree.

660. (245.) Directed Reading in African and Middle Eastern History (3)

Prerequisite: Six upper division units in African or Middle Eastern history.

Selected readings in source materials and historical literature in a designated area of African or Middle Eastern history. Maximum credit six units applicable on a master's degree.

680. (240.) Directed Reading in Selected Topics (3)

Prerequisite: Consent of the instructor.

Selected readings in source materials and historical literature of various fields of history such as war, science, technology, urbanization, minority groups, immigration, capitalism, conservation, and imperialism. Maximum credit six units applicable on a master's degree.

795. (296.) Area Studies in History (1-3) Cr/NC

Prerequisite: Advancement to candidacy.

Preparation for the comprehensive examinations in the major and minor fields of history for those students taking the M.A. under Plan B. Maximum credit six units applicable on a master's degree.

797. (297.) Research (3) Cr/NC

Prerequisite: Advancement to candidacy and written approval of the History Department graduate coordinator.

Independent research in a specialized subject in history.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

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

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Industrial Studies

Faculty

Chairman, Department of Industrial Studies: H. L. Marsters
 Graduate Adviser: G. K. Hammer
 Credential Adviser: D. A. Dirksen
 Professors: Anderson, Bailey, Dirksen, Hammer, Irgang, McMullen, Thiel
 Associate Professors: Guentzler, Lybarger, Marsters, McEowen, Rasmussen
 Assistant Professors: Ferree, Lawrence, Sorenson

Assistantships

Graduate teaching assistantships in industrial arts are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Industrial Studies, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Industrial Arts. The Department of Industrial Studies makes it possible for students to gain advanced experiences in two of the most modern industrial arts buildings in the West. Well-equipped instructional facilities are devoted to work in woods, metals, transportation, graphic arts, electricity-electronics, photography, industrial drawing, and industrial crafts.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, the student must have completed a bachelor's degree with an undergraduate major in industrial arts. Applicants who do not have an undergraduate major in industrial arts may be admitted to conditionally classified graduate standing on the recommendation of the department, but they will be held responsible for completing the minimum requirements for an undergraduate major in industrial arts.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of a minimum of 24 units in industrial arts from courses listed below as acceptable on the master's degree program. The program must contain at least 24 units of 600- and 700-numbered courses, including Industrial Arts 720 and 790; nine units selected from Industrial Arts 721, 722, 723, and 724; and either Industrial Arts 799A (Plan A) or 795 (Plan B). Students electing Plan B must pass a comprehensive examination upon completion of Industrial Arts 795 and in lieu of the thesis.

Courses Acceptable on Master's Degree programs in Industrial Arts

UPPER DIVISION COURSES IN INDUSTRIAL ARTS

- 503. (103.) Advanced Industrial Crafts (3)**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 402.
 Advanced techniques of industrial crafts. Concentration on the design of craft projects with best utilization of materials. Development, in at least three areas specified by the instructor, of individual exhibits showing originality.

- 517. (117.) Thermoset Plastics (3)**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 315.
 Composition and selection of materials; evaluation of physical and mechanical properties of various thermoset plastics, special techniques for processing and production of thermoset plastics.
- 523. (123.) Industrial Arts Drawing (3) I, II**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 121. Practice in and analysis of modern industrial drafting techniques and theories.
- 533. (133.) Applied Metal Forming Operations (3) I, II**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 131.
 Theory of conventional and high energy industrial forming processes augmented with laboratory forming experiences.
- 540. (140.) Photography for Teachers (3)**
 Six hours of laboratory.
 Designed for more mature students to learn photographic skills useful in teaching. Not open to students with credit in Industrial Arts 140.
- 542. (142.) Advanced Photography (3) I, II**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 140 or 540.
 A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques.
- 553. (153.) Woodworking for Teachers (3) I, II**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 351.
 Wood finishing, residential building construction techniques, and advanced machine operations.
- 563. (163.) Industrial Electronics (3)**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 361.
 Advanced problems in industrial electronics circuit development, analysis, theory and application.
- 573. (173.) Accessory Power Systems (3) I, II**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 371.
 Study of accessory power systems and technological innovations in education and power related industries.
- 583. (183.) Industrial Arts Graphic Arts (3)**
 Six hours of laboratory.
 Prerequisite: Industrial Arts 381.
 Advanced techniques in developing skills involved in graphic arts facilities.
- 594. (194.) Recent Trends in Industrial Arts Education (2)**
 Current trends and practices in the field of industrial arts in secondary education. There will be opportunity for individual work on related problems of interest to members of the class.
- 596. (190.) Experimental Industrial Arts (1 or 2)**
 Prerequisite: Consent of instructor.
 Individual laboratory work on complex projects on an experimental basis. Maximum credit six units.

INDUSTRIAL TECHNOLOGY COURSES

- 591. (191.) Industrial Safety (3)**
 The integration of accident prevention into management functions. The organization of training and safety programs emphasizing the detection and control of hazards, analysis of data, investigations and environment modifications for safety effectiveness.
- 592. (192.) Industrial Materials (3)**
 A survey of various types of manufacturing materials used in industry. Evaluation of materials composition, physical and mechanical properties with emphasis on processing requirements and product design.

593. (193.) Manufacturing Processes (3)

A survey of manufacturing processes used in industry. Evaluation of forming, shaping, assembly and finishing processes as they relate to characteristics of material and product design.

594. (194.) Industrial Proposals and Specifications (3)

Research, practice and investigation in the planning and writing of industrial proposals and plant manufacturing systems specifications.

GRADUATE COURSES IN INDUSTRIAL ARTS**600. (200.) Seminar (3)**

An intensive study in industrial arts; topic to be announced in the class schedule.

601. (201.) Advanced Teaching Problems (3)

Prerequisites: Teaching experience in area selected and consent of instructor.

Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-electronics; (e) transportation; (f) graphic arts; (g) photography; (h) industrial crafts; (i) plastics. Stress on project design and visual materials. Maximum credit six units applicable on a master's degree.

610. (210.) Problems in Industrial Crafts (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 503.

Research in selected areas of industrial crafts with emphasis on instructional materials and techniques. Specifically designed for teachers, recreation workers and therapists.

615. (215.) Problems in Plastics (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 517.

Research with selected plastics processes and materials. Development of projects, aids, resource material, oral and written presentations.

620. (202.) Industrial Arts Problems in Graphics and Design (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 523.

The theories and procedures of industrial drafting, including nomographs, descriptive geometry, and graphic solutions. Emphasis on special applications to industrial arts.

630. (203.) Industrial Arts Problems in Metalworking (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 533.

Problems involved in industrial arts metalworking. Individual research project dealing with instructional materials or processes.

640. (204.) Problems in Photography (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 443, 444 or 542.

Advanced problems in photography in industry and photography in education. Individual research project dealing with instructional materials or industrial processes.

650. (205.) Industrial Arts Problems in Woodworking (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 553.

Intensive study in selected areas of the woodworking industry as it relates to materials, production and construction. Presentation of research findings.

660. (206.) Problems in Electronics (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 563.

Recent developments in the electronics areas. Special research projects and resource materials.

670. (207.) Research in Power Systems for Industrial Arts (3)

Six hours of laboratory.

Prerequisite: Industrial Arts 573.

Research in selected areas of the power systems and effective presentation of findings in oral and written form.

680. (208.) Industrial Arts Problems in Graphic Arts (3)

One lecture and six hours of laboratory.

Prerequisite: Industrial Arts 583.

Selected areas of the graphic arts industry related to materials, production methods, and allied pursuits. Techniques of presentation of findings in effective written and oral form.

720. (220.) History and Philosophy of Industrial Education (3)

A study of the philosophical foundations and development of industrial education and its continuing role in American culture. Contemporary practices and trends will be given consideration.

721. (221.) Curriculum Construction in Industrial Arts Education (3)

Selection of teaching content for school situations in compliance with the best known procedures regarding analysis, objectives, methods and learning, and development of instructional devices related directly to course content.

722. (222.) Instructional Resources for Industrial Arts Education (3)

Survey, selection, and compilation of materials used in the development of resource units for instruction in industrial education, involving publications, organized talks, field trips, visual materials, technical literature and related materials. Organization and evaluation of such materials.

723. (223.) Evaluation in Industrial Arts Education (3)

Principles, methods, and criteria of evaluation including the special problems of measuring growth, achievement, and performance in various phases of industrial education.

724. (224.) Organization, Administration and Supervision of Industrial Education Programs (3)

The principles, objectives, methods and techniques employed in the supervision of industrial education programs. Emphasis on organizing and administering programs at all levels in industry and education.

790. (290.) Research Procedures in Industrial Arts (3)

Location, selection and analysis of scientific and professional literature, research data and specialized bibliographies.

795. (295.) Selected Topics in Industrial Arts (3)

Prerequisites: Industrial Arts 790 and advancement to candidacy for the Master of Arts degree.

Study in selected topics of industrial arts culminating in a research paper.

796. (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.

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Latin American Studies

Faculty

Graduate Coordinator: P. F. Flemion

Graduate Advisers:

Anthropology: J. W. Ball

Economics: N. C. Clement

Geography: E. C. Griffin

History: R. L. Cunniff

Political Science: B. E. Loveman

Spanish: R. D. Weeter

Faculty members in the departments participating in the degree program are listed in the appropriate sections of this catalog.

Committee on Latin American Studies

J. W. Ball

E. M. Barrera

J. D. Blick

C. B. Christensen

N. C. Clement

R. L. Cunniff

T. M. Davies, Jr.

D. M. Dexter

E. C. Griffin, Chairman

J. B. Esser

P. F. Flemion

B. E. Frederich

G. L. Head

R. B. Hill, Jr.

W. C. Kennedy

J. B. Kelley

J. D. Kitchen

B. E. Loveman

L. V. Padgett

W. D. Phillips

G. V. Segade

P. J. Vanderwood

J. R. Weeks

R. D. Weeter

R. C. Young

General Information

The Master of Arts degree in Latin American Studies is an interdisciplinary degree offered by designated faculty members in the departments of Anthropology, Art, Economics, Geography, History, Political Science, and Spanish and Portuguese Languages and Literatures. It is administered by the Center for Latin American Studies.

The program is designed to provide a systematic advanced training (a) for those planning to enter business or government service in the Latin American field, and (b) for those in a specific academic discipline who have a regional interest in Latin America. It is not intended as a complete vocational preparation.

Admission to Graduate Study

In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, the student must present the Bachelor of Arts degree with not less than 18 units of courses of Latin American content in three areas. A student whose preparation is deemed insufficient by his graduate adviser or by the Latin American Studies Committee will be required to complete specified courses in addition to the minimum of 30 units required for the degree.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, students must demonstrate an oral and reading proficiency in either Spanish or Portuguese through either the satisfactory completion of an oral and written examination, or: (1) satisfactory completion of Spanish or Portuguese 201 and 212, and a reading examination administered by the Department of Spanish and Portuguese Languages and Literatures, or (3) satisfactory completion of three units of upper division or graduate course work in Spanish or Portuguese not part of the official program. Students are further encouraged to acquire a reading knowledge of the alternate language.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree, as described in Part Three of this catalog, the student must complete at least 30 units of upper division and graduate course work with not less than 24 units in courses of Latin American content, distributed as follows:

	600- and 700-numbered Courses	500-, 600- and 700-numbered Courses
Department A	6 units	6 units
Department B	3 units	3 units
Department C	3 units	3 units
	<hr/> 12 units	<hr/> 12 units

The total program shall include a minimum of 18 units in 600- and 700-numbered courses. Students may select either Plan A or Plan B in consultation with the graduate adviser. In addition to meeting the distribution requirements given above, students electing Plan A must complete the 799A (Thesis) course offered by the department selected for the 12-unit concentration (Department A). Students electing Plan B must pass a comprehensive written and oral examination in lieu of the thesis.

All programs will be approved by the Latin American Studies Committee.

Courses Acceptable on Master's Degree Programs in Latin American Studies

UPPER DIVISION COURSES

Latin American Studies Course

580. Special Topics (1-4)

Prerequisite: Six upper division units in Latin American content courses.

Interdisciplinary study of selected Latin American topics. Credit will vary depending on the scope and nature of the topic. Whenever appropriate, the course will be taught by a team of instructors representing two or more disciplines. May be repeated with different content. Maximum credit eight units.

Anthropology Courses

542. (162.) Cultures of South America (3)
 543. (163.) Contemporary Latin American Cultures (3)
 570. (147.) Prehistory of South America (3)
 575. (180.) Preclassic Cultures of Mesoamerica (3)
 576. (181.) Classic Pre-Columbian Civilizations of Middle America (3)
 577. (182.) Post-Conquest Cultures of Middle America (3)

Art Courses

561. (151A.) Arts of the Pre-Hispanic Americas (3)
 562. (151B.) Colonial Art of Latin America (3)

History Courses

- 538A. (182A.) The American Southwest (3)
 551A-551B. (161A-161B.) Mexico (3-3)
 552A-552B. (162A-162B.) History of Brazil (3-3)
 553A-553B. (163A-163B.) The Caribbean Area (3-3)
 554. (164.) The West Coast Nations of South America (3)
 557. (165.) History of Latin American Popular Culture and Social Thought (3-3)
 558A-558B. (167A-167B.) Diplomatic History of Latin America (3-3)

Political Science Courses

566. (194.) Political Change in Latin America (3)
 567. (195.) Political Systems of Latin America (3)
 568. (184.) The Mexican Political System (3)
 582. (175.) International Relations of the Latin American States (3)

Portuguese Course

535. (135.) Brazilian Literature (3)

Spanish Courses

- 504A-504B. (104A-104B.) Spanish-American Literature (3-3)
 515A-515B. (106A-106B.) Mexican Literature (3-3)
 520. (107.) Caribbean Area Countries Literature (3)
 522. (108.) Andean Countries Literature (3)
 524. (109.) River Plate Literature (3)
 570. (170.) Spanish-American Poetry (3)
 571. (171.) Spanish-American Short Story (3)
 572. (172.) Spanish-American Theatre (3)

APPLICABLE GRADUATE COURSES

Refer to graduate course descriptions in the sections of this catalog under the departments of Anthropology, Art, Economics, Geography, History, Political Science, and Spanish and Portuguese Languages and Literatures.

Anthropology Courses

600. (200.) Seminar (3)*
 634. (257.) Classical Nahuatl (3)
 797. (297.) Research (3)
 798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC

Art Courses

798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC

Economics Courses

660. (292.) Seminar in International Economics (3)*
 665. (295.) Seminar in the Economics of Underdeveloped Countries (3)
 797. (297.) Research (3)
 798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC

Geography Courses

620. (220.) Seminar in Regional Geography (3)*
 650. (250.) Seminar in Systematic Geography (3)*
 797. (297.) Research (1-3)
 798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC

History Courses

640. (244.) Directed Reading in Latin American History (3)
 645. (254.) Seminar in Latin American History (3)
 797. (297.) Research (3)
 798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC

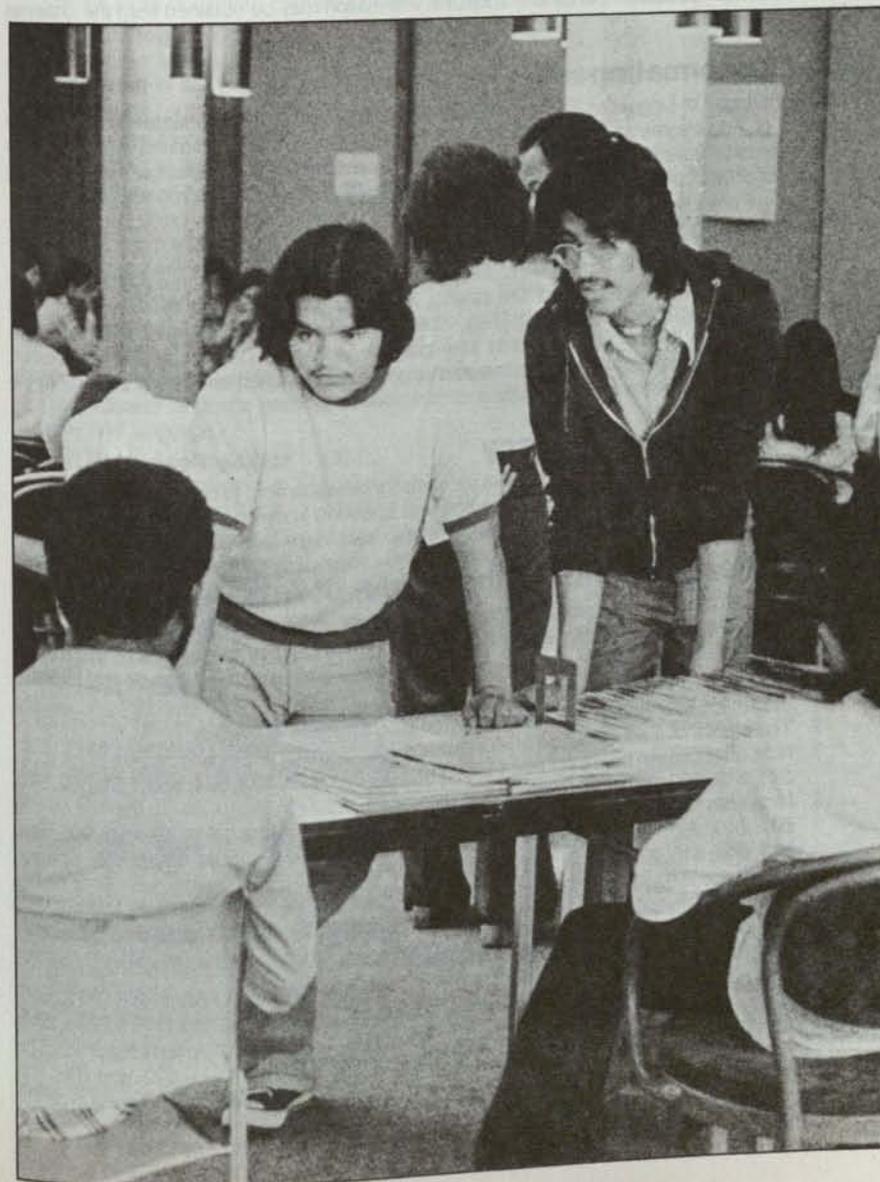
Political Science Courses

655. (280.) Seminar in General Comparative Political Systems (3)*
 661. (282.) Seminar in the Political Systems of the Developing Nations (3)*
 667. (283.) Seminar in Latin American Political Systems (3)
 795. (291.) Problems Analysis (3)*
 797. (297.) Research in Political Science (3)
 798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC

*Acceptable when of relevant content.

Spanish Courses

640. (204.) The Spanish-American Novel (3)
 650. (205.) The Gaucho Epic (3)
 660. (206.) Modernism (3)
 690. (209.) The Spanish-American Essay (3)
 695. (210.) Contemporary Spanish-American Prose Fiction (3)
 750. (250.) Seminar in Spanish-American Literature (3)
 755. (255.) Seminar in Spanish-American Culture and Thought (3)
 798. (298.) Special Study (1-3)
 799A. (299.) Thesis (3)
 799B. Thesis Extension (0) Cr/NC



Linguistics

Faculty

Chairman, Department of Linguistics: G. F. Drake
 Graduate Adviser: S. Elgin
 Credential Adviser: S. Elgin
 Professors: Frey, Tidwell
 Associate Professors: Donahue, Drake, Seright
 Assistant Professors: Elgin, Underhill, Webb

Assistantships

Graduate teaching assistantships in linguistics are occasionally available to a limited number of qualified students. Application blanks and additional information may be obtained from the chairman of the department.

General Information

The Department of Linguistics, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Linguistics. The program, interdisciplinary in nature, is designed to provide systematic advanced training in the field of linguistics, which is increasingly relevant to our humanistic-scientific culture.

Admission to Graduate Study

In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, the student must present the Bachelor of Arts degree in Liberal Arts and Sciences at San Diego State University, or its equivalent with a grade point average of 3.0 in the last 60 semester units attempted. A student whose preparation is deemed insufficient by his graduate adviser will be required to complete specified courses in addition to the minimum of 30 units required for the degree.

Advancement to Candidacy

All candidates must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, a reading and speaking knowledge of at least one foreign language must be demonstrated prior to advancement to candidacy.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree, as described in Part Three of this catalog, the student must complete at least 30 units of upper division and graduate course work to include the following required courses:

1. Linguistics 621, Phonology; and Linguistics 622, Structure of English.
2. Three units of graduate seminar—Linguistics 795, Seminar in Linguistics.
3. Nine units chosen from Linguistics 500, 510, 520, 521, 522, 523, 524, 550, 551, 552, 610, 611, 612, 640, 641, 790, 798.
4. Nine units chosen from Anthropology 510, 511, 604, 630; French 611; German 505, 510, 601, 610, 700; Philosophy 531, 631; Russian 580, 581, 610, 650A, 650B, 680; Spanish 548, 549, 610, 770.
5. Linguistics 799A, Thesis, 3 units.
6. At least 15 units, including the thesis, must be from 600- and 700-numbered courses.

All programs will be approved by the graduate adviser.

Certificate in Applied Linguistics

The Linguistics Department offers a Basic and an Advanced Certificate in Applied Linguistics. The Advanced Certificate requires 12 units of study consisting of Linguistics 496, 621, 622, and 795. The prerequisite to the Advanced Certificate is the Basic Certificate or its equivalent. For information on the Basic Certificate, please see the *General Catalog*.

Courses Acceptable on Master's Degree Programs in Linguistics

UPPER DIVISION COURSES IN LINGUISTICS

500 (196.) General Linguistics (3) I

Open only to seniors and graduate students. Recommended: Reading knowledge of Latin, French, Spanish or German.

The principles of linguistic development illustrated chiefly from the Classical, Romanic, and Germanic language groups.

510. (180.) History of English (3) I, II

The history of English and its present-day use.

520. (181.) Modern English (3) I, II

The structure of modern English, including the various approaches to linguistic analysis.

521. Phonology (3) II

Prerequisite: Linguistics 101.

Introduction to the theoretical principles of transformational-generative phonology.

522. Syntax (3) I

Prerequisite: Linguistics 101.

Introduction to the theoretical principles of transformational-generative syntax.

523. (184.) Phonemics and Morphemics (3) I

The study of procedures for arriving at the phonetic inventory of languages and the structuring of sound units (both linear and intonational) into phonemic systems; the study of morphemic hierarchies and their arrangements in forming words.

524. (182.) American Dialectology (3) I, II

The development of American English; regional and cultural differences in pronunciation, grammar and vocabulary.

550. (185.) Theory and Practice of English as a Second Language (3) I, II

The nature of language learning; evaluation of techniques and materials for the teaching of English as a second language.

551. (186.) Sociolinguistics (3) I

Prerequisite: Three units in linguistics or sociology.

Investigation of the correlation of social structure and linguistic behavior.

552. (187.) Psycholinguistics (3) I, II

Prerequisite: Three units in linguistics or psychology.

Psychological aspects of linguistic behavior.

Anthropology Courses

510. (122.) Language in Culture (3)

511. (126.) Field Methods in Linguistics (3)

German Courses

505. (148.) Applied German Linguistics (3)

510. (150.) German Phonetics (3)

Philosophy Course

531. (131.) Philosophy of Language (3)

Russian Courses

580. (130.) Russian Syntax and Stylistics (3)

581. (131.) Russian Phonetics and Morphology (3)

Spanish Courses

548. (149.) Spanish Linguistics (3)

549. (150.) Phonetics and Phonemics (3) II

GRADUATE COURSES IN LINGUISTICS

610. (220.) Indo-European (3)

Prerequisite: Anthropology 304 or Linguistics 622.

Phonology, morphology, and syntax of the Indo-European language community, with special attention to "Centum" and "Satem" relationships.

611. (223.) Old English (3)

Study of Old English phonology, morphology and syntax.

612. (224.) Middle English (3)

Modern linguistic analyses of the Middle English language; emphasis on the development of historical English dialects.

621. Phonology (3)

Prerequisite: Linguistics 500 or 510 or 520.

Phonetics, phonetic transcription, theories of phonology and phonological description.

622. Structure of English (3)

Prerequisite: Linguistics 500 or 510 or 521.

Advanced study of linguistic theory and its application to the analysis of English.

640. Field Methods in Linguistics (3)

Prerequisites: Three units of linguistics, including some knowledge of phonetic transcription and consent of instructor.

Principles and techniques of linguistic analysis working directly with native informants, including phonemic, grammatical, and syntactic analysis and text collection and interpretation.

641. (221.) Structure of a Non-Indo-European Language (3)

The structure of a non-Indo-European language, to be chosen by the instructor, including grammar, reading of texts, and sessions with a native speaker of the language, if possible.

750. Directed Language Study (3)

Prerequisite: Consent of instructor.

Directed independent study of a foreign language not offered within the course structure at San Diego State University with the aim of applying the techniques of intensive linguistic analysis to the syntax, phonology and/or semantic structure of that language. No instruction in speaking or understanding the spoken language is included in this course. Maximum credit six units.

790. (290.) Bibliography and Methods of Linguistic Research (3)

Prerequisite: Twelve upper division units in linguistics.

Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research, including editorial procedures. Recommended for the first semester of graduate work.

795. (295.) Seminar in Linguistics (3)

Prerequisite: Completion of three units of 600- and 700-numbered courses in the master's program for linguistics.

Research in linguistics, course content varying according to instructor. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Anthropology Courses

604. (204.) Seminar in Linguistics (3)

630. (222.) Historical Linguistics (3)

French Course

611. (201.) History of the French Language (3)

German Courses

601. (201.) History of the German Language (3)

610. (202.) Middle High German (3)

700. (265.) Seminar in Germanic Linguistics (3)

Philosophy Course

631. (231.) Seminar in Semantics and logical Theory (3)

Russian Courses

610. (201.) History of the Russian Language (3)

650A-650B. (202A-202B.) Old Church Slavic (3-3)

680. (203.) Seminar in Slavic Linguistics (3)

Spanish Courses

610. (201.) History of the Spanish Language (3)

770. (270.) Applied Spanish Linguistics for Teachers (3)



Literature

Faculty

Graduate faculty in Literature is selected each semester from the general faculty listed below and from visiting professors.

Director, Literature: F. S. Moramarco

Graduate Advisers: G. Sandstrom (Coordinator), J. Bumpus, G. Sanderlin, D. A. Shojai, K. Widmer

Professors: Baker, Benson, Brashers, Chater, Davis, Dickinson, Gellens, Henig, Ingham, Keller, Monteverde, Moramarco, Perkins, Sanderlin, Sandstrom, Santangelo, Sawvas, Stiehl, Tozer, Vanderbilt, Widmer

Associate Professors: Adams, E., Borkat, Brown, Bumpus, Farber, Hinkle, Kehler, H., Kohler, McCoy, McLeod, Nelson, Nichols, Patterson, Redding, M., Redding, R., Rogers, Rother, Sheres, Taylor, Thrane, Tunberg, Wall

Assistant Professors: Aninger, Boe, Butler, Foster, Gervais, Karnath, Kehler, D., McCaffery, O'Reilly, Rush, Shojai, Sullivan, Wheeler

Assistantships and Scholarships

Graduate teaching assistantships in English are available to a limited number of qualified students. Application blanks and additional information may be secured from the Graduate Coordinator.

The Dorothy Cranston Stolt scholarship of \$100 is awarded each June to an English major who is graduating from San Diego State University and who is continuing work toward a higher degree or credential.

For California State Fellowships, see Part Three, Scholarships, Fellowships section of this catalog.

General Information

The Literature faculty, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in English and to postbaccalaureate (nondegree) study.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. Students may be admitted to the graduate program in literature in one of three categories:

1. Unconditional Classified Graduate Standing
For unconditional acceptance to the graduate program in English and literature students must meet the following requirements:
 - a. 24 units of upper division work in English or literature
 - b. 2.75 overall on a 4.0 Grade Point Scale
 - c. 3.0 grade point average in the English or literature major
 - d. 950 on the Graduate Record Examination
2. Conditional Classified Graduate Standing
 - a. Conditional acceptance will be granted to a candidate who is below requirements in one of the above. A student may be granted conditional acceptance if there is a deficiency in two or more of the above requirements. A student accepted conditionally must achieve an average of 3.25 in nine units of English or comparative literature courses before proceeding to further study and is limited to 12 units. Any units taken above this quota will not count toward the 30 units for the master's degree in English.
 - b. English major unit deficiencies. Students who lack 24 units of credit in upper division courses in English and literature will receive conditional acceptance if they meet the requirements of 2.75 overall and 950 on the GRE. After the completion of 24 units in the major students will then be given classified graduate standing if they meet the other requirements.
3. Postbaccalaureate Standing (Unclassified-No Degree Objective). See description in Part Three, Admission Section of this catalog.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program, approved by a graduate adviser and the Graduate Coordinator, which includes a major consisting of at least 24 units in literature from courses listed below as acceptable on master's degree programs, of which at least 18 units must be in 600- or 700-numbered courses, exclusive of thesis, within an area of emphasis.

In addition to the above requirements, the candidate must demonstrate a reading knowledge of a relevant foreign language; must pass an oral examination on his or her general knowledge of literature; enroll in English 799A; and write a thesis under departmental supervision. A student may meet the foreign language requirement by passing the Graduate School Foreign Language Test (French, German or Spanish), by passing a local examination (except German) administered by one of the University's foreign language departments, or by achieving a grade of C or better in three units of upper division work in a foreign language literature course taught in the language, and accepted as relevant by the Graduate Coordinator. (See additional comparative literature foreign language requirement.) The Literature faculty recommends French, German or Latin for students planning to go on to advanced graduate study. Details concerning the oral examination are available from the graduate advisers. The student may take this oral examination at any time after being granted classified graduate standing, but ordinarily will take it before enrollment in English 799A, Thesis.

Students must choose one of the following areas of emphasis:

American Literature

English 600, Introduction to Graduate Study (American Topics)	3
At least one 700-numbered course (American topic)	3
Any two courses in early English language and literature (English 530, 610, Linguistics 510, 611, 612), if not previously taken	6
English 799A, Thesis (American topic)	3
English electives up to 24-unit minimum	9
Other electives (which may be in English or other approved courses) to make up 30-unit master of arts requirement	6
Total	30
Not more than three units from among English 570, 571A-571B, 572, 579, 580, 581, 582, and 640 may count in the above.	

British Literature

English 600, Introduction to Graduate Study (British topics)	3
At least one 700-numbered course (British topic)	3
Any two courses in early English language and literature (English 530, 610, Linguistics 510, 611, 612), if not previously taken	6
English 799A, Thesis (British topic)	3
English electives up to 24-unit minimum	9
Other electives (which may be in English or other approved courses) to make up 30-unit master of arts requirement	6
Total	30
Not more than three units from among English 570, 571A-571B, 572, 579, 580, 581, 582, 589, and 640 may count in the above.	

Comparative Literature

English 600, Introduction to Graduate Study	3
(comparative literature topics)	3
At least one 700-numbered course	12
A minimum of four 600- or 700-numbered English courses	3
One additional 500-, 600- or 700-numbered course in English or comparative literature	3
English 799A, Thesis (comparative literature topic)	6
Electives (which may be in English or comparative literature or other approved courses) to make up 30-unit master of arts requirement	6
Total	30

Not more than three units from among English 570, 571A-571B, 572, 579, 580, 581, 582, and 640 may count in the above.

To be advanced to candidacy in the comparative literature program, a student must demonstrate proficiency in reading and comprehension of at least one foreign literature in the original by satisfying one of the following:

1. Having on his or her undergraduate or graduate transcript at least six semester units of upper division or graduate courses in a foreign literature in the original, with grades of C or better.
2. Completion of six units of upper division or graduate courses in a foreign literature in the original. These courses may be chosen from a foreign language department or from comparative literature. If comparative literature courses are chosen, the instructor must certify that the works were read in the original.
3. Directed readings in a foreign literature in the original, at a level commensurate with 1 or 2 above. With approval of the graduate adviser, an instructor of comparative literature will assist the student in planning a list of readings, supervise and aid the student in the work, and finally certify that the student has demonstrated proficiency in reading and comprehension through a written translation of a work of foreign literature.

The final oral examination on the student's general knowledge of literature is required.

Creative Writing

English 600, Introduction to Graduate Study	3
At least one 700-numbered course	3
One course in early English language and literature (English 530, 610, Linguistics 510, 611, 612), if not previously taken	3
A minimum of two creative writing courses from English 508, 570, 571A-571B, 572, 579, 580, 581, 582, 640, 642, (not more than nine units from among these 10 courses may count as part of the basic 24-unit requirement)	6-9
English 799A, Thesis	3
English electives to make up the 24-unit requirement in English	3-6
Other electives (which may be in English or other approved courses) to make up 30-unit master of arts requirement	6
Total	30

To be advanced to candidacy in the creative writing program, a student must submit a sample of his or her writing or work in progress for approval as thesis level achievement by a committee of three of the faculty in the creative writing area.

Courses Acceptable on the Master's Degree in English

UPPER DIVISION COURSES IN ENGLISH

General

All 500-level courses—Prerequisite: Six lower division units in English.

- 500. (175.) Advanced Composition (3) I, II**
The theory and practice of expository writing, including the contributions of semantics, rhetoric, and logic.
- 505. (105.) The Bible as Literature (3) I, II**
(Same course as Comparative Literature 505.)
Prose and poetry of the King James version.
- 507. (150.) The History of Literary Criticism (3) I**
Principles and practices of literary criticism from Greek times to the nineteenth century.
- 508. (153.) Modern Criticism (3) II**
The theory and practice of selected nineteenth and twentieth century critics, with emphasis on the distinctive features of their approaches to literature.

American Literature

521. Major and Minor Periods in American Literature (3) I, II

American literary history treated chronologically, such as a survey of early American literature, the literature of the American Renaissance, literature of the period of Realism and Naturalism, American literature of the first half of this century, or smaller, more specific historical units. May be repeated with new content. Maximum credit six units.

522. Individual American Author (3) I, II

In-depth study of a major American writer. May be repeated with new content. Maximum credit six units.

523. Individual Movement in American Literature (3) I, II

Literary facets of a movement important to American literary history; such as a study of Puritanism, Imagism, Transcendentalism, Southern Gothic, Realism, or Parafiction. May be repeated with new content. Maximum credit six units.

524. Individual Issues in American Literature (3) I, II

Study of a particular issue in American writing; such as American women writers, the erotic in American literature, transatlantic literary relations, the American writer in exile, a particular region and its writers. May be repeated with new content. Maximum credit six units.

525. Studies in American Fiction (3) I, II

Courses in the history of American fiction from the beginning, in particular periods of fiction writing, in special groups of writers, and in contemporary American fiction. May be repeated with new content. Maximum credit six units.

526. Studies in American Poetry (3) I, II

Courses in the history of American poetry from the beginning, in particular periods of poetry writing, in special groups of poets, and in contemporary American poetry. May be repeated with new content. Maximum credit six units.

527. Studies in American Drama (3) I, II

Courses in the history of American drama from the beginning, in particular periods of drama writing, and in contemporary American drama. May be repeated with new content. Maximum credit six units.

528. History of American Literature (3) I, II

American literary history from the Colonial period to the present. Recommended for English majors.

British Literature

530. (103.) Chaucer (3) I, II

Chaucer's works, with emphasis on *The Canterbury Tales* and *Troilus and Criseyde*.

531. (111.) Renaissance Literature (3) I, II

English poetry and prose from 1485 to 1603.

533. (101.) Shakespeare (3) I, II

An introduction to the writings of Shakespeare.

534. (102.) Study of Shakespeare (3) II

Prerequisite: English 533.

Advanced study of Shakespeare's achievement as a poet and playwright.

536. (112.) Seventeenth Century Literature (3) II

English poetry and prose from 1603 to 1660.

537. (104.) Milton (3) II

Milton's writings, with emphasis on *Paradise Lost*.

538A-538B. (113A-113B.) Restoration and Eighteenth Century Literature (3-3) I, II

English literature in the neoclassical era. Semester I: Dryden, Swift, Pope, and their contemporaries. Semester II: Writers of the middle and late eighteenth century.

540A-540B. (121A-121B.) English Fiction (3-3) I, II

The development of English fiction from its beginnings to the end of the nineteenth century. Semester I: The eighteenth century. Semester II: The nineteenth century.

541A-541B. (122A-122B.) English Drama (3-3) I, II

English dramatic literature from its beginnings to the nineteenth century. Semester I: The period from the beginning to 1642. Semester II: The period following reopening of the theatres in 1660.

- 542A-542B. (114A-114B.) Nineteenth Century British Poetry (3-3) I, II**
Semester I: The Romantic movement. Semester II: The Victorian period.
- 543. (115.) Nineteenth Century British Prose (3) I, II**
Nonfictional prose of the Romantic and Victorian periods.
- 544A-544B. Modern British Fiction (3-3) I, II**
Semester I: English fiction from 1890 to World War II. Semester II: English fiction from 1939 to the present. (Formerly numbered English 544.)
- 545. (116.) Modern British Poetry (3) I, II**
British poetry since 1900.
- 546. (118.) Modern British Drama (3) I, II**
British drama since 1890.
- 549. (129.) Topics in English Literature (3) I, II**
The Works of Spenser, The Metaphysical School of Poetry, The English Satirists, Major Movements in Contemporary English Fiction, and the like. May be repeated with new content. Maximum credit six units.
- 560A-560B. A History of English Literature (3-3) I, II**
Survey of major English writers, with emphasis on reading of complete works. Semester I: From the beginning to the neo-classical period. Semester II: Begins with the Romantic writers. Especially appropriate for those students who have not satisfied the lower division survey requirements, for those who will teach English literature, and for those proceeding on to graduate study.
- Creative Writing
- 570. (140.) Techniques of Poetry (3) I, II**
A study of the critical and theoretical literature of poetry, from the creative writer's viewpoint, together with reading and discussion of appropriate examples.
- 571A-571B. (142A-142B.) Techniques of Fiction (3-3) I, II**
A study of the critical and theoretical literature of fiction, from the creative writer's viewpoint, together with reading and discussion of appropriate examples. Semester I: Short Fiction. Semester II: The Novel.
- 572. (144.) Techniques of Drama (3) I**
A study of the critical and theoretical literature of drama, from the creative writer's viewpoint, together with reading and discussion of appropriate examples.
- 579. (149.) Topics in Techniques of Writing (3) I, II**
A study of the critical and theoretical literature of literary technique or topic such as satire, science fiction, myth and fantasy, children's literature, the long poem, the literary anatomy, etc. May be repeated with new content. Maximum credit six units.
- 580. (170.) The Writing of Poetry (3) I, II**
Prerequisite: English 280.
A writing workshop in poetry. May be repeated with new content. Maximum credit six units.
- 581. (171.) The Writing of Fiction (3) I, II**
Prerequisite: English 280.
A writing workshop in fiction. May be repeated with new content. Maximum credit six units.
- 582. (172.) The Writing of Nonfiction (3) I**
Prerequisite: English 280.
A writing workshop in nonfictional prose. May be repeated with new content. Maximum credit six units.
- 589. (179.) Senior Workshop in Creative Writing (3) I, II**
An advanced workshop intended only for students who have an extensive background in creative writing. Different sections of the course may treat advanced poetry writing, advanced fiction writing, or other special topics.

**UPPER DIVISION COURSES IN
COMPARATIVE LITERATURE**

- 505. (105.) The Bible as Literature (3) I, II**
Same course as English 505.
Prose and poetry of the King James version.
- 510. (120.) Medieval Literature (3)**
Representative selections from authors of the Middle Ages.

- 511. (122.) Continental Renaissance (3)**
Representative selections from authors of the Renaissance period in continental Europe.
- 512. (124.) Seventeenth and Eighteenth Century European Literature (3)**
Selected works by European writers prior to 1800.
- 513. (125.) Nineteenth Century European Literature (3)**
Selected works by European writers between 1800 and 1900.
- 514. (126.) Modern European Literature (3)**
Selected works by European writers of the 20th Century.
- 525. (185.) Yiddish Literature (3) I, II**
Selected works from the Jewish communities of Central Europe.
- 526. (186.) Modern Jewish Literature (3) I, II**
Selected works by Jewish authors from the last half of the nineteenth century to the present, with emphasis on the United States and Israel.
- 530. (170.) Asian Literature (3)**
Selections from the literature of Asia: Chinese, Japanese, Indian, etc. Topic to be announced in class schedule. May be repeated with new content. Maximum credit six units.
- 535. (175.) Near Eastern Literature (3) I, II**
Selections from the literature of the Near East: Persian, Arabic, Turkish, etc. Specific topic to be announced in class schedule. May be repeated with new content. Maximum credit six units.
- 540. (180.) African Literature (3)**
Comparative study of African literature as well as Black literature of North and South America and the Caribbean; intercontinental influences and the theme of Black identity.
- 545. (145.) Modern Latin American Literature (3) I, II**
Reading selections from major Latin American authors.
- 550. (160.) Seminar (3)**
An intensive study of a topic to be selected by the instructor. May be repeated with new content. Maximum credit six units applicable on a master's degree.
- 560. (150.) The Epic (3)**
Selected epic poems from world literature; emphasizes the Western epic tradition from Homer to the present.
- 561. (151.) Fiction (3)**
A comparative approach to themes and forms in fiction (novel and short story). Focus of course to be set by instructor. May be repeated with new content. Maximum credit six units.
- 562. (152.) Drama (3)**
Forms and themes in drama. Focus of course to be set by instructor. May be repeated with new content. Maximum credit six units applicable on a master's degree.
- 563. (153.) Poetry (3)**
A comparative approach to themes and forms in poetry. Focus of course to be set by instructor. May be repeated with new content. Maximum credit six units applicable on a master's degree.
- 570. (196.) Folk Literature (3)**
Studies in the ballad, bardic poetry, oral and popular literature and folklore. May be repeated with new content. Maximum credit six units.
- 571. (191.) Literary Use of Legend (3)**
Literary treatment of such legendary figures as Don Juan, Faust, and Ulysses, in a wide range of literature and genres.
- 577. (192.) Major Individual Authors (3)**
In-depth study of the works of a major author, such as Sophocles, Dante, Cervantes, Goethe, Dostoyevsky or Proust. May be repeated with new content. Maximum credit six units.
- 580. (194.) Concepts in Comparative Studies (3)**
Basic concepts in comparative studies in literature (e.g., influence, movement, figure, genre, etc.); their validity, usefulness and limitations. May be repeated with new content. Maximum credit six units.
- 581. (195.) Literary Uses of Languages (3)**
Study of the functions of language in literary writings. May take the form of translation workshop, stylistic studies, etc. May be repeated with new content. Maximum credit six units.

595. Literature and Other Arts (3)

Prerequisite: Six lower division units in English, comparative literature or the arts.
Comparative study of literature and such arts as painting, sculpture, architecture, music, dance and film. May be repeated with new content. Maximum credit six units.

GRADUATE COURSES IN ENGLISH**600. (290.) Introduction to Graduate Study (3)**

Prerequisite: Twelve upper division units in English.
Introduction to research methods and critical approaches common in the graduate study of literature, with attention to basic reference works, scholarly and critical journals, bibliographical techniques, editorial procedures, etc. Recommended for first semester graduate students. Prerequisite to graduate seminars.

601. Comparative Literature Theory (3)

Introduction to methods of comparative study involving history and theory of Comparative Literature as a discipline. Strongly recommended for first semester students who choose an emphasis in Comparative Literature.

610. (234.) Literature of the Middle Ages (3)

Prerequisite: Twelve upper division units in English.
Selected works in the literature of the Middle Ages with emphasis on Middle English prose and poetry exclusive of Chaucer.

612. (235.) Renaissance Literature (3)

Prerequisite: Twelve upper division units in English.
Selected works in the literature of the Renaissance.

614. (236.) Restoration and Eighteenth Century Literature (3)

Prerequisite: Twelve upper division units in English.
Selected works in the literature of the late seventeenth and the eighteenth centuries.

616. (237.) Earlier Nineteenth Century Literature (3)

Prerequisite: Twelve upper division units in English.
Selected works in the literature of the early nineteenth century.

617. (238.) Later Nineteenth Century Literature (3)

Prerequisite: Twelve upper division units in English.
Selected works in the literature of the later nineteenth century.

620. (239.) Twentieth Century Literature (3)

Prerequisite: Twelve upper division units in English.
Selected works in the literature of the twentieth century.

624. British Literature (3)

Prerequisite: Twelve upper division units in English.
Selected works of an author, period, or subject in English literature. Maximum credit six units applicable on a master's degree.

625. (233.) American Literature (3)

Prerequisite: Twelve upper division units in English, with courses in American literature strongly recommended.
Selected works of an author, period, or subject in American literature. Maximum credit six units applicable on a master's degree.

630. (243.) Poetry (3)

Prerequisite: Twelve upper division units in English.
Poetry as a literary form.

631. (244.) Fiction (3)

Prerequisite: Twelve upper division units in English.
Fiction as a literary form.

632. (245.) Drama (3)

Prerequisite: Twelve upper division units in English.
The drama as a literary form.

640. (260.) Workshop in Creative Writing (3)

Prerequisite: Consent of instructor and departmental adviser.
Criticism and coaching in the larger forms. Maximum credit six units applicable on a master's degree.

642. (279.) Tutorial in Creative Writing (3)

Prerequisites: Twelve upper division units in English, including at least six units in creative writing.
Individual guidance for advanced writers who wish to work on special projects in creative writing.

700. (291.) Seminar: A Major Author (3)

Prerequisite: An appropriate upper division or graduate level background course, and English 600.
The critical study of a major author, such as Shakespeare, Dickens, Mark Twain. May be repeated with new content. Maximum credit six units applicable on a master's degree.

710. (292.) Seminar: A Cultural Period (3)

Prerequisite: An appropriate upper division or graduate level background course, and English 600.
Advanced study, through its literature, of a cultural period such as the Renaissance, the Enlightenment, the Romantic revolution. May be repeated with new content. Maximum credit six units applicable on a master's degree.

720. (293.) Seminar: Special Topics (3)

Prerequisite: English 600.
Advanced study of such literary problems as Regionalism in America and Continental Influences on British Literature, or such topics as esthetics, the creative process, literary translation, teaching of composition and literature, and others. May be repeated with new content. Maximum credit six units applicable on a master's degree.

730. (294.) Seminar: A Literary Type (3)

Prerequisite: English 600.
Advanced study of a literary type, such as the Personal Essay, Epic, Tragedy. May be repeated with new content. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairperson and instructor.
Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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

Mass Communications

Faculty

Coordinator, Graduate Programs in Mass Communications: H. L. Anderson

Department of Journalism

Professors: Buckalew, Holowach, Odendahl, Sorensen

Associate Professors: Haberstroh, Whitney

Assistant Professors: Hartung, Spevak, Wulfemeyer

For faculty members in other departments participating in the degree program (Psychology, Sociology, Speech Communication, and Telecommunications and Film), see the appropriate sections of this catalog.

Mass Communications Committee

H. L. Anderson, Chairman

R. L. Benjamin, Speech Communication

J. Haberstroh, Journalism

M. M. El-Assal, Sociology

F. W. Hornbeck, Psychology

S. W. King, Speech Communication

F. C. Whitney, Journalism

D. G. Wylie, Telecommunications and Film

General Information

The Master of Science degree in Mass Communications is an interdisciplinary degree offered by designated faculty members of the departments of Journalism, Psychology, Sociology, Speech Communication, and Telecommunications and Film. It is administered by the Mass Communications Committee.

The program is designed to offer systematic training for students (1) who plan to continue their study in doctoral or other advanced programs in mass communications or in disciplines emphasizing areas of mass communications; (2) who plan a career in secondary or community college teaching; or (3) who seek a broad background for careers in the mass media, business, or government service.

ADMISSION TO THE GRADUATE PROGRAM

Students will be admitted to the graduate program in mass communications only after careful consideration of their qualifications by the Mass Communications Committee. Initial applications must be received prior to March 1 for the fall semester, and November 1 for the spring semester, in order to be considered.

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, a student applying for admission to the graduate program in mass communications must meet the following requirements:

1. A bachelor's degree in journalism, radio-television, advertising, communications, sociology, or psychology.
2. A grade point average of not less than 2.75 overall, and 3.0 in the last 60 units of the undergraduate program.
3. A total score (verbal and quantitative) on the GRE Aptitude Test of 950.

To be considered for admission to the graduate program in mass communications, an applicant must submit the following in addition to the common admissions form:

1. Two copies of all undergraduate transcripts as required by Part Three of this catalog.
2. Three letters of recommendation, one of which must be from an academic reference and another from an occupational reference.
3. A written personal statement by the applicant discussing background, interests, abilities, and career goals as they apply to the applicant's desire for an advanced degree, and in particular a graduate degree in mass communications.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this catalog.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for the Master of Science degree as described in Part Three of this catalog, the student must complete a minimum of 30 units from courses listed below as acceptable on master's degree programs. These units must be distributed among three of the departments cooperating in the degree program, with a minimum of 18 units in one department (Department A), and six units each in two other departments (Departments B and C). At least 18 units in the total program must be in graduate-numbered courses, to be distributed among the selected three departments as follows:

	Graduate-numbered Courses	Upper Division for Graduate Credit or Graduate-numbered Courses
Department A	12 units	6 units
Department B	3 units	3 units
Department C	3 units	3 units
	18 units	12 units

A student whose preparation is deemed insufficient by his adviser or by the Mass Communications Committee for graduate level study in his selected A, B, or C department will be given conditionally classified graduate standing. Students with conditionally classified graduate standing will be required to complete specified courses to remove any deficiencies in addition to the minimum of 30 units required for the degree. All such deficiencies must be completed within one year after admission to the graduate program and with a minimum grade average of "B" before the student will be given full classified graduate standing.

Candidates may elect to follow Plan A, requiring a thesis, or Plan B, which requires a comprehensive examination agreed upon by the Mass Communications Committee in lieu of the thesis.

All programs will be approved by the Mass Communications Committee.

Courses Acceptable on Master's Degree Programs in Mass Communications

UPPER DIVISION COURSES

Journalism Courses

- 500. (121.) Current Problems in Mass Communications (3) I, II**
Forces affecting American mass communications today: Government restrictions, economics, pressure groups, censorship, mechanical developments, interrelationships of the media and society; professional ethics.
- 502. (102.) Law of Mass Communications (3) I, II**
Libel, defamation, privacy, censorship, advertising laws, postal regulations, and constitutional guarantees affecting press, radio, television; rights and responsibilities of communicators in reporting public affairs.
- 503. (117.) History of Mass Communications (3)**
American journalism from colonial times to the present, with special attention to radio and other mass media which have entered the news and entertainment field; the relation of their development to society.
- 505. (118.) The Foreign Press (3)**
The four theories of the press. Flow of international news. Analysis of the foreign media. Problems of propaganda, governmental control, language, and economic support.
- 507. (122.) Public Opinion Measurement (3)**
(Same course as Psychology 342.)
The history, methods and problems of public opinion and attitude measurement. Emphasis will be placed upon the polling of consumers and voters. Students will be given field experience.
- 508. (162.) Mass Communications and Society (3)**
Prerequisite: Sociology 101.
Social factors underlying nature, functions of mass media. Theories, models, research in media as culture carriers, as opinion shapers, and in relation to government.

509. (177.) Research Methods in Mass Communications (3)

Prerequisite: Sociology 201.

Investigate tools and methods of mass media; content analysis, readership studies, audience measurement, experimental designs, and representative studies.

522. (144.) Reporting of Public Affairs (3)

Prerequisite: Journalism 320.

Coverage of the city hall, courthouse, police headquarters, federal agencies, courts, and other public and political centers.

526. (155.) Advanced Editing Techniques (3)

One lecture and four hours of laboratory.

Prerequisite: Journalism 326.

Principles of typography, page layouts, and use of pictorial material; selection, evaluation, editing, and display of news.

529. (197.) Investigative Reporting (3)

One lecture and four hours of laboratory.

Prerequisite: Journalism 320.

Development of articles of substance and depth in specialized fields. Research, analysis, and interpretation of complex issues in the news. Maximum credit six units.

583. (183.) Problems in Public Relations (3)

Prerequisite: Journalism 481.

Current public relations problems of industry, public agencies and other institutions.

585. (184.) Public Relations Practices (3) I

Prerequisite: Journalism 481.

Examination of current public relations practices in a wide variety of local commercial, industrial, financial, governmental, cultural and social organizations. Use of the local community's public relations resources. (Formerly numbered Journalism 485.)

Sociology Courses

537. (137.) Political Sociology (3)

545. (145.) Sociology of Mass Communication (3)

Speech Communication Courses

530. (130.) Semantics (3) I, II

535. (135.) Theories of Human Communication (3) I, II

537. (137.) Empirical Study in Speech Communication (3) I, II

540. (140.) Freedom and Responsibilities of Speech (3) I, II

575. (175.) Intercultural Communication (3) I, II

589. (189.) Ethics of Speech Communication (3)

592. (192B.) Persuasion (3) I, II

Telecommunications and Film Courses

500. (101.) Broadcast Management (3) I, II

505. (105.) Regulation of Broadcasting (3) I, II

510. (110.) Script Writing for Broadcasting and Film (3) I, II

530. (130.) Radio Programming (3) II

540. (103.) Broadcast Advertising (3) I

541. (104.) Broadcast Commercial Practices (3) II

570. (170.) Educational Telecommunications (3) I

580. (183.) Advanced Programming and Development for Television (3) I, II

590. (108.) International Broadcasting (3) II

GRADUATE COURSES**Journalism Courses****600. (200.) Seminar in Scope and Method of Mass Communications (3)**

Intensive preparation in methodology applicable to the various fields related to mass media study.

700. (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.

702. (202.) Seminar: Mass Media and the Law (3)

Prerequisite: Journalism 502 or Telecommunications and Film 505.

Case studies of legal restrictions and guarantees affecting radio, television, motion pictures, advertising, and printed media.

703. (217.) Seminar: History of Journalism (3)

Prerequisite: Journalism 503.

Directed research on topics of history of American journalism.

705. (218.) Seminar in International Journalism (3)

Prerequisite: Journalism 505.

In-depth exploration of the foreign press and cross-cultural communication; the place of the press in national development and international stability; national images and world opinion; censorship, propaganda and other barriers to international understanding.

707. (222.) Seminar in Mass Communications and Public Opinion (3)

Prerequisite: Journalism 507 or 509.

Analysis of media and their opinion-shaping role; methods and effects of pressure groups; propaganda analysis; creation and perpetuation of images and stereotypes.

708. (262.) Seminar: Mass Communications and Society (3)

Prerequisite: Journalism 508.

Rights, responsibilities and characteristics of mass media and mass communications practitioners; characteristics and responsibilities of audiences and society.

740. (240.) Major Projects in Mass Communications (1-6)

Prerequisite: Journalism 500 or Telecommunications and Film 540.

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.

760. (253.) Seminar in Print Advertising Problems (3)

Prerequisite: Journalism 463 or 466.

Investigation of the practice, responsibility, and philosophy of advertising in print media with individual projects, cases, and current literature.

782. (283.) Seminar in Public Relations (3)

Prerequisite: Journalism 485 or 583.

Analysis and critique of contemporary public relations programs and theory. Development of a comprehensive public relations project involving original research.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

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

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Psychology Courses

621. (219.) Seminar in Personnel Psychology (3)

622. (220.) Seminar in Organizational Psychology (3)

700. (200.) Seminar (3)

745. (221.) Seminar in Problems in Social Psychology (3)

746. (226.) Seminar in Political Psychology (3)

798. (298.) Special Study (1-3) Cr/NC

799A. (299.) Thesis (3) Cr/NC

799B. Thesis Extension (0) Cr/NC

Sociology Courses

710. (210.) Seminar in Social Disorganization (3)
 720. (220.) Seminar in Social Organization (3)
 740. (240.) Seminar in Social Psychology: Sociological Approaches (3)
 760. (260.) Seminar in Research Methods (3)
 797. (297.) Research (3)
 798. (298.) Special Study (1-3) Cr/NC
 799A. (299.) Thesis (3) Cr/NC
 799B. Thesis Extension (0) Cr/NC

Speech Communication Courses

700. (200.) Seminar in Research and Bibliography (3)
 730. (230.) Seminar in Analysis of Language (3)
 735. (235.) Seminar in Communication Theory (3)
 790. (290.) Seminar in Experimental Procedures in Speech Communication (3)
 792. (292.) Seminar in Persuasion (3)
 798. (298.) Special Study (1-3) Cr/NC
 799A. (299.) Thesis or Project (3) Cr/NC
 799B. Thesis Extension (0) Cr/NC

Telecommunications and Film Courses

600. (200.) Seminar in Research and Bibliography (3)
 602. (272.) Seminar in Mass Communication Theory (3)
 603. (273.) Seminar in Mass Communications Message Design (3)
 610. (210.) Seminar in Writing for Broadcast and Film (3)
 615. (212.) Seminar in Criticism of Broadcasting and Cinema (3)
 620. (203.) Seminar in History of Broadcasting (3)
 640. (202.) Seminar in Broadcast Advertising Problems (3)
 670. (270.) Seminar in Educational Telecommunications (3)
 680. (284.) Seminar in Programing and Production (3)
 700. (201.) Seminar in Broadcast Management (3)
 705. (207.) Seminar in Broadcast Law and Regulations (3)
 770. (275.) Seminar in Teaching Broadcasting and Film (3)
 798. (298.) Special Study (1-3) Cr/NC
 799A. (299.) Thesis or Project (3) Cr/NC
 799B. Thesis Extension (0) Cr/NC

Mathematical Sciences**(Courses in Mathematics)****Faculty**

Chairman, Department of Mathematical Sciences: E. I. Deaton
 Graduate Advisers: Master of Arts in Mathematics, E. J. Howard; Master of Arts (Teaching), D. B. McLeod; Master of Science in Mathematics, R. A. Hager; Master of Science in Statistics, D. W. Macky; Master of Science in Computer Science, C. F. Eckberg
 Credential Adviser: G. Becker
 Professors: Becker, Branstetter, Bray, Burton, Deaton, Drobnies, Fountain, Garrison, Gindler, Harvey, Ho, Holmes, Lesley, Moser, Riggs, Saltz, Shaw, Short, Smith, Van de Wetering, Villone, Warren
 Associate Professors: Branca, Bryant, Burdick, Davis, Eckberg, Elwin, Flanigan, Hager, Hintzman, Howard, Kopp, Lopez, Macky, Marcus, Marosz, McLeod, Nower, Park, Romano, Ross, Whitman
 Assistant Professors: Baase, Herndon, Salomon, Vinge

Assistantships

Graduate teaching assistantships in mathematics are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Mathematical Sciences, in the College of Sciences, offers graduate study leading to the Master of Arts degree in Mathematics, to the Master of Arts degree for teaching service with a concentration in Mathematics, to the Master of Science degree in Mathematics, to the Master of Science degree in Statistics, and to the Master of Science degree in Computer Science.

The Master of Arts degree in Mathematics is considered to be the basic academic degree in Mathematics. A candidate of the Master of Science degree is expected to concentrate his efforts in a technical area of mathematics. Within these limitations either degree can be considered as a stepping stone to a more advanced degree, if the student so desires.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. In addition, the student must have passed a qualifying examination in his area.

Specific Requirements for the Master of Arts Degree in Mathematics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program consisting of at least 24 units in mathematics from courses listed below as acceptable on master's degree programs. At least 15 units must be in 600- and 700-numbered courses in mathematics, exclusive of Mathematics 600, 601, 602, and 799A.

To satisfy the foreign language requirement, the student may present evidence that he/she has completed French 201, German 201, Russian 201, or Spanish 201, or their equivalent, with a grade of "C" or better, or the student may demonstrate a reading knowledge of French, German, Russian, or Spanish.

The student is required to pass the departmental comprehensive examinations in mathematics. With the approval of the department, a student may select Plan A. In other cases, Plan B will be followed, and the student must complete three units of Mathematics 797.

Specific Requirements for the Master of Arts Degree for Teaching Service

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes a concentration consisting of at least 21 units in mathematics selected from courses listed below as acceptable on master's degree programs in mathematics. The student's program must include at least 15 units in 600- and 700-numbered courses of which at least 12 units must be in 600- and 700-numbered courses in mathematics. The student is required to pass the departmental comprehensive examinations in mathematics. With the approval of the department, a student may select Plan A. In other cases, Plan B will be followed, and the student must complete three units of Mathematics 797.

Specific Requirements for the Master of Science Degree in Mathematics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes at least 24 units in mathematics selected from courses listed below as acceptable on a master's degree program to include at least 15 units of 600- and 700-numbered courses exclusive of Mathematics 600, 601, 602, and 799A. The student is required to pass the departmental comprehensive examinations in mathematics. With the approval of the department, a student may select Plan A. In other cases, Plan B will be followed, and the student must complete three units of Mathematics 797.

Specific Requirements for the Master of Science Degree in Computer Science

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must meet the following departmental requirements:

1. Complete 15 units of 600- and 700-numbered courses, including twelve units from any two of the following year-course sequences:
 - Mathematics 690A and 690B
 - Mathematics 691A and 691B
 - Mathematics 692A and 692B
 - Mathematics 693A and 693B
2. Complete nine additional units of graduate level or approved upper division mathematics courses, not including Mathematics 799A.
3. Complete six units of approved electives.
4. Pass two written examinations as determined by the department.
5. Pass a final oral examination. With the approval of the department, a student may select Plan A. In other cases, Plan B will be followed, and the student must complete three units of Mathematics 797.

Specific Requirements for the Master of Science Degree in Statistics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must meet the following departmental requirements:

1. Complete 18 units of 600- and 700-numbered mathematics courses including:
 - a. Mathematics 670A and 670B.
 - b. Six units selected from Mathematics 672, 673, 674, 675, 676, and 677.
 - c. Six units of other 600- and 700-numbered mathematics courses, except that Mathematics 600, 602, and 799A may not be used to fulfill these units required.
2. Complete six additional units of graduate level or approved upper division mathematics courses, not including Mathematics 799A.
3. Complete six units of approved electives.

4. Pass the departmental comprehensive examinations in mathematical statistics. With the approval of the department, a student may select Plan A. In other cases, Plan B will be followed, and the student must complete three units of Mathematics 797.

Courses Acceptable on Master's Degree Programs in Computer Science, Mathematics and Statistics

UPPER DIVISION COURSES

510. (105.) Introduction to the Foundations of Geometry (3) II

Prerequisite: Mathematics 122 or 151.

The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry.

511. (106.) Projective Geometry (3) I

Prerequisites: Mathematics 122 or 151 and consent of instructor.

Concurrence of lines, collinearity of points and other properties of figures not altered by projections; construction and study of ellipses, hyperbolas, and parabolas by means of projections.

512. (107.) Non-Euclidean Geometry (3)

Prerequisite: Mathematics 122 or 151.

History of attempts to prove the fifth postulate; emphasis on plane synthetic hyperbolic geometry; brief treatment of other types of non-Euclidean geometry.

520A. (149.) Linear Algebra (3) I, II

Prerequisite: Mathematics 123 or 152.

A study of linear equations, Euclidean spaces, linear transformations, matrices, determinants, and eigenvalues. (Formerly numbered Mathematics 520.)

520B. Applied Linear Algebra (3)

Prerequisite: Mathematics 520A.

Jordan forms, vector and matrix norms, condition numbers, generalized inverses, linear programming, analysis of a few standard algorithms in linear algebra.

521A-521B. (150A-150B.) Modern Algebra (3-3) I, II

Prerequisites: Mathematics 151. Mathematics 521A is prerequisite to 521B.

Selected topics from modern algebra to include an introduction to the theory of groups, theory of equations, and finite mathematics.

522. (152.) Number Theory (3)

Prerequisite: Mathematics 151.

Selected topics from the theory of numbers to include congruences, Diophantine equations, and a study of prime numbers.

523. (155.) Mathematical Logic (3)

Prerequisite: Mathematics 151 or Philosophy 120.

The logical rules of proof governing sentential connectives and the universal and existential quantifiers with applications. Not open to students with credit in Philosophy 521.

530. (119.) Differential Equations (3) I, II

Prerequisite: Mathematics 152.

Ordinary differential equations with applications to geometry, physics and chemistry. Not open to students with credit in Mathematics 340A.

531. (170.) Partial Differential Equations (3)

Prerequisite: Mathematics 530.

Study of boundary-initial value problems via separation of variables, eigenfunction expansions, Green's functions, and transform methods. Introductory material includes uniform convergence, divergence theorems and Fourier series. Not open to students with credit in Mathematics 340B.

532. (175.) Functions of a Complex Variable (3)

Prerequisite: Mathematics 152.

Analytic functions, Cauchy-Riemann equations, theorem of Cauchy, Laurent series, calculus of residues.

533. (124.) Vector Analysis and Differential Geometry (3)

Prerequisite: Mathematics 152.

Vector algebra, differentiation and integration, classical theory of curves and surfaces, divergence theorem, Stokes' theorem and related integral theorems, curvilinear coordinates, elements of tensor analysis. Applications to geometry and physics.

- 534A. (121A.) Advanced Calculus I (3)**
Prerequisite: Mathematics 152.
The real number system, limits and other topics, with emphasis on functions of one variable.
- 534B. (121B.) Advanced Calculus II (3)**
Prerequisite: Mathematics 534A.
A continuation of Mathematics 534A with emphasis on functions of two or more variables.
- 535. (160.) Introduction to Topology (3)**
Prerequisite: Mathematics 534A.
Topological spaces. Functions, mappings, and homeomorphisms. Connectivity, compactness. Metric spaces.
- 541A. (135A.) Numerical Analysis and Computation (3) I**
Prerequisites: Mathematics 107 and 152.
Iteration methods to solve nonlinear equation (convergence, errorbound, rate of convergence). Iteration methods to solve systems of nonlinear equations. Application to approximating real and complex zeros of a polynomial; Bernoulli's method and difference equations. Floating point arithmetic.
- 541B. (135B.) Numerical Analysis and Computation (3) II**
Prerequisites: Mathematics 340A or 530, 534A and 541A.
The interpolating polynomial, Lagrangian representation. Iterated linear interpolation. Inverse interpolation. Representations of the interpolating polynomial using differences. Numerical differentiation. Numerical integration. Numerical solution of ordinary differential equations. Solving linear systems.
- 548. Computer Oriented Statistical Analysis (3)**
Prerequisite: Mathematics 551B or 552 with working knowledge of FORTRAN.
Using a computer for statistical analysis, including the use of standard statistical packages and programming statistical procedures not given in standard packages.
- 550. (134.) Probability (3)**
Prerequisite: Credit or concurrent registration in Mathematics 152.
Definitions, computation of probability by enumeration of the cases, discrete and continuous random variables, density functions, moments, limit theorems, selected distributions.
- 551A. (140A.) Mathematical Statistics (3) I, II**
Prerequisite: Mathematics 152.
Probability models in the theory of statistics, sampling distributions with applications in statistical inference.
- 551B. (140B.) Mathematical Statistics (3) II**
Prerequisite: Mathematics 551A.
Point and interval estimation and hypothesis testing in statistical models with applications to problems in various fields.
- 552. (141.) Statistics, Theory and Applications (3)**
Prerequisite: Mathematics 551A.
Applications of and case studies employing statistical techniques from the areas of experimental design, nonparametric inferences, decision theory and selected topics.
- 553. (143.) Stochastic Processes (3)**
Prerequisite: Mathematics 550.
Introduction to stochastic processes with selected applications.
- 557. Systems Programming (3) I, II**
Prerequisite: Mathematics 570.
Review of batch process systems programs, their components, operating characteristics, user services and their limitations. Implementation techniques for parallel processing of input/output and interrupt handling. Details on addressing techniques, core management, system updating, documentation and operation.
- 570. (136.) Data Structures (3)**
Prerequisite: Mathematics 137.
Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multilinked structures.
- 571. (137.) Finite Mathematics, with Computer Applications (3)**
Prerequisite: Mathematics 123 or 152.
Equivalence and order relations, Boolean algebra, finite machines and their optimization, logical design.

- 572. (139.) Programming Languages (3)**
Prerequisite: Mathematics 137.
Formal definition of programming languages including specification of syntax and semantics. Structure of algorithmic languages. Special purpose languages.
- 573. (158.) Automata Theory (3) II**
Prerequisite: Mathematics 521A or 571.
Definition and algebraic description of finite automata. Reduced forms for sequential machines. Regular sets and expressions. Introduction to context-free languages.
- 574. (157.) Machines and Recursive Functions (3)**
Prerequisite: Mathematics 155A or 523 or 571.
Definition of algorithm by abstract (Turing) machines and by recursion. Application of this definition to the limitations and capabilities of computing machines. Applications to logic, algebra, analysis.
- 575. (176.) Compiler Construction (3)**
Prerequisites: Mathematics 570 and 572.
Syntactical specification of languages. Scanners and parsers. Precedence grammars. Run-time storage organization. Code generation and optimization.
- 576. (177.) Artificial Intelligence (3) II**
Prerequisite: Mathematics 523.
Heuristic approaches to problem-solving. Systematic methods of search of the problem state space. Theorem proving by machine. Resolution principle and its applications.
- 577. Probability and Statistics (3) I**
Prerequisite: Mathematics 151.
Probability, measures of central tendency and dispersion, characteristics of frequency functions of discrete and continuous variates; applications. Highly recommended for all prospective secondary school teachers of mathematics.
- 578. Algorithms and Their Analysis (3)**
Prerequisite: Mathematics 570.
Algorithms for solving frequently occurring problems. Sorting, merging, fast matrix multiplication, graph problems (e.g., finding shortest paths), the assignment problem and others.
- 579. Combinatorics (3)**
Prerequisite: Mathematics 122 or 151.
Permutations, combinations, generating functions, recurrence relations, inclusion-exclusion counting. Polya's theory of counting, other topics and applications.
- 596. (196.) Advanced Topics in Mathematics (1-4) I, II**
Prerequisite: Consent of instructor.
Selected topics in classical and modern mathematics. May be repeated with the approval of the instructor. Maximum credit six units.

GRADUATE COURSES IN MATHEMATICS

- 600. (202.) Geometrical Systems (3)**
Prerequisites: Mathematics 521A and an upper division course in geometry.
Ordered and affine geometries, decompositions, dilations. Projectivities and projective space. Absolute geometry, isometrics, groups generated by inversions.
- 601. (203.) Topics in Algebra (3)**
Prerequisites: Mathematics 521A and 534A.
Unique factorization domains, rings and ideals, groups, algebraic field extensions. A course designed for secondary school teachers.
- 602. (204A.) Topics in Analysis (3)**
Prerequisites: Mathematics 521A and 534A.
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.
- 620. (230.) Rings and Ideals (3)**
Prerequisite: Mathematics 521B.
A development of the theory of rings.
- 621. (231.) Theory of Groups (3)**
Prerequisite: Mathematics 521B.
A development of the theory of groups.

- 622. (232.) Theory of Fields (3)**
Prerequisite: Mathematics 521B.
A study of both finite and infinite fields, and field extensions.
- 623. (233.) Linear Algebra and Matrix Theory (3)**
Prerequisite: Mathematics 520.
A study of matrices, determinants, and vector spaces.
- 624. (205.) Advanced Mathematical Logic (3)**
Prerequisite: Mathematics 521A or 523.
First-order theories, completeness theorems, arithmetization, Godel's incompleteness theorem.
- 630A-630B. (226A-226B.) Functions of a Real Variable (3-3)**
Prerequisite: Mathematics 534B. Mathematics 630A is prerequisite to 630B.
Point sets, functions and limits, continuity, differentiations, Riemann and Lebesgue integration.
- 631A-631B. (224A-224B.) Functions of a Complex Variable (3-3)**
Prerequisites: Mathematics 532 and 534B. Mathematics 631A is prerequisite to 631B.
Analytic continuation, elliptic functions, conformal mapping, Riemann surfaces.
- 632. (222A.) Functional Analysis (3)**
Prerequisites: Mathematics 520 and 535.
Banach spaces, Hilbert spaces, spectral theory and Banach algebras.
- 633. (220A.) Topology (3)**
Prerequisite: Mathematics 535.
Metric spaces, regular spaces, Hausdorff spaces, general topological spaces, arcs and curves, and the Jordan curve theorem.
- 634. (212.) Advanced Ordinary Differential Equations (3)**
Prerequisites: Mathematics 530 and 534A.
Existence and uniqueness theorems. Wronskians, adjoint systems, Sturm-Liouville boundary value problems, equations of Fuchsian type.
- 635. (214.) Advanced Partial Differential Equations (3)**
Prerequisite: Mathematics 531.
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.
- 670A-670B. (240A-240B.) Advanced Mathematics Statistics (3-3)**
Prerequisites: Mathematics 534A and 550 or 551A. Mathematics 670A is prerequisite to 670B.
Distribution of random variables, characteristic functions, limiting distributions, sampling distributions. Hypothesis testing and estimation: optimality considerations, applications of the linear hypothesis, invariance and unbiasedness to analysis of variance and regression problems; sequential techniques, decision theory.
- 672. (242.) Nonparametric Statistics (3)**
Prerequisite: Mathematics 551B.
Tolerance regions, randomness problems, most powerful rank tests, the invariance methods, consistency and efficiency of tests.
- 673. (243.) Sample Surveys (3)**
Prerequisite: Mathematics 551A.
The methods and applications of sample surveys, stratification and sampling, subsamples of clusters.
- 674. (244.) Multivariate Analysis (3)**
Prerequisites: Mathematics 520 and 551B.
Multivariate normal distributions, multivariate analysis of variance, factor analysis, canonical correlation.
- 675. (245.) Linear Statistical Hypothesis Testing (3)**
Prerequisites: Mathematics 520 and 551A.
The multivariate normal distribution; distribution of quadratic forms; linear and curvilinear models; general linear hypotheses of full rank, regression models.
- 676. (246.) Statistical Decision Theory and Applications (3)**
Prerequisites: Mathematics 534A and 551B.
Sequential and nonsequential decision methods, complete classes of decision functions, admissible decision functions, adaptive control systems, stochastic stability and control.

- 677. (247.) Design of Experiments (3)**
Prerequisites: Mathematics 520 and 551A.
Experimental design models, a basic approach as well as a matrix algebra approach.
- 690A-690B. (260A-260B.) Theory of Computability (3-3)**
Prerequisites: Mathematics 523 or 571 and 574.
Turing machines and their variants. Godel numbering and unsolvability results. Models of computation.
- 691A-691B. (265A-265B.) Formal Languages and Syntactic Analysis (3-3)**
Prerequisites: Mathematics 570, 572 and 573 or 574.
Definition of formal grammars; arithmetic expressions and precedence grammars, context-free and finite-state grammars. Algorithms for syntactic analysis. Relationship between formal languages and automata.
- 692A-692B. (268A-268B.) Computer Architecture and Programming Systems (3-3)**
Prerequisites: Mathematics 570 and 572.
Topics to include computer architecture, operating systems, I/O hardware and software, translators. Selected applications such as simulation, computer graphics, CAI are additional optional topics.
- 693A. (270A.) Advanced Numerical Analysis (3)**
Prerequisites: Mathematics 520 and 541B.
Numerical methods in linear algebra (solving linear systems, inverting matrices, eigenvalue problems), Elimination and iteration methods. Ill-conditioned systems. Detailed error analysis.
- 693B. (270B.) Advanced Numerical Analysis (3)**
Prerequisite: Mathematics 693A.
Polynomial approximation (least squares approximation, orthogonal polynomials, Chebyshev polynomials, trigonometric approximation), numerical solution of partial differential equations.
- 700. (206.) Applications of Computer Science (3)**
Prerequisite: Classified graduate standing in mathematics of computer science.
Topic to be chosen from such applications as theorem proving simulation, learning theory, graphics, definition languages. Maximum credit six units applicable on a master's degree.
- 720. (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.
- 797. (297.) Research (1-3) Cr/NC**
Prerequisite: Six units of graduate level mathematics.
Research in one of the fields of mathematics. Maximum credit six units applicable on a master's degree.
- 798. (298.) Special Study (1-3) Cr/NC**
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit six units.
- 799A. (299.) Thesis or Project (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
- 799B. Thesis or Project Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

Microbiology

Faculty

Chairman, Department of Microbiology: B. L. Kelly
 Graduate Adviser: H. Moore
 Professors: Baxter, Kelly, Moore, Walch
 Associate Professors: Anderes, Phelps, Steenbergen

Assistantships

Graduate teaching assistantships in microbiology are available to a limited number of classified graduate students. Application blanks and additional information may be secured from the Chairman of the Department of Microbiology.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. To qualify for admission to classified graduate standing in the Department of Microbiology the student must also:

1. have completed the minimum requirements equivalent to the baccalaureate degree in microbiology at San Diego State University.
2. have an undergraduate grade point average of 2.75 or demonstrate the ability to do superior graduate work.
3. have a grade point average of 3.0 or better in upper division courses (at least 24 units) acceptable for the major.
4. have a score of 1100 or better for the combined verbal and quantitative portions of the Graduate Record Examination Aptitude Test.
5. pass a comprehensive departmental written and oral examination after all other requirements for classification have been completed.
6. submit two references from science faculty members attesting to capability to do graduate work in microbiology.
7. have been accepted by a research adviser in the Department of Microbiology who can supply the necessary space and guidance.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least thirty units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences as listed below or from closely related fields. Not less than 18 units must be selected from courses offered in the Department of Microbiology to include not less than 15 units of 600- and 700-numbered courses. Among the 600- and 700-numbered courses selected, the student's program must include courses Microbiology 790, Bibliography; 791, Research Techniques; 799A, Thesis; and at least four units of seminar. A maximum of six units of the required 30 units may be selected from acceptable courses offered in other related areas including the School of Education. A final oral examination on the field of the thesis and its implication in the broad fields of microbiology is required.

Courses Acceptable on Master's Degree Programs in Microbiology

UPPER DIVISION COURSES

- 510. (115.) Advanced General Microbiology (4) II**
 Two lectures and six hours of laboratory.
 Prerequisite: Microbiology 310.
 Taxonomy, comparative physiology and ecology of representative microorganisms found in various natural environments.
- 515. (114.) Bacterial and Viral Genetics (2) I, II**
 Prerequisite: Microbiology 310.
 The genetics of bacteriophages; selected animal viruses and bacteria.
- 520. (102.) Pathogenic Bacteriology (4) I, II**
 Two lectures and six hours of laboratory.
 Prerequisites: Microbiology 310; Chemistry 250 or 251. Recommended: Chemistry 361A.
 Bacterial and rickettsial agents of disease in man and other animals. Consideration of host-parasite relationships, the biology of the inciting agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.
- 525. (104.) Medical Mycology (4) I, II**
 Two lectures and six hours of laboratory.
 Prerequisite: Microbiology 310.
 Mycotic agents of disease in human and other animals. Consideration of the biology of fungi; concepts of host-parasite relationships, including factors affecting virulence and immunity. Experience in systematic identification.
- 530. (109.) Hematology (4) I, II**
 Two lectures and six hours of laboratory.
 Prerequisite: Microbiology 310.
 The study of normal and pathological blood with chemical, physical and microscopic methods.
- 535. (107.) General Virology (2) I, II**
 Prerequisite: Microbiology 310. Recommended: Microbiology 330 and 520.
 Viruses, their structure, function, culture, and methods of study.
- 535L. (107L.) General Virology Laboratory (2) II**
 Six hours of laboratory.
 Prerequisites: Microbiology 520 and credit or concurrent registration in Microbiology 535.
 The culture, isolation, and characterization of viruses.
- 560. (116.) Marine Microbiology (2) I**
 Prerequisite: Microbiology 310.
 Microbiological population of estuary and ocean waters; interrelationships with other organisms and the physical and chemical environment.
- 560L. Marine Microbiology Laboratory (2) I**
 Six hours of laboratory.
 Prerequisite: Credit or concurrent registration in Microbiology 560.
- 580. (120.) Animal Viruses (4) I**
 Two lectures and six hours of laboratory.
 Prerequisites: Microbiology 520 and 535. Recommended: Microbiology 330 and 535L.
 Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and serology.
- 590. (180.) Electron Microscopy (4) II**
 Two lectures and six hours of laboratory.
 Prerequisites: Physics 115A-115B or 124A-124B and Microbiology 310. Recommended: Microbiology 535, and Zoology 508.
 Principles and techniques in the biological application of the electron microscope.

Biology Courses

519. (175.) Statistical Methods in Biology (3)
 520. (110.) Ecology (4)
 530. (111.) Limnology (4)
 531. (113.) Biological Oceanography (4)

535. (121.) Systems Ecology (4)
 540. (155.) Genetics (4)
 545. (157.) Cytogenetics (4)
 546. (171.) Mutagenesis (3)
 547. (163.) Microbial Genetics (3)
 560. (101.) Cellular Physiology (4)
 561. (181.) Advanced Cellular Physiology (3)
 564. (144.) Comparative Endocrinology (3)
 564L. (144L.) Comparative Endocrinology Laboratory (2)
 566. (148.) Photophysiology (3)
 566L. (148L.) Photophysiology Laboratory (1)
 568. (182.) Immunochemistry (3)
 568L. (182L.) Immunochemistry Laboratory (1)
 570. (150.) Radiation Biology (3)
 570L. (150L.) Radiation Biology Laboratory (2)
 571. (151.) Radioisotope Techniques in Biology (3)

Botany Courses

501. (101.) Phycology (4)
 502. (102.) Mycology (4)

Chemistry Courses

501. (180.) Chemical Oceanography (3)
 550. (155.) Advanced Instrumental Methods (4)
 577. (170.) Radiochemical Analysis (4)

Zoology Courses

508. (108.) Histology (4)
 521. (121.) General Entomology (4)
 522. (122.) Special Topics in Entomology (3)
 526. (126.) Medical Entomology (4)
 535. (128.) Parasitology (4)

GRADUATE COURSES IN MICROBIOLOGY

- 600. (200.) Seminar (2-3)**
 Prerequisite: Consent of instructor.
 An intensive study in advanced microbiology; topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 610. (240.) Seminar in General Microbiology (2)**
 Prerequisite: Microbiology 320.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.
- 620. (205.) Seminar in Microbial Physiology (2)**
 Prerequisite: Microbiology 320.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.
- 630. (260.) Seminar in Immunology and Serology (2)**
 Prerequisite: Microbiology 330.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.
- 640. (215.) Seminar in Bacterial and Viral Genetics (2)**
 Prerequisite: Microbiology 515.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.
- 650. (210.) Seminar in Pathogenic Bacteriology (2)**
 Prerequisite: Microbiology 520.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.
- 660. (230.) Seminar in Medical Mycology (2)**
 Prerequisite: Microbiology 525.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.

670. (250.) Seminar in Virology (2)

Prerequisite: Microbiology 535.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.

680. (245.) Seminar in Aquatic Microbiology (2)

Prerequisite: Microbiology 320 or 560 or Biology 531.
 May be repeated with new content. Maximum credit four units applicable on a master's degree.

720. (272.) Advanced Pathogenic Bacteriology (3)

Prerequisites: Microbiology 520 and consent of instructor.
 Biological and chemical nature of disease-producing bacteria. Application of experimental information to diagnostic laboratory procedures.

725. (270.) Biology of Animal Pathogenic Fungi (3)

Prerequisite: Microbiology 525.
 Distribution and pathogenesis of fungi-causing disease in man and other animals.

790. (290.) Bibliography (1)

Use of basic reference books, journals, pertinent bibliographies preparatory to the writing of a master's thesis.

791. (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.

797. (297.) Research (1-3) Cr/NC

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

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
 Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
 Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

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

Biology Courses

640. (270.) Seminar in Genetics (2)
 670. (262.) Cytoplasmic Inheritance (3)
 672. (265.) Molecular Biophysics (3)

Botany Courses

601. (201.) Seminar in Phycology (2)
 602. (202.) Seminar in Mycology (2)

Music

Faculty

Chairman, Department of Music: J. Dayton Smith
 Graduate Adviser: J. Dayton Smith
 Credential Advisers: R. B. Forman, E. Savage, J. Dayton Smith
 Professors: Almond, Anderson, Blyth, Bruderer, Brunson, Estes, Forman, Genzlinger, Hogg, Hurd, Lambert, Mracek, Savage, Sheldon, Smith, Snider, Ward-Steinman
 Associate Professors: Hill, Loomis, Meadows, Mitchell, Moe, Yates
 Assistant Professors: Flye, George, Kolar, Logan, O'Donnell

Scholarships

Information on music scholarships may be obtained by writing to the Chairman, Music Scholarship Committee, Music Department, San Diego State University.

General Information

The Department of Music, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Music. The department is a member of the National Association of Schools of Music.

With the approval of the department, students may select courses emphasizing one of the following areas: composition, musicology, music history and literature, music education, performance, and theory.

Admission to Graduate Study

Application Procedure:

1. As a part of the application for admission to the University, applicants will submit a one-page statement to set forth aims and goals in their graduate studies.
2. Applicants who plan to emphasize music education will be required to provide evidence of successful teaching experience or submit letters from two master teachers or supervisors of practice teaching.
3. Applicants admitted to the department will be accepted with conditional graduate standing. Placement examinations will be administered in music history, music theory, and performance studies. Normally two semesters will be allowed to remove deficiencies indicated by the examinations through no-credit remedial work in the form of undergraduate courses or other projects and instruction.

In addition to the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, a student must satisfy the following requirements before he or she will be recommended for classified graduate standing:

1. Complete a bachelor's degree with a major in music including full preparation in theory, literature and performance.
2. Satisfactorily complete placement examinations in theory, music history and literature, and performance. Details may be obtained from the Department of Music.
3. Be accepted in the emphasis of his or her choice by the departmental graduate committee.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this catalog, and must have removed any deficiencies assigned on the basis of the placement examinations.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes a major consisting of at least 24 units from courses listed below as acceptable on master's degree programs in music, of which at least 16 must be in 600- and 700-numbered courses.

Plan A is required of those students whose emphasis is in musicology, music history and literature, theory, and music education, in which case the student is required to enroll in Music 690 and 799A, Thesis, and to pass a final oral examination on the thesis. Students electing the composition emphasis will be required to enroll in Music 799A and to submit an original composition in the form of a project.

Students whose emphasis is in performance may elect Plan B, and in lieu of the comprehensive examination, choose to give a full recital, or a lecture-recital with a supporting document in thesis form, which is presented to the Department of Music. Students should check the department's guidelines, rules and procedures.

Courses Acceptable on Master's Degree Programs in Music

UPPER DIVISION COURSES

507. (107.) Composition Laboratory (1) II

Three hours of laboratory.

Prerequisites: Music 207 and consent of instructor.

Continuation of Music 207. Maximum credit two units.

541. (141.) Performance Studies Pedagogy (3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Consent of instructor.

Teaching beginning and intermediate applied music. Survey and evaluation of teaching materials.

Observation of individual or group lessons.

A. Piano

B. Strings

C. Voice

542. (142.) Performance Studies Laboratory (2) I, II

One lecture and three hours of laboratory.

Prerequisite: Music 541A is prerequisite to 542A and 541B is prerequisite to 542B.

Practical experience in the teaching of individual or group lessons.

A. Piano

B. Strings

C. Voice

552A-552B. (152A-152B.) History of Music (3-3) I, II

Prerequisite: Music 258B. Music 552A is prerequisite to 552B.

The chronological development of musical art and forms from the Middle Ages to the present. Analytical score study and assigned recordings. Familiarity with musicological resources through individual assignments.

554. (154.) Music Literature (2) I, II

Prerequisite: Music 258B.

A concentrated study of the literature in the several areas listed. Analysis by use of scores and of recordings, when available.

A. Chamber Music Literature — Strings

B. Symphonic Literature

C. Keyboard Literature

D. Song Literature

GRADUATE COURSES

600. (200.) Seminar in Music Education (3)

Prerequisite: Consent of instructor.

Seminars in music education are offered to provide an opportunity for concentrated study in the several areas listed.

A. Development and Teaching of Strings

B. Choral and Vocal Techniques

C. General Music

601. (201.) Seminar in Foundations of Music Education (3)

History and philosophy of music education in relation to current trends in the teaching of music.

602. (202.) Seminar in Administration and Supervision of Music Education (3)

Curriculum, scheduling, finance, human relations, organizational aspects, and the role of the supervisor-consultant.

604. (204.) Seminar in Comparative Music Education (3)

Various international philosophical and technical approaches to teaching music to include the Orff, Kodaly, Suzuki and other systems.

607. (207.) Seminar in Composition (2-3)

Three hours of laboratory and public performance of an extended original work as a project.
Prerequisite: Music 507.

Advanced composition for various media, development of original idiom, intensive study of modern music.

608. (208.) Seminar in History and Development of Music Theory (3)

Prerequisite: Music 552B.

Survey of important theoretical approaches to music, from pre-Socratic writers to the present.

611. (211.) Seminar in Analytical Studies of Music (3)

Melodic, formal, contrapuntal and harmonic analysis of music.

613. (213.) Seminar: Music Theory (3)

Principles of traditional harmony and ear training.

614. (210.) Seminar in Electronic Music (3)

Prerequisite: Undergraduate concentration in composition.

Theory, techniques and composition of various kinds of electronic music.

648A. (246A.) Seminar in Advanced Choral Conducting (2)

Prerequisite: Music 448A.

Course designed to develop skills at professional level; study of different styles of choral literature and their relationship to conductor's art; score analysis and experience in conducting.

648B. (246B.) Seminar in Advanced Instrumental Conducting (2)

Prerequisite: Music 449A.

Course designed to develop skills at professional level; study of conducting style as related to band and orchestra literature score analysis and experience in conducting.

650. (250.) Advanced Performance Studies (2)

Fifteen one-hour private lessons.

Prerequisite: Audition before music faculty.

Advanced studies in technical, stylistic and aesthetic elements of artistic performance culminating in a graduate recital. Maximum credit four units applicable on a master's degree.

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|-----------------------|-------------------------|--|
| A. Piano | K. French Horn | T. Contrabass |
| B. Harpsichord | L. Trumpet | U. Harp |
| C. Organ | M. Trombone | V. Classical Guitar |
| D. Voice | N. Baritone Horn | W. Medieval or
Renaissance Instruments |
| E. Flute | O. Tuba | X. Classical Accordion |
| F. Oboe | P. Percussion | Y. Composition |
| G. Clarinet | Q. Violin | Z. Non-Western Instruments |
| H. Saxophone | R. Viola | |
| J. Bassoon | S. Cello | |

652. (252.) Seminar in Music History (3)

Prerequisites: Music 552B and consent of instructor.

Seminars in music history are offered for intensive study in each of the historical eras as listed below.

- A.** Music of the Middle Ages and Renaissance
- B.** Music of the Baroque Era
- C.** Music of the 18th and 19th Centuries
- D.** Twentieth Century Music
- E.** American Music

655. (253.) Seminar in Musicology (3)

Prerequisite: Music 552B.

Problems and research in musicology. Projects in bibliography, source materials, music history, criticism, aesthetics and related fields. Writing and presentation of a scholarly paper.

660. (255.) Seminar: A Major Composer (3)

Prerequisite: Music 552B. Completion of a seminar in Music 652A is recommended.

The life, milieu and works of a major composer, such as Bach, Mozart or Schubert will be studied. Maximum credit six units applicable on a master's degree.

665. (260.) Seminar in the Notation of Polyphonic Music (3)

Prerequisite: Music 552B. Completion of Music 652A is recommended.

Selected problems related to the notation of Medieval, Renaissance, and Baroque music; Scores and Tablatures; White Mensural Notation; Black Notation to the End of Franconian Notation; French, Italian, Mixed and Mannered Notation. Examples will be transcribed into modern notation. Maximum credit six units applicable on a master's degree.

670. (270.) Seminar: Interpretation of Early Music (3)

Prerequisites: Completion of Music 652A and 652B is recommended.

Performance practice in Medieval, Renaissance and Baroque music; projects in music editing; reports; performance on historical instruments. Participation in the Collegium Musicum required.

690. (290.) Seminar in Research Procedures in Music (3)

Reference materials, bibliography, investigation of current research in music, processes of thesis topic selection and techniques of scholarly writing.

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.

799A. (299.) Thesis or Project (3) Cr/NC

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

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

799B. Thesis or Project (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Natural Science

Faculty

Chairman, Department of Natural Science: J. H. Mathewson

Graduate Adviser: N. F. Dessel

Coordinator of Science Education: N. F. Dessel

Professors: Dessel, Mathewson, Merzbacher, Metzger, Shull

Associate Professors: Dowler, Feher, Ingmanson, May, Phelger, Springer, Wallace

Assistant Professor: Thompson

Faculty members in the Departments of Astronomy, Chemistry, Geological Sciences, and Physics are listed in the appropriate sections of this catalog.

Assistantships

Graduate teaching assistantships in natural science are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Natural Science, in the College of Sciences, offers advanced course work in natural science. Graduate courses in natural science may be used to fulfill requirements for advanced degrees in other departments with the approval of the student's graduate adviser.

UPPER DIVISION COURSE (Also Acceptable for Advanced Degrees)

522A-522B. (135A-135B.) Curricula in Physical Science (3-3) I, II

Two lectures and three hours of laboratory.

Prerequisite: Introductory course work in natural science, physics or chemistry.

Principles of physical science as presented in national curriculum study courses such as Project Physics, PSSC, IPS, and PSNS.

May be taken for graduate credit only by candidates for a Master of Arts degree in Education in secondary curriculum and instruction. (Formerly numbered Physical Science 422A-422B.)

GRADUATE COURSES

700. (200.) Seminar (2 or 3)

An intensive study in advanced physical science, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

710. (210.) Advanced Topics in Physical Science (3) I, II

Prerequisite: Undergraduate major or minor in one of the physical sciences.

Selected topics in classical and modern physical science. Topics covered in a particular semester to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

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

799A. (299.) Thesis or Project (3) Cr/NC

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

Preparation of a thesis or project in one of the physical sciences for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Philosophy

Faculty

Chairman, Department of Philosophy: S. N. Weissman

Graduate Adviser: P. O'Reilly

Professors: Carella, Crawford, Friedman, Howard, Koppelman, Lauer, McClurg, Nelson, O'Reilly,

Ruja, Shields, Snyder, Warren, Weissman

Associate Professors: Feenberg, Rosenstein, Troxell

Assistant Professor: Weston

General Information

The Department of Philosophy, in the College of Arts and Letters, offers a program of graduate studies leading to the Master of Arts degree in Philosophy. This curriculum is designed to provide advanced study in the field of philosophy as a basis for further graduate work and to meet the needs of students who plan to teach in colleges or hold other positions of leadership.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing as described in Part Three of this catalog. Students may be admitted to the graduate program in philosophy in one of two ways.

1. Admission with classified graduate standing requires:

a. An undergraduate major in philosophy or a minimum of 24 units of upper division work in philosophy;

b. A minimum GPA of 3.0 in upper division work in philosophy.

2. Admission with conditional classified graduate standing requires:

a. Twelve units of upper division work in philosophy;

b. A minimum GPA of 3.0 in upper division work in philosophy.

Students admitted under 2 acquire classified graduate standing by completing sufficient units of upper division work in philosophy to yield a total, with previous work, of at least 24 such units. Units earned to complete this undergraduate requirement do not fulfill unit requirements for the master's degree. A minimum GPA of 3.0 is required for all units attempted after admission.

Units earned to satisfy requirements for a major do not fulfill unit requirements for the master's degree. Other units *may* fulfill such requirements if earned in courses acceptable on master's degree programs in philosophy.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as stated in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a program of at least 30 units of upper division and graduate courses selected with the approval of the graduate adviser.

Students must complete a minimum of 24 units from courses in philosophy listed below as acceptable on master's degree programs. At least 15 of these units must be in 600- and 700-numbered courses. Philosophy 798 may not be used to fulfill this 15-unit requirement. The remaining numbered courses (six units) must be selected with the approval of the adviser from courses in philosophy, in related disciplines.

Students in the program may elect one of two plans, A or B, to complete the requirements for the degree. Plan A requires the writing of a thesis under Philosophy 799A as part of the outlined course program. If Plan B is elected, the student must pass a comprehensive examination, consisting of two written and one oral, and complete three units in Philosophy 796.

The master's examination shall be conducted by a committee of at least three members selected by the graduate adviser after consultation with the student. Each of the written parts of the examination will be based on a bibliography drawn up by the committee administering the examination after consultation with the student. The oral part of the examination will be in a specific problem area or on a major philosopher. Prior to the beginning of the semester of the oral examination, the committee shall determine the subject matter for the examination after consultation with the student. The Master's examination may be repeated only once.

Courses Acceptable on Master's Degree Programs in Philosophy

UPPER DIVISION COURSES

- 502. (102.) History of Philosophy II (3)**
Prerequisite: Philosophy 301.
Plotinus through William of Occam.
- 504. (104.) History of Philosophy IV (3)**
Prerequisite: Philosophy 303.
Fichte through Royce.
- 505A-505B. (105A-105B.) Twentieth Century Philosophy (3-3)**
Prerequisite: Six units of philosophy.
Historical treatment of major philosophical issues, movements and figures in American and European philosophy. Semester I: Emphasis on Great Britain and the United States. Semester II: Emphasis on continental Europe.
- 508. (108.) Existentialism (3)**
Prerequisite: Six units of philosophy.
The philosophical aspects of Existentialism. Major emphasis is on the diversity of thought within a common approach as this is shown in individual thinkers.
- 509. (109.) Ordinary Language Analysis (3)**
Prerequisite: Six units of philosophy.
Foundations of linguistic philosophy with emphasis on achieving an awareness of the relationship between thinking and language.
- 510. (110.) Philosophy of Law (3)**
Prerequisites: Three units of philosophy and three units of political science.
The nature of law and the logic of legal reasoning. An exploration of certain key legal concepts such as causation, responsibility, personality and property.
- 512. (112.) Political Philosophy (3)**
Prerequisite: Philosophy 101, 102 or 103.
Selected aspects of the political structures within which we live, such as law, power, sovereignty, justice, liberty, welfare.
- 521. (121.) Deductive Logic (3)**
Prerequisite: Philosophy 120.
Principles of inference for symbolic deductive systems; connectives, quantifiers, relations and sets. Interpretations of deductive systems in mathematics, science and ordinary language. Not open to students with credit in Mathematics 523.
- 522. (122.) Inductive Logic (3)**
Prerequisite: Philosophy 120.
Definition, classification and division. The logic of experimentation and statistics. Formation and validation of hypotheses. Probability theories.
- 523. (123.) Theory of Knowledge (3)**
Prerequisite: Six units of philosophy.
The major theories of human knowledge: mysticism, rationalism, empiricism, pragmatism.
- 525. (125.) Metaphysics (3)**
Prerequisite: Six units of philosophy.
Prominent theories of reality, e.g., realism and nominalism, materialism and idealism, teleology and determinism.

- 527. (127.) Values and Social Science (3)**
Prerequisite: Six units of philosophy.
Analysis and discussion of the nature of values and value-judgment with particular reference to the social sciences. Among relevant issues: the naturalistic fallacy, facts and values; authoritarianism, emotivism, objective relativism; the individual and the community.
- 528. (128.) Theory of Ethics (3)**
Prerequisite: Six units of philosophy.
Significant and typical value theories and systems and the concrete problems such theories seek to explain. Emphasis will be on moral values.
- 531. (131.) Philosophy of Language (3)**
Prerequisite: Six units of philosophy.
An introduction to theories of meaning for natural languages and formal systems; concepts of truth, synonymy and analyticity; related epistemological and ontological problems.
- 532. (132.) Philosophy of History (3)**
Prerequisite: Six units of philosophy.
The nature of history and historical inquiry. As metaphysics: A study of theories of historical development. As methodology: History as science, truth and fact in history, historical objectivity, the purpose of history.
- 533. (133.) Philosophy of Education (3)**
Prerequisite: Philosophy 101, 102 or 103.
Various philosophical viewpoints concerning education. The functions of education as conceived by major figures in the western philosophical tradition.
- 535. (135.) Philosophy of Religion (3)**
Prerequisite: Six units of philosophy.
Philosophical examination of issues raised by the religious impulse in man.
- 537. (137.) Philosophy of Science (3)**
Prerequisite: Six units of philosophy.
The basic concepts and methods underlying contemporary scientific thought. Contributions of the special sciences to a view of the universe as a whole.
- 541. (141.) History of Aesthetics (3)**
Prerequisite: Philosophy 101, 102 or 103.
Major documents in the history of aesthetics.
- 542. (142.) Philosophy of Art (3)**
Prerequisite: Six units of philosophy.
The nature of aesthetic experience. Principal contemporary theories of art in relation to actual artistic production and to the function of art in society.
- 564. (164.) American Philosophy (3)**
Prerequisite: Six units of philosophy.
A systematic and critical study of the work of American philosophers from the Puritans through the Pragmatists. Major emphasis is placed on Peirce, James, Royce, Santayana, Dewey and Whitehead.
- 575. (175.) A Major Philosopher (3)**
Prerequisite: Philosophy 301.
The writings of one major philosopher. May be repeated with new content. Maximum credit six units applicable to the major. Maximum credit six units applicable on a master's degree.
- 595. (195.) Selected Topics (3)**
Prerequisite: Six units of philosophy.
A critical analysis of a major problem or movement in philosophy. May be repeated with new content. Maximum credit six units applicable toward the major in philosophy. Maximum credit six units for both 595 and 795 applicable on a master's degree.
- 596. (196.) Topics in Asian Thought (3)**
Prerequisite: Six units of philosophy.
Selected philosophical themes, traditions or figures, e.g., substantialism and nonsubstantialism in Indian Thought, Chinese Buddhist Schools, Gandhi. Maximum credit six units with three units applicable on a master's degree.

GRADUATE COURSES

- 601. (201.) Seminar in Ancient Philosophy (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 301.
Directed research in a major author (e.g., Plato or Aristotle), or a school (e.g., the Pythagoreans or the Stoics), or a problem (e.g., causation or the state). Maximum credit six units applicable on a master's degree.
- 602. (202.) Seminar in Medieval Philosophy (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 502.
Directed research in a major author (e.g., Augustine or Aquinas), or a school (e.g., neo-Aristotelianism), or a problem (e.g., political philosophy or reason and authority). Maximum credit six units applicable on a master's degree.
- 603. (203.) Seminar in Modern Philosophy (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 303.
Directed research in a major author (e.g., Hume or Kant), or a school (e.g., the continental rationalists or the British empiricists), or a problem (e.g., the nature of substance). Maximum credit six units applicable on a master's degree.
- 605. (205.) Seminar in Contemporary Philosophy (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 505A or 505B.
Directed research in a major author (e.g., Dewey or Wittgenstein), or a school (e.g., the pragmatists or the language analysts), or a problem (e.g., perception or personhood). Maximum credit six units applicable on a master's degree.
- 611. (211.) Seminar in Legal Philosophy (3)**
Prerequisite: Twelve upper division units in philosophy.
Directed research in recurrent themes of philosophical significance in jurisprudential literature.
- 612. (212.) Seminar in Political Philosophy (3)**
Prerequisite: Twelve upper division units in philosophy.
Directed research in a major problem in political philosophy or the work of a major political philosopher.
- 621. (221.) Seminar in Deductive Logic (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 521.
A comparison of deductive systems in logic. Problems of definability, consistency and completeness. The role of logic in the foundations of mathematics.
- 623. (223.) Seminar in Epistemology (3)**
Prerequisite: Twelve upper division units in philosophy.
Basic problems concerning meaning, perception and knowledge.
- 625. (225.) Seminar in Metaphysics (3)**
Prerequisite: Twelve upper division units in philosophy.
An inquiry into the search for significant qualities of reality.
- 628. (228.) Seminar in Ethics (3)**
Prerequisite: Twelve upper division units in philosophy.
Contemporary ethical issues. Critical analysis of the works of some leading theorists, such as Moore, Dewey, Stevenson and Toulmin.
- 631. (231.) Seminar in Semantics and Logical Theory (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 521 and 531.
Contemporary issues in the foundations of logic and theories of language.
- 635. (235.) Seminar in Philosophy of Religion (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 535.
A philosophical investigation of the nature of religious thought: its structure, growth and significance.
- 636. (236.) Seminar in Philosophy of Art (3)**
Prerequisite: Twelve upper division units in philosophy.
An analysis, criticism and comparative study of selected philosophies of art.
- 637. (237.) Seminar in Philosophy of Science (3)**
Prerequisite: Twelve upper division units in philosophy including Philosophy 522 and 537.
The methodology of the empirical sciences. The logical structure of science.

795. (295.) Seminar in Selected Topics (3)

Prerequisite: Twelve upper division units in philosophy.

Directed research in a major problem or movement in philosophy. Maximum credit six units applicable on a master's degree.

796. Studies in Philosophy (1-3) Cr/NC

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

Preparation for the comprehensive examination for students taking the M.A. under Plan B. Maximum credit three units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.

Prerequisites: Twelve upper division units in philosophy and consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Physical Education

Faculty

Chairman, Department of Physical Education: R. W. Wells
 Graduate Adviser: P. Governali
 Professors: Andrus, Benton, Carter, Cullen, Fox, Governali, Howell, M., Kasch, Murphy, Olsen, A., Olsen, L., Phillips, Sucec, Ziegenfuss
 Associate Professors: Barone, Broadbent, Franz, Friedman, Moore, Selder, Wells, Williamson, Willis
 Assistant Professors: Aufmesser, Gutowski, Hollyfield, Howell, R., Landis, Quinn, Smith, Whitby, Wilhem

Assistantships

Graduate teaching assistantships in physical education are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Physical Education, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Physical Education.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing the student must satisfy the basic requirements for the master's degree, described in Part Three of this catalog. The 30-unit program includes a minimum of 21 units in physical education selected from courses listed in this bulletin as acceptable on master's degree programs, of which at least 18 units must be in 600- and 700-numbered courses. Physical Education 791, Seminar in Research Techniques, and either Physical Education 799A, Thesis (Plan A), or Physical Education 795, Seminar (Plan B), are required. Students electing Plan B must pass a final written comprehensive examination in his area of specialization. Each candidate will be required to complete an area of specialization after consulting the graduate adviser.

Courses Acceptable on Master's Degree Programs in Physical Education

UPPER DIVISION COURSES

554A-554B. (154A-154B.) Problems in Dance (2-2)

Prerequisite: Physical Education 150A.
 Problems in ethnic or modern dance; history, anthropological basis, stagecraft, accompaniment, costuming.

555A-555B. (155A-155B.) Choreography in Contemporary Dance (3-3)

Two lectures and two hours of activity.
 Prerequisite: Consent of instructor.
 Experimentation in dance, relating contemporary theories to other art forms. Force and time-space relationships as factors of choreography.

- A. Production problems for large and small groups.
- B. Production problems for trios, duos and solos.

556. (156.) History and Philosophy of Dance (2)

The cultural background of all forms of dance in various civilizations with emphasis on the relationship of the social structure to the existing dance forms.

560. (160.) Applied Anatomy and Kinesiology (3)

Prerequisites: Biology 362 and Zoology 108.
 Arthrology, syndesmology and myology, with emphasis on movement analysis. Muscle groups and their functional relationships. Application of simple mechanical principles to movement analysis.

561. (161.) Physiology of Exercise (3)

Prerequisites: Biology 362 and Zoology 108.
 Effects of physical activities on the physiological functions of the body.

563. (163.) Biomechanics of Human Movement (2)

Prerequisite: Zoology 108.
 Mechanical principles as applied to movement; analysis and application to selected motor skills.

565. (165.) Prevention and Rehabilitation of Injuries to Athletes (2)

One lecture and three hours of laboratory.
 Prerequisites: Physical Education 560 and 561.
 Prevention and care of athletic injuries. Sports safety and effects of environment on health and welfare of the athlete. First aid, use of prescribed modalities.

567. (167.) Adapted and Special Physical Education (2)

Prerequisites: Physical Education 560 and 561.
 Adaptation of programs for atypical and handicapped individuals, including prescribed exercises, activities and evaluation.

570. (170.) Psychological Bases of Physical Education (3)

Prerequisite: Psychology 101.
 Psychological parameters related to physical performance and the acquisition of motor skills.

585. (185.) Measurement and Evaluation in Physical Education (3)

Two lectures and two hours of activity.
 Elements of statistical techniques appropriate to physical education criteria for test selection; construction and evaluation of tests; and the administration of a testing program in physical education.

GRADUATE COURSES

600. (200.) Seminar (3)

An intensive study in advanced physical education, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

631. (206.) Seminar in Competitive Athletics (3)

Prerequisite: Major or minor in physical education or recreation.
 Knowledge and appreciation of the skills, techniques and teaching methods involved in the coaching of athletics; the study of possible solutions to problems associated with the program of competitive school athletics.

660. (207.) Seminar in Advanced Kinesiology and Biomechanics (3)

Prerequisites: Physical Education 560, 563. Recommended: Physical Education 364.
 Principles of mechanics applied to the analysis of human motion. Electromyography and cinematography as aids in analysis. Kinetic analysis of movement.

661. (208.) Seminar in Advanced Physiology of Exercise (3)

Prerequisites: Physical Education 560 and 561.
 Advanced aspects of the physiology of exercise. Effects of exercise on human beings in relation to health, longevity, morphology and performance.

662. (223.) Advanced Exercise Physiology Laboratory (3)

Nine hours of laboratory.
 Prerequisite: Physical Education 567.
 A laboratory course designed to develop competency in respiratory metabolism pulmonary function, gas analysis, blood chemistry and ergometry. Experience in the application of exercise procedures with human subjects and analysis and interpretation of results.

663. (221.) Seminar in Exercise Electrocardiography (3)

Principles of resting and exercise electrocardiography with emphasis on ergometric methods and application to exercise physiology.

- 664. Seminar in Anthropometry and Motor Performance (3)**
Prerequisites: Physical Education 371 and 560.
Relationships between body structure and motor performance as compared through the techniques of anthropometry, somatotyping and body composition.
- 666. (227.) Fitness of Adults (3)**
One lecture and six hours of laboratory.
Prerequisite: Physical Education 567.
Evaluation, exercise prescription and training of adults. An understanding of the underlying hypokinetic diseases of adults and the procedures used in coping with the associated health problems of an automated environment.
- 667. (209.) Seminar in Advanced Adapted Activities (3)**
Prerequisite: Physical Education 567.
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.
- 668. (220.) Seminar in Principles of Neuromuscular Tension (3)**
Prerequisite: Physical Education 560.
Theories underlying the causes of muscular hypertension and the application of hypokinetic principles in daily living.
- 669. Cardiopulmonary Physiology, Pathology and Exercise (3)**
Prerequisite: Physical Education 561 or upper division course in human physiology.
Selected cardiovascular and pulmonary disease problems, their etiology, symptoms, physical limitations, and physiology as affected by exercise in therapy and rehabilitation.
- 670. (261.) Seminar in Motor Learning and Motor Performance (3)**
Prerequisite: Physical Education 570.
A review of research in physical education and related fields plus experimental laboratory experiences in motor learning.
- 674. (215.) Philosophical Foundations for Physical Education (3)**
Major philosophies and their application in physical education.
- 675. (203.) History of Physical Education (3)**
Historical forces guiding the development of physical education from ancient to modern times.
- 676. (205.) Seminar in Current Trends and Issues in Physical Education (3)**
A critical appraisal of contemporary trends and issues.
Investigation and analysis of professional literature.
- 677. (213.) Seminar in Problems in Physical Education (3)**
Prerequisite: Major or minor in physical education.
A study of selected areas of the physical education program.
- 678. Comparative Physical Education and Sport (3)**
Prerequisite: Physical Education 375.
Comparative analysis of developments and emergent characteristics of systems of physical education and sport in representative countries analyzed cross-nationally and the investigation of the comparative method including its history and research techniques.
- 680. (201.) Curriculum in Physical Education (3)**
Prerequisite: Major or minor in physical education.
Curricula in physical education. Special emphasis on curriculum construction and evaluation.
- 682. (202.) Administration of Physical Education in the Secondary Schools (3)**
Prerequisite: Major or minor in physical education.
Topics include personnel problems, selection and maintenance of equipment and facilities, program organization and evaluation, budget and related items.
- 685. (211.) Seminar in Advanced Evaluation in Physical Education (3)**
Prerequisite: Physical Education 585.
Methods, statistical techniques and apparatus used in testing physical performance. Sources of error, limitations on application and interpretation. Practice in construction and use of tests.
- 791. (291.) Seminar in Research Techniques (3)**
Prerequisites: Major in physical education and Physical Education 585.
Principles and methods of planning and carrying out the investigation of problems related to physical education. The development of research designs and practice in formulating and testing hypotheses as well as the interpretation of results. (Prerequisite to thesis.)

- 795. (295.) Seminar in Physical Education (3)**
Prerequisites: Physical Education 791 and advancement to candidacy for the master's degree in physical education.
Selected subjects in physical education culminating in written projects. Limited to students following Plan B for the Master of Arts degree in Physical Education.
- 798. (298.) Special Study (1-3) Cr/NC**
Prerequisite: Consent of department chairman.
Individual study. Maximum credit six units.
- 799A. (299.) Thesis or Project (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
- 799B. Thesis Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.



Physics

Faculty

Chairman, Department of Physics: Stephen B. W. Roeder
 Graduate Adviser: J. G. Teasdale
 Credential Adviser: L. E. Smith
 Professors: Garrison, Morris, Nichols, Piserchio, Reffuss, Roeder, Skolil, Smith, Snodgrass, Teasdale, Templin, Wolf
 Associate Professors: Burnett, Cottrell, Lilly, Shore
 Assistant Professor: Solomon

Assistantships

Graduate teaching assistantships in physics are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Physics, in the College of Sciences, offers graduate study leading to the Master of Arts degree in Physics, the Master of Science degree in Physics, and the Master of Science degree in Radiological Physics. The Master of Arts degree in Physics is designed primarily for those students who anticipate additional work leading to the doctorate degree in physics. The Master of Science degree is designed to augment the student's undergraduate training by an additional fifth year of more advanced studies and is best suited for those students who plan to terminate their graduate work at the fifth year level. Experimental facilities are available for studies in such fields as acoustics, nuclear physics, optics and spectroscopy, physical electronics, solid state physics, atomic physics, low temperature physics, and high energy physics. The Master of Science degree in Radiological Physics is designed to train radiological (health) physicists as required in areas where radioactive materials and other ionizing-radiation-producing devices are used, such as hospitals and related medical facilities, colleges and universities, industrial concerns, public health services, organizations operating nuclear power reactors, military installations, and the Energy Research and Development Administration and Nuclear Regulatory Commission.

Master of Arts and Master of Science Degrees in Physics

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog and pass the qualifying examination in physics. In addition, the undergraduate preparation in physics must have substantially satisfied the undergraduate requirements for the bachelor's degree in physics. (Refer to the general catalog for a description of these majors.) If the student's undergraduate preparation is deficient, he will be required to take courses for the removal of the deficiency. These courses, taken by the student as an unclassified graduate, are in addition to the minimum of 30 units for the master's degree. The results of the advanced test in physics are used as part of the evaluation of deficiencies.

Attention is called to the status of an unclassified student as described in Part Three of this catalog under Unclassified Student Enrollment.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree in Physics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes the following courses in physics: Physics 602A, 604A, 606, 608, 610A, 797 (3 units), and 799A. The remaining nine units must be approved by the student's departmental graduate committee. Students must demonstrate a reading knowledge of scientific French, German or Russian. The student is required to pass a final oral examination on his thesis.

Specific Requirements for the Master of Science Degree in Physics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes the following courses in physics: Physics 602A, 604A, 797 (3 units), 799A, and three additional units chosen from Physics 606, 608 and 610A. The remaining 15 units must be approved by the student's departmental graduate committee. The student is required to pass a final oral examination on his thesis.

Master of Science Degree in Radiological Physics

Admission to Graduate Study

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this catalog under Admission to the Graduate Division. In addition, the undergraduate preparation in biology, chemistry, mathematics, and physics must have substantially satisfied the undergraduate requirements for a baccalaureate degree in the life sciences or the physical sciences so that satisfactory progress can be made toward the master's degree. If the student's undergraduate preparation is deficient, he will be required to take courses for the removal of the deficiency. These courses, taken by the student as an unclassified graduate, are in addition to the minimum of 30 units for the master's degree.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this catalog.

Specific Requirements for the Master of Science Degree in Radiological Physics

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes the following courses:

	Units
Biology 362, Principles of Human Physiology	3
Biology 570, Radiation Biology	3
Biology 570L, Radiation Biology Laboratory	2
Physics 655, Radiation Physics	3
Physics 657, Physics of Radiation Therapy	1
Physics 659, Health Physics	3
Physics 797, Research	3
Physics 799A, Thesis	3
Approved 600- and 700-numbered courses	3
Total units	24

The remaining six units of the minimum 30 units required for the degree must be selected from upper division or 600- or 700-numbered courses approved by the departmental graduate committee. Of the 30 units, nine units must be selected from outside the Department of Physics. The student is required to pass a final oral examination on the thesis.

Courses Acceptable on Master's Degree Programs in Physics

UPPER DIVISION COURSES

- 510. (190.) Introductory Quantum Mechanics (3)**
Prerequisites: Mathematics 340B, Physics 350B and 354B.
The physical basis of the quantum theory and its mathematical formulation in terms of Schrodinger's wave equation.
- 532. (180.) Solid State Physics (3) II**
Prerequisites: Mathematics 340B, Physics 350B and 354B.
Elastic, thermal, electric, magnetic and optical properties of solids. Introduction to the energy band theory of solids, with applications to dielectrics, semiconductors and metals.
- 541. (122.) Senior Physics Laboratory (2)**
Six hours of laboratory.
Prerequisite: Physics 357.
Advanced experimental measurements in the field of classical and modern physics, in one of the following areas: acoustics, nuclear physics, heat and thermodynamics, advanced electronics, electricity and magnetism, microwaves and solid state physics. Combinations to two areas in one semester may be taken with the consent of the instructor. May be repeated with new content. Maximum credit four units.
- 542. (114.) Acoustics (3) I**
Prerequisites: Physics 350B and 357.
Wave motion and its application to the production, transmission and reception of sound. Development of acoustic circuits using electroacoustic analogs.
- 552. (186.) Modern Optics (3) I**
Prerequisites: Mathematics 340B, Physics 350B and 354B.
Optics of solids, coherence and partial coherence theory, Fourier optics, holography.
- 553. (187.) Modern Optics Laboratory (2)**
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Physics 552.
Experiments in various fields of modern optics such as holography, Fourier spectroscopy, spatial filtering, nonlinear effects and coherence measurements. May be repeated with new content with the approval of the instructor for a maximum of four units.
- 561. (148.) Nuclear Physics Laboratory (3) II**
One lecture and six hours of laboratory.
Prerequisites: Physics 303 or 357, Mathematics 123 or 152.
Techniques and instrumentation for the detection, identification and measurement of the properties of nuclear radiations and particles, and their use in the study of nuclear reactions.
- 564. (151.) Nuclear Physics (3)**
Prerequisite: Physics 510.
Nuclear Phenomena, theory of the nucleus, cosmic rays, and high-energy reactions of particles.
- 570. Relativity (3)**
Prerequisites: Mathematics 149 or 520, 531 or 340B, and Physics 350B and 354B.
Relative coordinates, Lorentz transformation, covariant formulation of the laws of physics, applications of special relativity, introduction to curved space time, cosmology.

GRADUATE COURSES

- 600. (200.) Seminar (1-3)**
Prerequisite: Consent of instructor.
An intensive study in advanced physics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 602A-602B. (210A-210B.) Mathematics of Physics (3-3)**
Prerequisite: Mathematics 340B. Physics 602A is prerequisite to 602B.
Topics from matrix theory, vector and tensor analysis, orthogonal function theory, calculus of variations and probability theory with particular emphasis on applications to physical theory.
- 604A-604B. (270A-270B.) Electromagnetic Theory (3-3)**
Prerequisite: Physics 400. Physics 604A is prerequisite to 604B.
Boundary value problems; time varying electric and magnetic fields; propagation of radiation; antennas, wave guides.
- 606. (219.) Statistical Mechanics (3)**
Prerequisites: Physics 408 and 510.
Classical and quantum statistics, kinetic theory, low-pressure phenomena, Boltzmann transport equation, irreversible processes.
- 608. (205.) Theoretical Mechanics (3)**
Prerequisite: Physics 408.
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.
- 610A-610B. (275A-275B.) Quantum Mechanics (3-3)**
Prerequisites: Physics 408 and 564. Physics 610A is prerequisite to 610B.
Quantum theory of radiation, molecular and nuclear systems. Approximation methods.
- 632. (280.) Theory of the Solid State (3)**
Prerequisites: Physics 408, 510 and 532.
The band theory of solids, with applications to the electrical and optical properties of dielectrics, semiconductors and metals.
- 648. (231.) History of Physics (2)**
Prerequisite: Bachelor's degree in physics or chemistry.
Lectures and readings in the history of physics with emphasis on the history of classical physics and the subsequent development of the quantum theory.
- 652. (286.) Advanced Optics (3)**
Prerequisite: Physics 552.
Selected topics in advanced optics such as rigorous diffraction theory, optical spectra, lasers, nonlinear optics and applications of Fourier analysis to optical systems and information processing.
- 653. Advanced Optics Laboratory (2) I, II**
Six hours of laboratory.
Prerequisite: Registration requires prior approval of instructor.
Experimental projects involving lasers, nonlinear, optical phenomena, Fourier optics, spectroscopy, optical scattering and other areas of current optical interest.
- 654. Gravitation (3)**
Prerequisite: Mathematics 149 or 520, 531 or 340B and Physics 570.
Differential geometry, metric geodesics, Equivalence Principle, collapsed objects, black holes, gravitational waves, evolution of the universe.
- 655. (220.) Radiation Physics (3) I**
Two lectures and three hours of laboratory.
Prerequisite: Physics 561.
Topics and problems including sources of nuclear, X-ray and accelerator radiation; its interaction with matter; shielding and detection.
- 657. (221.) Physics of Radiation Therapy (1) II**
Three hours of laboratory.
Prerequisite: Physics 655.
Topics and experimental problems in the use of ionizing radiation in therapy.
- 659. (222.) Health Physics (3) II**
One lecture and six hours of laboratory.
Prerequisite: Physics 561.
Principles of radiation protection, radiation safety criteria and the assumptions inherent in radiation protection guides.
- 660. Physics of Nuclear Medicine (1) II**
Three hours of laboratory.
Prerequisite: Physics 561.
Topics and experimental problems in the diagnostic use of radioactive isotopes in nuclear medicine.

- 661. (248.) Advanced Nuclear Physics Laboratory (3)**
One lecture and six hours of laboratory.
Prerequisite: Physics 561.
Experimental work involving subcritical reactor assembly, neutron generator, whole-body counter, etc.
- 662. Seminar in Radiological Sciences (1)**
Seminar in selected topics in Radiological Biology, Chemistry and Physics.
May be repeated with new content. Maximum credit three units applicable on a master's degree.
- 664. (251.) Nuclear Physics (3)**
Prerequisites: Physics 408, 510, and 564.
Theory of nuclear forces, nuclear reactions, interaction of radiation with matter, radioactivity, nuclear structure and high energy physics.
- 665. Physics of Diagnostic X-Rays (1) I**
Three hours of laboratory.
Prerequisite: Physics 561.
Topics and experimental problems in the use of diagnostic x-rays.
- 667. Reactor Health Physics (1) II**
Three hours of laboratory.
Prerequisites: Physics 302, 655 and 659.
Topics and experimental problems in Health Physics in nuclear reactor facilities.
- 669. Accelerator Health Physics (1) I**
Three hours of laboratory.
Prerequisite: Physics 655 and 659.
Topics and experimental problems in Health Physics in accelerator facilities.
- 797. (297.) Research (1-3) Cr/NC**
Prerequisite: Consent of department chairman.
Research in one of the fields of physics. Maximum credit six units applicable on a master's degree.
- 798. (298.) Special Study (1-3) Cr/NC**
Individual study. Maximum credit six units.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
- 799A. (299.) Thesis (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis in physics for the master's degree.
- 799B. Thesis Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Political Science

Faculty

Chairman, Department of Political Science: L. M. Terrell
Graduate Adviser: D. H. Johns
Professors: Andrain, Crain, Feierabend, Funston, Gripp, Hofstetter, Janssen, Johns, Kahng, Miles, Nesvold, Padgett, Schultze
Associate Professors: Anderson, Conniff, Cutter, Hobbs, Lewin, Little, Loveman, Soule, Terrell
Assistant Professors: Fairlie, Jones, Keiser

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in political science are available to a limited number of qualified students. Application blanks and further information may be obtained from the Chairman of the Department of Political Science.

General Information

The Department of Political Science, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Political Science. For graduate study in connection with the Master of Arts degree in Social Science, refer to this catalog under Social Science. Research facilities provided by the Department of Political Science include the Public Affairs Institute, the Political Science Research Center, the International Relations Center, and the Social Science Research Laboratory. The Department of Political Science is an associate member of the Inter-University Consortium for Political Research.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Political Science must have completed 30 units of social science, including at least 12 upper division units in political science, as approved by the department and must have earned a grade point average of 2.75 for the last 60 units of undergraduate work, and a 3.00 grade point average for upper division courses in political science as well as a 3.00 grade point average for all work taken in political science.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as stated in Part Three of this catalog. In addition, students must have received credit for a three-unit course in statistics.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes a minimum of 24 units in political science from courses listed below as acceptable on master's degree programs. At least 21 units must be in 600- and 700-numbered courses including Political Science 601 (Seminar in the Scope and Method of Political Science), five other graduate seminars in political science, and Political Science 799A (Thesis). A final oral examination on the general field of the thesis is also required.

Courses Acceptable on Master's Degree Programs in Political Science

UPPER DIVISION COURSES

- 501A-501B. (111A-111B.) History of Western Political Thought (3-3)**
Prerequisite: Political Science 501A is prerequisite to 501B.
Development of political ideas from the Golden Age of Greece until the French Revolution. Relevance of theory to a critical understanding of concrete political and social problems involving power, freedom, equality, justice and action. 501A emphasizes Plato, Aristotle, Augustine, Aquinas, and Marsilius of Padua. 501B stresses major political theorists such as Machiavelli, Hobbes, Locke, and Rousseau.
- 504. (106B.) Socialist Political Thought (3) I, II**
Prerequisites: Political Science 101 or 102, and 501B or 302.
Selected topics in socialist thought.
- 505. (105.) American Political Thought (3) I, II**
The origin and development of American political ideas from colonial times to the present.
- 513. (113.) The Theory of Political Inquiry (3)**
Prerequisites: Political Science 101, 102 and 103.
Philosophical bases of science with reference to political science. Concepts, concept formation, theory building and verification.
- 514. (114.) Problems in Political Theory (3)**
Prerequisite: Six upper division units in political theory.
Research methods in political theory; intensive development of selected issues.
- 515A-515B. (100A-100B.) Research Methods in Political Science (3-3) I, II**
Prerequisite: Political Science 201. Political Science 515A is prerequisite to 515B.
The research process, from research design through data processing, analysis and interpretation. Problems of application to election statistics, census data, roll-call records, sample survey data and biographical information.
- 522. (118.) Urban Politics (3)**
Prerequisite: Political Science 101 or 102.
The processes by which social conflicts in American urban areas are represented and regulated. Urban political culture; ecology; group development and activity; power structures; and reform movements are surveyed. The character of the urban political "problem" and proposed solutions are evaluated.
- 523. (119.) Community Political Behavior (3)**
Prerequisite: Political Science 101 or 102.
The studies of structure of community power are summarized and critically evaluated. The issues of community conflict are treated both by case study and comparative methods. Examples are drawn primarily from American-urban experience.
- 530. (120.) Political Parties (3) I, II**
Prerequisite: Political Science 102 or 320.
A critical analysis of the political party as a part of the process of government; party organization and activities; nominating and campaign methods; theories and functions of the party system; party responsibility. The function of the two-party system in American government.
- 531. (126.) Political Groups and Movements (3) I, II**
Prerequisite: Political Science 101 or 102.
Pressure group activity, lobbies, mass movements; factors which explain origins and motivations of group behavior; votes, money, information, protest as political resources; theories of pluralism, power elite and mass society; class and ethnic politics.
- 536. (124.) The American Presidency (3) I, II**
Prerequisites: Political Science 101 or 102.
Analysis of principal institutions, functions and problems of the presidency and federal executive branch. Attention given to presidential leadership, staffing, executive-legislative relations and policy formation.
- 537. (129.) The Politics of Bureaucracy (3) I, II**
Prerequisites: Political Science 101 or 102.
An analysis of the bureaucracy as an actor in the political system.
- 543-S. (123-S.) Contemporary American Politics (3) S**
A consideration of a selected group of current major political problems in terms of their possible future implications and of their relationship to established American democratic principles and ideals.
- 546. (138.) Law and the Political System (3)**
Forces influencing the making of law; relationship between social and legal change; nature and limits of the judicial function.
- 547A-547B. (139A-139B.) American Constitutional Law (3-3)**
Prerequisite: Political Science 547A is prerequisite to 547B.
Principles of American Constitutional law. Includes judicial review, the federal system, the separation of powers, the nature of selected Congressional powers, and the liberties protected by the constitution against national and state action. Meets the graduation requirement in the United States Constitution.
- 550. Jurisprudence (3) I, II**
Prerequisite: Political Science 101 or 102 or three upper division units within Group IV.
Theoretical foundations of law; relationship between legal and political philosophy; development of law and legal systems.
- 555. (190.) Comparative Political Systems (3) I, II**
Prerequisite: Political Science 103.
An examination of selected political and governmental systems for purposes of comparative study and analysis to determine similarities, differences and general patterns and universals among political systems.
- 556. (185.) Governments of Continental Europe (3) I, II**
The political systems of countries of western continental Europe.
- 557. (180.) Government of England (3) II**
The structure and functioning of the English parliamentary system with emphasis on present-day political principles and parties.
- 558. (186.) Comparative Communist Governments (3) I, II**
The interrelations between the theory and practice of modern communism as found in representative communist systems.
- 559. (181.) Government of the Soviet Union (3) I**
Theory and practice of government in the Soviet Union, with some attention to foreign affairs.
- 561. (197.) Governments and Politics of the Developing Areas (3) I, II**
Prerequisite: Political Science 101 or 103.
Internal political systems, governmental structures and the foreign policies of developing nations.
- 562. (187.) Governments and Politics of the Far East (3)**
The internal political structure and foreign policies of China, Japan and Korea.
- 563. (189.) Government and Politics of the Middle East (3)**
The governmental and political structures of representative states in the Middle East including Turkey, Israel and the Arab states.
- 564. (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.
- 566. (194.) Political Change in Latin America (3)**
Prerequisite: Political Science 101 or 103.
General pattern of politics and political development in Latin America with an emphasis on those features which condition domestic and foreign policy making.
- 567. (195.) Political Systems of Latin America (3)**
Prerequisite: Political Science 566.
Domestic and international politics of selected Latin American states.
- 568. (184.) The Mexican Political System (3)**
Prerequisite: Political Science 101 or 103.
Principal factors in Mexican governmental decision making. Ideology, political groups, tactics of leaders and governmental structure.
- 571. (193.) Seminar in Cross-national Studies (3) I, II**
Prerequisite: Any upper division course in comparative politics.
Cross-national analysis of institutional norms, attitudes and behavior in relation to government; factors which determine patterns and styles of political participation in contemporary societies.

576. (172.) International Organization (3) I, II

Prerequisites: Political Science 101 and 102.

International organization both as institutions and as processes, including the United Nations, regional organizations, multinational corporations, international stratification, development of international law, international integration and disintegration.

577. (173.) Principles of International Law (3)

The function of law in the international community. The historical development of the ideas and rules of international law and their place in the modern diplomatic and legal structure.

579. (174.) National Security Policy (3)

Objectives, instruments and consequences of national security policy.

581. (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.

582. (175.) International Relations of the Latin American States (3)

The foreign policies of the Latin American states; the organization of American states; relationships with the United Nations and with the United States.

590. (165.) Dynamics of Modern International Crises (3) I, II

Prerequisite: Consent of instructor.

The determination and analysis of facts surrounding international crises since World War II; the evaluation of these crises and their effects upon external policies of the United States and the operations of the United Nations.

GRADUATE COURSES**601. (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.

605. (210.) Seminar in Political Theory (3)

Maximum credit six units applicable on a master's degree.

620. (215.) Seminar in American National Government (3)

Maximum credit six units applicable on a master's degree.

622. (255.) Seminar in Metropolitan Government and Politics (3)

Prerequisite: Political Science 321 or 522 or 523.

Government and politics in the world's major metropolitan areas. Maximum credit six units applicable on a master's degree.

625. (221.) Seminar in Political Participation (3)

Prerequisite: Six upper division units in political science, three units of which must be from Political Science courses 320 through 344, 522 through 543S.

American political culture and subculture groupings as related to various dimensions of political behavior.

630. (220.) Seminar in Politics (3)

Prerequisite: Six upper division units in political science, three units of which must come from Political Science courses 320 through 344, 522 through 543S.

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.

638. (225.) Seminar in the Legislative Process (3)

Prerequisite: Six upper division units in political science.

Legislative institutions and processes. Emphasis on U.S., national, state and local legislatures.

639. (226.) Seminar in Political Psychology (3)

(Same course as Psychology 746.)

Prerequisites: Six units selected from Psychology 340, 410, 412; Political Science 325, 326, 515A-515B, 555.

Psychological factors of the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus and participation.

646. (230.) Seminar in Public Law (3)

Maximum credit six units applicable on a master's degree.

655. (280.) Seminar in General Comparative Political Systems (3)

Prerequisite: Political Science 555 or 561, and three additional upper division units in political science.

The field of comparative politics, including historical developments, major theoretical approaches, substantive concerns, uses and limitations of the comparative method, methodological innovations in study of foreign political systems.

656. (281.) Seminar in Western Political Systems (3)

Prerequisite: Six upper division units in political science.

Comparative study of European and other modern political systems. Conditions responsible for the attainment and maintenance of democratic government. The relationship between social modernity and the functioning of Western democratic political institutions.

658. (284.) Seminar in Communist Political Systems (3)

Prerequisite: Six upper division units in political science.

The differences and similarities among Communist nations in Europe and Asia, with particular reference to instruments of power and ideology. A comparison of Communist ruling techniques and processes.

661. (282.) Seminar in the Political Systems of the Developing Nations (3)

Prerequisite: Six upper division units in political science.

Theoretical analysis of political development, modernization and industrialization in the emerging nations. Search for valid generalizations about the non-Western political process. Political trends and developments in the developing nations.

667. (283.) Seminar in Latin American Political Systems (3)

Prerequisite: Political Science 555 or 561 or 566.

Political developments in selected Latin American nations. May be repeated with new content. Maximum credit six units.

675. (270.) Seminar in International Relations (3)

Maximum credit six units applicable on a master's degree.

676. (272.) Seminar in International Organization (3)

Prerequisite: Political Science 576.

Analysis of selected problems of international organization with special reference to those of the United Nations. Oral and written reports.

685. (275.) Seminar in Theories of International Relations (3)

Prerequisite: Political Science 375A or 375B.

Theoretical concepts used in the study of international political systems. Maximum credit six units applicable on a master's degree.

700. (290.) Bibliography (1)

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

795. (291.) Problem Analysis (3)

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.

797. (297.) Research in Political Science (3) Cr/NC

Prerequisite: Consent of the department chairman.

Research in political theory, political parties, comparative government, international relations, public law or American government.

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

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

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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

Psychology

Faculty

Chairman, Department of Psychology: John M. Grossberg
 Graduate Adviser: W. A. Hunrichs
 Professors: Alf, Dicken, Feierabend, Gallo, Graf, Graham, Grossberg, Harari, Harrison, Hillix, Hunrichs, Kaplan, O., Karen, Kass, Kinnon, Koppman, Leckart, Leukel, Levine, McDonald, O'Day, Parker, Penn, Radlow, Rodin, Sattler, Schulte, Segal, Sheposh, Stevens, Yaremko
 Associate Professors: Bryson, DeFran, Franzini, Hornbeck, Litrownik, Lynn, Mollenauer, Plotnik, Price, Psomas, Sand, Smith, Spinetta
 Assistant Professors: Borges, Bryson, R., Fenson, Kaplan, R., McCordick, Saccuzzo, Scollay

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in psychology are available to a limited number of qualified students. Application forms and further information may be obtained from the Chairman, Graduate Assistantships Committee, Department of Psychology.

General Information

The Department of Psychology, in the College of Sciences, offers graduate study leading to the Master of Arts degree in Psychology and the Master of Science degree in Psychology. The Master of Arts program is a general psychology program emphasizing predoctoral preparation in one or more areas of psychology. The master of science degree programs offer a choice of study in two concentrations: clinical psychology, and industrial and organizational psychology. The master of science programs are intended to serve a dual purpose of preparation of the student for employment upon completion of the master's degree, as well as preparation for doctoral work in specified areas. The doctorate in psychology is not offered at San Diego State University.

Modern resources are available on campus, at the San Diego Zoo and other community facilities for graduate education and research in comparative, experimental and physiological psychology. Facilities for clinical practicum and community psychology field work are available on campus in our psychological clinic and in selected local mental health agencies. Opportunities for experience in industrial and organizational psychology are available at nearby military research and personnel-processing units as well as in other local industries. Experimental cubicles, equipment and supplies are available in the department for graduate research. Adequate computer facilities and services are available at the Computer Center.

Admission to Graduate Study

In seeking admission to the graduate program in psychology, the student should write directly to the Graduate Studies Coordinator, Department of Psychology, requesting application materials. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms.

STUDENTS WILL BE ADMITTED TO GRADUATE PROGRAMS IN PSYCHOLOGY ONLY IN THE FALL SEMESTER AND APPLICATIONS MUST BE RECEIVED BY THE DEPARTMENT OF PSYCHOLOGY NOT LATER THAN FEBRUARY 1.

Concurrent with application to the department, the student must file an application for admission to San Diego State University with the Office of Admissions. Acceptance by the University does not guarantee acceptance to the psychology program.

To be considered for admission to the graduate programs in psychology, all students must satisfy the general requirements for admission to the University with classified graduate standing as described in Part Three of this catalog. In addition, applicants must submit a copy of all transcripts of previous college work, three letters of recommendation from persons familiar with his/her academic performance, and score reports for the GRE Aptitude Test and the GRE Advanced Test in Psychology. These materials must be submitted to the Department of Psychology by March 1 and are in addition to any materials requested by the Graduate Division or the Admissions Office.

Students are advised to take the necessary examinations by December of the year prior to the year in which they are seeking enrollment.

To qualify for admission to the graduate program in psychology, the student must have:

1. An undergraduate major in psychology consisting of at least 24 upper division units with a grade point average of at least 3.0. The major must include work in general psychology, physiological psychology, statistical methods, psychological testing, abnormal psychology, and at least two laboratory courses in psychology. At San Diego State University these specific course requirements are met by Psychology 210, 260, 270, 350, 405, 410 and one course from 411, 412, 413, 414, 415, 416, 417 or 418.
2. A grade point average of not less than 3.0 in the last 60 units (90 quarter units) of the undergraduate program.
3. A total scale score of 950 or above on the GRE Aptitude Test.
4. A score above the 50th percentile rank on the GRE Advanced Test in Psychology. The student should take this test as well as the GRE Aptitude Test in sufficient time so that the results will be available by a March 1 deadline. It should be requested by the student that the score report for these tests be forwarded directly to the Graduate Division office and the Department of Psychology.

Meeting all of the indicated criteria does not guarantee admission to the program, since admission is also dependent on the facilities and resources available in the department.

Advancement to Candidacy

The student must satisfy the general requirements for advancement to candidacy as stated in Part Three of this catalog. Having obtained three grades of C or lower in graduate courses automatically precludes advancement to candidacy.

In addition, students must have an approved thesis proposal prior to advancement to candidacy.

General Requirements for all Master's Degree Programs

In addition to meeting the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units (36 units for the clinical concentration) approved by the departmental graduate coordinator. Students who are not accepted into the graduate program are not permitted to enroll in any 600-numbered (or higher) courses in psychology.

Psychology 570 or 670 is required for all master's degree programs in the Department of Psychology, unless similar content has been completed at the undergraduate level. Psychology 798 (Colloquium) and 799A (Thesis), and an oral examination on the thesis, are also required in all master's degree programs in the Department of Psychology. A maximum of two units credit in 798 (Colloquium) can apply toward completion of the program. There is no foreign language requirement for any advanced degree in psychology at San Diego State University, but students who aspire to a doctorate in this field should be advised that some doctoral programs require a reading knowledge in one or two languages.

Specific Requirements for the Master of Arts Degree

Within the 30-unit general requirement set forth above, the master of arts program requires completion of at least 30 units of courses in psychology, no more than seven units of which may be at the 500 level, including Psychology 605, 798 (Colloquium), and 799A (Thesis). Psychology 570 or 670 is required for this program if similar content has not been completed as an undergraduate. Psychology 580 is also required for this program if similar content has not been completed as an undergraduate.

Specific Requirements for the Master of Science Degree

Within the 30-unit (36 units for clinical psychology) general requirement set forth above, the master of science degree may be obtained with the following concentrations:

1. **Clinical Psychology:** At least 36 units of courses in psychology, no more than seven units of which may be at the 500 level, including Psychology 650, 651 or 652, 654, 655 or 656, 796 (Practicum), 798 (Colloquium), and 799A (Thesis). Psychology 570 or 670 is required for this program if similar content has not been completed as an undergraduate. Psychology 551 is also required for this program if similar content has not been completed as an undergraduate. Registration for six units of Psychology 796 (Clinical practicum) is contingent upon prior cooperative arrangement by the student and the Department of Psychology Practicum Committee, and is exempt from the University's requirement that courses graded Cr/NC be limited to 30% of units for the master's degree.
2. **Industrial and Organizational Psychology:** At least 30 units of courses in psychology, no more than seven units of which may be at the 500 level, including Psychology 621, 622, 675, 797, 798 (Colloquium), and 799A (Thesis). Psychology 570 or 670 is required for this program if similar content has not been completed as an undergraduate. Psychology 520 is also required for this program if similar content has not been completed as an undergraduate.

Area Requirement Courses

The courses listed below constitute core courses required for the various graduate programs as listed in the Specific Requirements.

- 551. Clinical Psychology: Theory and Practice (4)
- 570. Advanced Statistics (3)
- 580. History of Psychology (3)
- 605. (222.) Seminar in Theoretical Psychology (3)
- 620. Seminar in Industrial-Organizational Psychology (3)
- 621. (219.) Seminar in Personnel Psychology (3)
- 622. (220.) Seminar in Organizational Psychology (3)
- 650. (233.) Seminar in Counseling and Psychotherapy Laboratory (4)
- 651. (211.) Seminar in Behavior Disorders of Childhood and Adolescence (3)
- 652. (212.) Seminar in Behavior Disorders of Adults (3)
- 654. (204.) Seminar in Psychological Assessment I (4)
- 655. (205.) Seminar in Psychological Assessment II (4)
- 656. (234.) Seminar in Behavior Therapy Laboratory (4)
- 670. (223.) Experimental Design (3)
- 675. (225.) Seminar in Principles of Test Construction (3)
- 796. (296.) Clinical Practicum (3 or 6) Cr/NC
- 797. (297.) Research (1-3) Cr/NC
- 798. (298.) Special Study (1-3) Cr/NC
- 799A. (299.) Thesis (3) Cr/NC

Additional Courses

The following courses are not part of area requirements and are offered as electives to complete the master of arts and master of science programs. The student is advised to consult the current class schedule since some of the courses may not be offered every semester.

- 561. (141.) Neural Bases of Behavior (4)
- 571. Correlational Analysis (3)
- 587. (275.) Advanced Principles of Learning (3)
- 607. (278.) Seminar in Applied Community Psychology (3)
- 609. (295.) Field Work in Community Psychology (3)
- 700. (200.) Seminar (3)
- 718. Seminar in Research in Operant Behavior (3)
- 745. (221.) Seminar in Problems in Social Psychology (3)
- 746. (226.) Seminar in Political Psychology (3)
- 757. (201.) Seminar in Selected Topics in Clinical Psychology (3)
- 760. (230.) Seminar in Physiological Correlates of Behavior (3)
- 761. (231.) Seminar in Ethology and Comparative Psychology (3)
- 764. Seminar in Psychopharmacology and Behavioral Disorders (3)

Courses Acceptable on Master's Degree Programs in Psychology

UPPER DIVISION COURSES

- 551. Clinical Psychology: Theory and Practice (4) I, II**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350, 405 and consent of instructor.
Clinical assessment, theory and practice of behavior change, and professional ethics. Not open to students with credit in Psychology 451 and 653.
- 561. (141.) Neural Bases of Behavior (4)**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 260 or six units in the biological sciences, and consent of instructor.
Elements of neurology and psychobiology with emphasis on sensory, central, and motor mechanisms. (Formerly numbered Psychology 461.)
- 570. (170.) Advanced Statistics (3) I, II**
Prerequisite: Psychology 270.
Further study of quantitative methods in psychology with emphasis on methods of correlation, chi-square, and contingency, and an introduction to the analysis of variance. (Formerly numbered Psychology 470.)
- 571. (171.) Correlational Analysis (3)**
Prerequisites: Psychology 270 and consent of instructor.
Quantitative methods in psychology with emphasis on methods of correlation, multiple correlation, partial correlation, and factor analysis. Not open to students with credit in Psychology 471 and 771.
- 580. (177.) History of Psychology (3) I, II**
Limited to psychology majors with senior standing or graduate students.
The historical background of modern psychology. Not open to students with credit in Psychology 480 and 680.
- 587. (275.) Advanced Principles of Learning (3)**
Prerequisites: Psychology 210, 270 and consent of instructor.
The empirical data, basic principles and theoretical positions of major learning theorists. Not open to students with credit in Psychology 487 and 711.

GRADUATE COURSES

- Graduate courses in psychology are not open to postbaccalaureate unclassified students.
Priority for enrollment in graduate courses in psychology is given to psychology students who have the courses as requirements in their respective programs.
- 605. (222.) Seminar in Theoretical Psychology (3)**
Prerequisites: Psychology 480 or 680, and consent of graduate adviser.
Basic nature of theories, their relationships to data, and the characteristics of various types of constructs used in psychological theories.
- 607. (278.) Seminar in Applied Community Psychology (3)**
Prerequisite: Consent of graduate adviser.
Systematic integration of principles of psychotherapy, behavior modification, child development, gerontology, social psychology, vocational testing, and psychological methodology into community psychology.
- 609. (295.) Field Work in Community Psychology (3)**
Prerequisites: Psychology 607 and consent of graduate adviser.
Applied community psychology in the service of the community, including supervision of undergraduate students and contact with community organizations.
- 620. Seminar in Industrial-Organizational Psychology (3)**
Prerequisite: Consent of graduate adviser.
Theoretical issues, methodologies, and research findings relevant to the application of psychology to the world of work and to an understanding of behavior in organizations. Not open to students with credit or concurrent registration in Psychology 320 and 321.

- 621. (219.) Seminar in Personnel Psychology (3)**
Prerequisites: Psychology 320 or 620, and consent of graduate adviser.
Problems and procedures in selection, classification, and performance appraisal, focusing on testing in industry, the interview, and other selection and assessment devices. Criterion development and measurement methods.
- 622. (220.) Seminar in Organizational Psychology (3)**
Prerequisites: Psychology 321 or 620, and consent of graduate adviser.
Applications of psychological principles and methods of investigation to problems of industrial relations and motivation of employees; factors influencing morale and employee productivity; criteria of job proficiency; psychological aspects of worker-management relationships and leadership.
- 650. (233.) Seminar in Counseling and Psychotherapy and Laboratory (4)**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 451 or 653, and consent of graduate adviser.
Supervised practice in the application of psychotherapeutic and counseling techniques from selected cognitive, dynamic, interpersonal, and behavioral approaches.
This course is open only to students accepted in the clinical psychology concentration.
- 651. (211.) Seminar in Behavior Disorders of Childhood and Adolescence (3)**
Prerequisites: Psychology 330, 350 and consent of graduate adviser.
Contemporary approaches to emotional and behavioral problems of childhood and youth. Considers developmental, cognitive and social variables as well as theory and treatment.
- 652. (212.) Seminar in Behavior Disorders of Adults (3)**
Prerequisites: Psychology 350 and consent of graduate adviser.
Contemporary approaches to emotional and behavioral problems of adulthood. Considers developmental, cognitive and social variables as well as theory and treatment.
- 654. (204.) Seminar in Psychological Assessment I (4)**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 350, 405, and consent of graduate adviser.
Theory and practice in assessment of intelligence and special abilities.
- 655. (205.) Seminar in Psychological Assessment II (4)**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 654 and consent of graduate adviser.
Theory and practice in assessment of special abilities, personality and behavior disorders.
- 656. (234.) Seminar in Behavior Therapy and Laboratory (4)**
Two lectures and six hours of laboratory.
Prerequisites: Psychology 451 or 551, 487 or 711, and consent of graduate adviser.
Supervised practice in the application of behavior therapy (individual treatment) and behavior modification (group method).
This course is open only to students accepted in the clinical psychology concentration.
- 670. (223.) Experimental Design (3)**
Prerequisites: Psychology 410, consent of graduate adviser and instructor.
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.
- 675. (225.) Seminar in Principles of Test Construction (3)**
Prerequisites: Psychology 405, 670 and consent of graduate adviser.
Detailed consideration of adequate sampling techniques, item construction, item analysis, determination and enhancement of reliability and validity of tests.
- 700. (200.) Seminar (3)**
Prerequisite: Consent of graduate adviser.
An intensive study in advanced psychology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
- 718. Seminar in Research in Operant Behavior (3)**
Prerequisites: Psychology 316 or 416 or 487 or 711 and consent of graduate adviser.
Selected research topics in the experimental analysis of behavior. Maximum credit six units.

- 745. (221.) Seminar in Problems in Social Psychology (3)**
Prerequisites: Psychology 340 or 412, and consent of graduate adviser.
Factors influencing the formation of attitudes, opinions, and stereotypes; the establishment of roles during socialization of the individual; social crises, change, and resistance to change; the causes and alleviation of interpersonal conflict.
- 746. (226.) Seminar in Political Psychology (3)**
(Same course as Political Science 639.)
Prerequisites: Psychology 340 or 410, and consent of graduate adviser.
Psychological factors of the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus, and participation.
- 757. (201.) Seminar in Selected Topics in Clinical Psychology (3)**
Prerequisites: Psychology 451 or 551 and consent of graduate adviser.
Advanced study of such clinical topics as community mental health, forensic psychology, ethics, and autogenic training. Topics will vary on a semester basis.
- 760. (230.) Seminar in Physiological Correlates of Behavior (3)**
Prerequisites: Psychology 260 or six units of biology; and consent of graduate adviser.
An exploration of current research and theory in physiological psychology with emphasis on behavioral correlates and psychophysiology.
- 761. (231.) Seminar in Ethology and Comparative Psychology (3)**
(Same course as Biology 610.)
Prerequisites: Psychology 414 or 417 or Biology 520, or Zoology 570, and consent of graduate adviser.
Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.
- 764. Seminar in Psychopharmacology and Behavioral Disorders (3)**
Prerequisites: Psychology 260 and consent of graduate adviser.
Drugs as cause and cure of behavioral problems. A review of drugs commonly used to change behavior in primary schools, psychiatric centers, in-home programs and mental hospitals.
- 796. (296.) Clinical Practicum (3 or 6) Cr/NC**
Prerequisites: Psychology 451 or 551 and 650 and 654 and consent of the Department of Psychology Practicum Committee.
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.
This course is open only to students accepted in the clinical psychology concentration.
- 797. (297.) Research (1-3) Cr/NC**
Prerequisite: Consent of graduate adviser.
Research in one of the fields of psychology. Maximum credit six units applicable on a master's degree.
- 798. (298.) Special Study (1-3) Cr/NC**
Prerequisite: Consent of graduate adviser.
Individual projects involving library or laboratory research in any area of psychological investigation or interest. Maximum credit six units applicable on a master's degree.
- 799A. (299.) Thesis (3) Cr/NC**
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree. Credit is contingent upon acceptance of the completed thesis by the Department of Psychology.
- 799B. Thesis Extension (0) Cr/NC**
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Public Administration and Urban Studies

Faculty

Director, Public Administration and Urban Studies: J. D. Kitchen
 Coordinator, City Planning Program: J. A. Clapp
 Coordinator, Criminal Justice Administration Program: R. L. Boostrom
 Graduate Advisers:
 Master of Public Administration: W. R. Bigger, J. A. Gazell, S. H. Gilbreath, R. A. Hamilton, J. D. Kitchen, R. L. Stock, L. Thompson, M. G. Walshok
 Master of Science in Criminal Justice Administration: R. L. Boostrom, G. T. Gitchoff, W. C. Smith
 Master of City Planning: J. A. Clapp, A. W. Corso, L. M. Rea
 Professors: Bigger, Clapp, Gazell, Gilbreath, Gitchoff, Kitchen
 Associate Professors: Boostrom, Hamilton
 Assistant Professors: Corso, Rea, Smith, Stock, Thompson, Walshok

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in public administration are available to a limited number of qualified students. Application blanks and further information may be obtained from the director of programs in public administration and urban studies.

General Information

Public Administration and Urban Studies, in the College of Professional Studies, offers graduate study leading to the Master of Public Administration degree, the Master of Science in Criminal Justice Administration degree, and the Master of City Planning degree. Research facilities provided include the Institute of Public and Urban Affairs and the Public Administration Center. The San Diego metropolitan community affords significant internship opportunities for the graduate student in federal, state, and local government agencies.

Public Administration and Urban Studies is a member of the National Association of Schools of Public Affairs and Administration.

Master of Public Administration Degree

This degree permits the selection, under advisement, of a program of course and seminar work which may be oriented toward a generalist approach or toward an emphasis on organizational behavior and development, public policy, fiscal policy and administration, recreation administration, or urban administration. Since management responsibilities are shared by administrators in a number of professional areas in the public service, the student is encouraged to supplement his study of government and administration with graduate courses in economics, sociology, psychology, business administration, and other related areas.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. The student must also satisfy the following requirements: (1) a 3.0 grade point average in the undergraduate major and a 2.75 overall average; (2) an acceptable score on the Graduate Record Examination Aptitude Test; (3) two letters of reference from individuals who have known the student's academic work and/or employment performance; and (4) satisfactory completion of Public Administration 301, 330, 341, 450 or equivalent courses.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this catalog and be recommended by the faculty. In order to be recommended for advancement, a student must have (1) achieved a grade point average of 4.0 in 12 units of courses on the official program of study, or (2) passed satisfactorily a general written examination in public administration. The examination will be offered each semester for all students who have completed 12 or more units of study toward the master's degree.

Specific Requirements for the Master of Public Administration Degree

In addition to meeting the requirements for classified graduate standing, the student must satisfy the basic requirements for the master's degree as described in Part Three of this catalog. Students must also complete as a part of their programs: (1) at least 27 units of 600- and 700-numbered courses including Public Administration 600, 605 or 606, 620, 630, 650 and 660; (2) a minimum of nine additional units of upper division or graduate courses in public administration or related fields selected under advisement. An internship of 12 units (one semester) beyond the 36 units of course work is required of students who have not had equivalent experience. Public Administration 799A, Thesis, must be included in the program unless Plan B with a comprehensive examination in lieu of the thesis is selected by the student with the approval of a graduate adviser. The internship normally will be served in a governmental agency where the intern will perform duties of an administrative nature. Placements typically will be made in the office of a city manager, a budget office, a personnel office or in the office of the head of a major operating department.

Master of City Planning Degree

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. The student must also satisfy the following requirements: (1) possess a bachelor's or higher degree in sociology, geography, political science, economics, architecture, or landscape architecture, or any fields related to planning (students with degrees other than those listed may be allowed to enter the program under appropriate conditions); (2) have had a minimum of six units in political science, six units in sociology, six units in economics, and three units in geography, or the equivalent of these courses. In the event that deficiencies occur in a student's background and training, the graduate committee will examine the student's past record and recommend a program to make up the deficiencies.

Students seeking admission to the graduate program in urban planning which leads to the Master of City Planning degree should address their inquiries to the director of the program. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms. As there are specific requirements for the program it is not sufficient merely to file the general university admission forms. Students are admitted to the program only in the fall semester of each year and applications must be received no later than April 8.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this catalog and be recommended by faculty. In order to be recommended for advancement, a student must have (1) achieved a grade point average of 3.3 in City Planning 610, 620, 650, 670 and 700, or (2) passed satisfactorily a general written examination in city planning. The examination will be offered at the end of the spring semester for all students who have completed 12 or more units of study toward the master's degree.

Specific Requirements for the Master of City Planning Degree

In addition to meeting the requirements for classified graduate standing for the purpose of pursuing the Master of City Planning degree, the student must complete an approved program of studies consisting of at least 56 units of approved upper division and 600- and 700-numbered courses, to include:

1. City Planning 700, Urban Design and Land Use Planning Studio (6)
 City Planning 610, Seminar in Urban Planning (3)
 City Planning 620, Seminar in Urban Planning Methodologies (3)
 City Planning 630, Seminar in Urban Planning Implementation (3)
 City Planning 640, Seminar in Urban Planning Theory (3)
2. Public Administration 512, The Metropolitan Area (3)
3. Nine units of 600- and 700-numbered courses in planning administration, history, readings and research.

4. City Planning 796, Internship in Urban Planning (3-6)
5. Electives to complete the program will be selected with the assistance of the adviser from appropriate courses in anthropology, art, economics, geography, political science, social work, sociology, and other disciplines deemed appropriate.

At least 30 units must be completed in residence at San Diego State University, and at least 24 units of program courses shall be enrolled in and completed after advancement to candidacy.

Not more than a total of nine units in courses 797 and 798 will be accepted for credit toward the degree.

The student is required to pass a final comprehensive examination.

Master of Science in Criminal Justice Administration Degree

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog.

Students seeking admission to the graduate program in criminal justice administration which leads to the Master of Science in Criminal Justice Administration degree should address their inquiries to the director of the program. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms. As there are specific requirements for the program it is not sufficient merely to file the general university admission forms.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this catalog and be recommended by the faculty. In order to be recommended for advancement, a student must have passed satisfactorily a general written examination in criminal justice administration. An oral examination may also be required by the Graduate Review Committee.

Specific Requirements for the Master of Science Degree in Criminal Justice Administration

In addition to meeting the requirements for classified graduate standing, the student must satisfy the basic requirements for the master's degree as described in Part Three of this catalog. The student must also complete as a part of his program: (1) at least 24 units of 600- and 700-numbered courses including Public Administration 600 and Criminal Justice Administration 601, 602, 604 and 797; (2) a minimum of six additional units of 500-numbered or graduate courses in criminal justice administration or related fields selected under advisement. An internship of three units beyond the 30 units of course work is required of students who have not had equivalent experience. Criminal Justice Administration 799A, Thesis, must be included in the program unless Plan B with a comprehensive examination in lieu of the thesis is selected by the student with the approval of the Coordinator of the Criminal Justice Administration program.

Courses Acceptable on Master's Degree Programs in Public Administration and Urban Studies

UPPER DIVISION COURSES

Criminal Justice Administration Courses

- 502. (117.) Juvenile Deviance and the Administrative Process (3)**
Prerequisite: Sociology 514, or Criminal Justice Administration 301 or 310.
The activity of those in the administrative system who process juvenile deviance.
- 530. (116.) Contemporary Correctional Administration (3) II**
Prerequisite: Sociology 513 or 514.
The problems encountered in administering modern correctional institutions, forestry and road camps, detention homes, and jails.

531. (188.) Probation and Parole (3) I

Prerequisite: Criminal Justice Administration 301 or 530.

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.

Public Administration Courses

510. (154.) Intergovernmental Relations in the United States (3) II

Prerequisite: Public Administration 310 or 312 or 315.

Constitution, political and administrative characteristics of American federalism, including regionalism, interstate compacts, and grants-in-aid.

512. (148.) The Metropolitan Area (3) I, II

Prerequisite: Public Administration 310 or 312.

Problems of government and administration arising from population patterns and physical and social structures of metropolitan areas.

520. (150.) Decision Making in the Urban Community (3) I, II

Prerequisite: Public Administration 310.

Processes of decision making in the management of urban communities.

530. (114.) Negotiation and Bargaining in the Public Service (3)

Prerequisite: Public Administration 301.

Specific issues such as strategies, the effects of threat, the physical setting, use of a third-party observer and theories of advocacy. Emphasis on analyzing simulations of the bargaining process and developing effective negotiation skills.

531. (115.) Governmental Employer-Employee Relations (3) I, II

Prerequisite: Public Administration 330.

Historical development, legal basis and organizational implications of governmental employer-employee relations; emphasis on California local government.

540. (156.) Public Administrative Systems Analysis (3)

Prerequisites: Public Administration 301 and a statistics course.

Systems and organization analysis; work standards and units; procedures analysis; administrative planning.

570. (136.) Administrative Law (3) II

Prerequisite: Public Administration 301.

The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action. (Formerly numbered Public Administration 470.)

580. (149.) Comparative Public Administration (3) II

Prerequisite: Public Administration 301.

Administrative organization and process of selected foreign and American governments. Analysis of the cultural basis of administrative systems.

GRADUATE COURSES IN PUBLIC ADMINISTRATION

600. (201.) Scope of Public Administration (3)

Prerequisite: Six upper division units in public administration.

The development of public administration as an academic discipline; a systematic evaluation of the rise and operations of large-scale public bureaucracies.

605. (205A.) Seminar in Empirical Approaches to Public Administration: Qualitative Analysis (3)

Prerequisite: Public Administration 600.

Examination of basic research approaches, i.e., legal, historical, and small-group, etc.

606. (205B.) Seminar in Empirical Approaches to Public Administration: Quantitative Analysis (3)

Prerequisite: Public Administration 600.

Study of techniques for the gathering of data on public administration with reference to survey research and methodology; examination of various data analysis methods.

620. (250.) Seminar in Management of Urban Governments (3)

Selected problems in the management of urban governments. Maximum credit six units applicable on a master's degree.

- 621. (255.) Seminar in The Metropolitan Area (3)**
Prerequisite: Public Administration 310, 512 or 520.
Selected problems in the government and administration of the world's major metropolitan areas.
- 630. (241.) Seminar in Public Personnel Administration (3)**
Prerequisite: Public Administration 600.
Analysis of selected problems in personnel administration; special emphasis on organizational development and consultation skills as emerging personnel functions. Maximum credit six units applicable on a master's degree.
- 640. (240.) Seminar in Public Administration (3)**
Maximum credit six units applicable on a master's degree.
- 642. (203.) Seminar in Administrative Theory (3)**
Prerequisite: Public Administration 600.
Organization and management; the executive role, decision making; bureaucracy; authority and power; communication and control and organizational system; tactics and strategies in effective management.
- 643. Seminar in Administrative Behavior (3)**
Prerequisite: Public Administration 340.
Intrapersonal, interpersonal and group development knowledge which enhances the administrator's effectiveness. Simulations and structured experiential designs examine behaviors encountered in public bureaucracies.
- 650. (230.) Seminar in Public Financial Management (3)**
Prerequisite: Public Administration 550.
Problems in the administration and budgeting of public revenues.
- 660. (260.) Administration and Public Policy Development (3)**
Prerequisite: Twelve upper division units in social science.
Social, political and administrative problems involved in governmental program development and change.
- 662. (243.) Science, Technology and Public Policy (3)**
Prerequisite: Public Administration 600, 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.
- 670. Seminar in Administrative Law (3)**
Prerequisite: Public Administration 470.
Legal aspects and problems of administration at the federal, state and local levels.
- 680. (249.) Seminar in Comparative Administration (3)**
Prerequisite: Public Administration 301.
Selected problems in administration, organization, and processes of foreign and international governments. Maximum credit six units applicable on a master's degree.
- 791. (245.) Readings in Public Administration (3)**
Prerequisite: Credit or concurrent registration in Public Administration 600.
Selected readings in the literature of public administration.
- 792. (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.
- 796. (296.) Internship in Public Administration (1-6)**
Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences. Admission by consent of instructor.
- 797. (297.) Research in Public Administration (3) Cr/NC**
Prerequisite: Consent of Director, Public Administration and Urban Studies.
Research in one of the areas of public administration. Maximum credit six units applicable on a master's degree.
- 798. (298.) Special Study (1-3) Cr/NC**
Individual study. Maximum credit six units applicable on a master's degree.
Prerequisite: Consent of staff, to be arranged with the Director and instructor.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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

GRADUATE COURSES IN CITY PLANNING**610. (CP266A.) Seminar in Urban Planning (3)**

Prerequisite: Public Administration 320.

Introductory seminar to the Master of City Planning Program, focusing on the planner's perspective of urban problems and goal formation.

620. (CP266B.) Seminar in Urban Planning Methodologies (3)

Prerequisite: City Planning 610.

Procedures and analytical techniques in urban planning.

630. (CP266C.) Seminar in Urban Planning Implementation (3)

Prerequisite: City Planning 620.

Analysis of the content and function of zoning, subdivision regulation, codes, capital budgeting, urban renewal, model cities, and other implementation methods and programs.

635. Seminar in Housing and Housing Policy (3)

Study, definition and analysis of housing needs and problems. Public policies and programs addressed to housing issues. Alternative solutions and the role of the private and public sectors.

640. (CP266D.) Seminar in Urban Planning Theory (3)

Prerequisite: City Planning 630.

Alternative theories of planning and organization of the planning function. Emphasis on conceptual foundations, relationship to governmental structure, decision making, and ideological and ethical orientations.

650. (CP260.) Seminar in Urban Theory (3)

Prerequisite: Public Administration 320.

Study of the various empirically and normatively based theories of the city and urbanization process, with emphasis on communication and transaction and institutional approaches.

660. (CP265.) 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.

665. Seminar in Planning Policy Analysis (3)

Investigation of issues, techniques and examples of policy design and evaluation for urban problems and relationships to the urban planning process.

670. (CP262.) History of Urban Planning (3)

History of urban development and of the field of urban planning.

680. (CP267.) Seminar in Readings in Urban Planning (3)

Selected topics in urban planning. Maximum credit six units applicable on a master's degree.

700. (CP261.) Urban Design and Land Use Planning Studio (6)

Two lectures and eight hours of laboratory.

Prerequisite: City Planning 620.

Laboratory course concerned with graphic expression, principles of land use planning, land development, and urban design. Project integrating principles.

710. Seminar in Theories of Urban Design (3)

Perspectives and methodologies of contemporary urban design and its contribution toward improving the quality of the physical, social and economic environment.

720. Seminar in Environmental Planning and Management (3)

Issues and methods in environmental assessment and enforcement.

730. Seminar in Urban Transportation Planning (3)

Issues, techniques and practices in urban transportation planning with general emphasis on interrelations between transportation and land use planning.

796. (CP296.) Internship in Urban Planning (3-6) Cr/NC

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.

797. (CP297.) Seminar in Research in Urban Planning (3) Cr/NC

Prerequisite: Consent of Director of City Planning Program.

Research in one of the areas of urban planning. Maximum credit six units applicable on a master's degree.

798. (CP298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff.

To be arranged with Director of City Planning and instructor. Individual study. Maximum credit six units.

GRADUATE COURSES IN CRIMINAL JUSTICE ADMINISTRATION**601. (210.) Seminar in the Administration of Criminal Justice (3)**

Prerequisite: Criminal Justice Administration 301 or 310.

Administrative problems of criminal justice systems.

602. Seminar in the Criminal Justice System as a Social Institution (3)

Prerequisite: Criminal Justice Administration 301.

Examination of criminal justice system as both cause and consequence of social change; nature of institutional change with application to criminal justice system components.

604. Seminar in Criminal Justice and Urban Administration (3)

Prerequisite: Criminal Justice Administration 540.

Critical analysis of influences on crime control and the criminal justice process of actions by urban administrators, legislators and the private sector in areas such as housing, education, public health and transportation, and urban development policies.

610. Seminar in Theory, Research and Analysis in Law Enforcement Administration (3)

Prerequisite: Criminal Justice Administration 301.

Exploration and application of potential role of theory, research and analysis in the administration of law enforcement agencies.

630. (216.) Seminar in Theory, Research and Analysis in Correctional Administration (3)

Prerequisite: Criminal Justice Administration 330.

Exploration and application of potential role of theory, research and analysis in the administration of correctional agencies and institutions.

631. (211.) Seminar in Correctional Group Method (3)

Prerequisite: Sociology 513 or 514 or Criminal Justice Administration 321 or 531.

An exploration of current research and use of group methods in the correctional segment of the criminal justice system.

633. Seminar in Judicial Administration (3)

Prerequisite: Criminal Justice Administration 333.

Exploration of leading issues from state and federal perspectives along with the interrelationships between courts and other components of the justice system, especially police and correctional agencies.

660. Seminar in Selected Topics in Criminal Justice Administration (3)

Prerequisite: Criminal Justice Administration 601 or 602.

Analysis of contemporary issues of major import to the administration of criminal justice. Maximum credit six units.

791. Seminar in Readings in Criminal Justice Administration (3)

Prerequisite: Six graduate units in criminal justice administration.

Selected readings in the literature of criminal justice administration.

797. Research in Criminal Justice Administration (3) Cr/NC

Prerequisite: Consent of Coordinator of Criminal Justice Administration.

Research in one of the areas of criminal justice administration. Maximum credit six units applicable on a master's degree.

798. Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units applicable on a master's degree.

799A. Thesis (3) Cr/NC

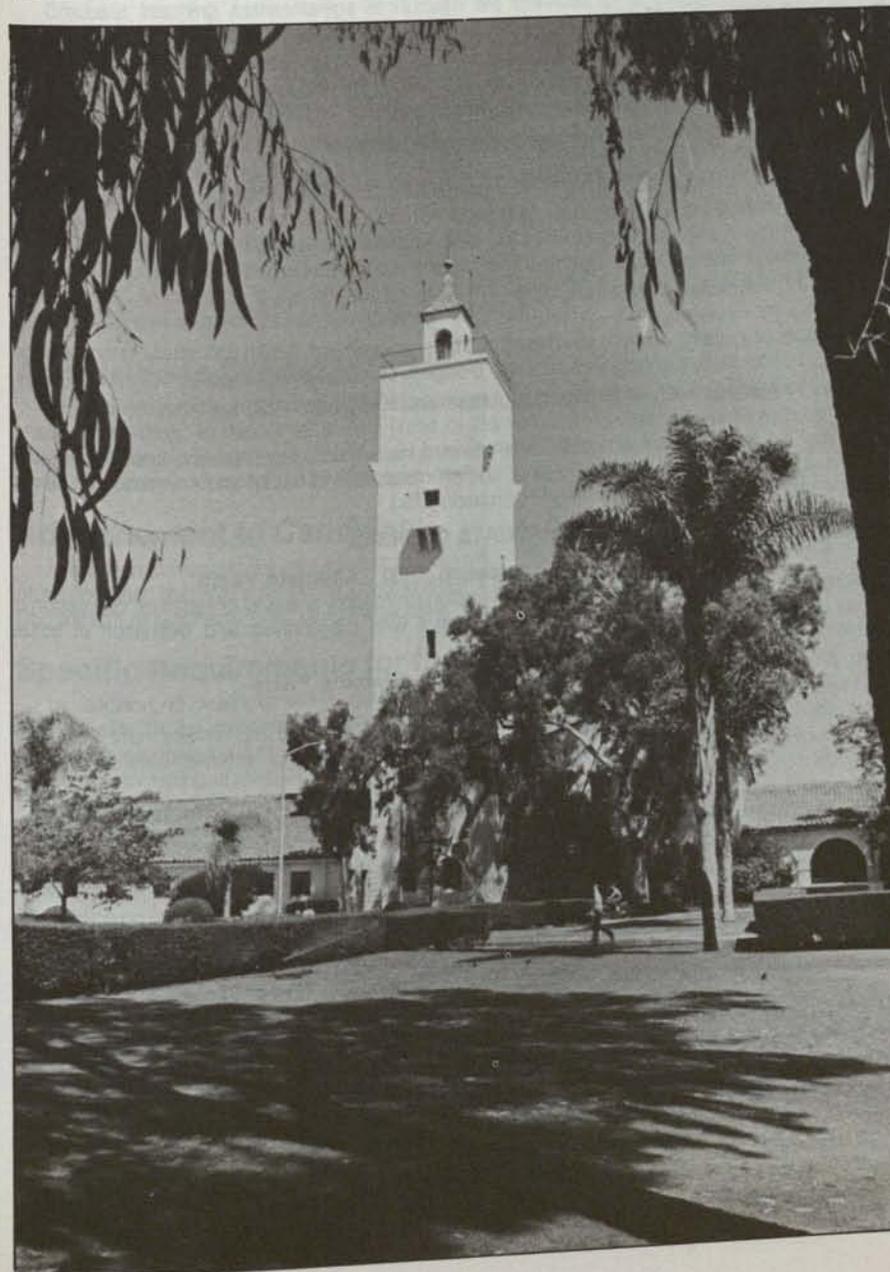
Prerequisites: An officially appointed thesis committee and advancement to candidacy.

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

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Recreation

Faculty

Chairman, Department of Recreation: D. Peterson
 Graduate Adviser: R. Butler
 Professors: Butler, Hanson
 Associate Professors: Duncan, Geba, Peterson
 Assistant Professors: Hutchinson, Lamke, Namba, Ramos

General Information

The Department offers an undergraduate degree and advanced course work in recreation. Graduate courses in recreation may be used toward fulfilling the requirements for master's degrees in other departments with the approval of the student's graduate adviser.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

548. (148.) Aquatic Administration (3)

Management of swimming pools, beaches, lakes and marinas; safety factors; legal requirements; health standards; facilities and programming. (Formerly numbered Recreation 448.)

549. (149.) Camp Administration (3)

Prerequisite: Recreation 110.

Operation of resident, day and travel camps. Staff management, health and safety, finances, food services, maintenance, planning and publicity. (Formerly numbered Recreation 449.)

575. (175.) Management of Recreation Areas and Facilities (3) I, II

Prerequisite: Recreation 465.

Role of the recreation administrator in the planning, acquisition, development, financing, staffing and maintaining of recreational lands, waters, and structures. Use of natural and man-made resources in the environment. (Formerly numbered Recreation 475.)

GRADUATE COURSES

604. (204.) Seminar in Problems in Recreation (3) Alternate Years

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.

705. (205.) Seminar in Park Management (3) Alternate Years

Prerequisite: Recreation 465.

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.

760. (260.) Recreation Administration and Supervision (3) Alternate Years

Prerequisites: Recreation 465 and 484.

Methods, techniques and evaluation systems used by chief administrators, department heads and supervisors in both public and private agencies.

761. (261.) Seminar in Specialized Facilities (3)

Prerequisite: Recreation 475.

Management methods in planning, developing and operating specialized recreation facilities such as golf courses, zoos and aquaria, botanical gardens and arboreta, beaches and marinas, centers for the handicapped, sports stadia, and others. May be repeated once in a different area of specialization.

Russian

Faculty

Chairman, Department of Germanic and Slavic Languages and Literatures: L. A. Kozlik
 Graduate Adviser: Vytas Dukas
 Credential Adviser: Vytas Dukas
 Professors: Dukas, Fetzer, Kozlik

Assistantships

Graduate teaching assistantships in Russian are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Germanic and Slavic Languages and Literatures, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Russian.

The Master of Arts degree provides advanced training for (a) students who plan to terminate their graduate studies at the master's level, and (b) those who plan to proceed to a doctoral degree in Russian or in Slavic linguistics.

There is a full range of graduate courses in Russian literature and in Slavic linguistics, and the student may concentrate in the area of preference. Library resources, both books and periodicals, provide excellent research bases in both areas.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. An undergraduate major in Russian, including 24 upper division units, must have been completed, at least six units of which must have been in a survey course in Russian literature.

Advancement to Candidacy

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this catalog, students may be required to pass a qualifying examination in Russian given by the Department of Germanic and Slavic Languages and Literatures.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of at least 24 units in Russian, including at least 18 units in 600- and 700-numbered courses, including Russian 799A, Thesis. If Plan B is followed, the student must pass a comprehensive examination in lieu of Russian 799A.

Courses Acceptable on Master's Degree Programs in Russian

UPPER DIVISION COURSES

555A-555B. (105A-105B.) The Russian Short Story, Drama and Poetry of the Nineteenth Century (3-3)

Development of the Russian short story, drama and poetry of the nineteenth century.

561A-561B. (110A-110B.) The Russian Novel of the Nineteenth Century (3-3)

Development of the Russian novel of the nineteenth century.

563. (111.) Russian Literature of the Twentieth Century (3)

Poetry, prose and drama of the twentieth century.

570. Slavic Linguistics (3)

Prerequisite: Russian 202 and 212.
 Structural and comparative Slavic linguistics.

580. (130.) Russian Syntax and Stylistics (3)

Prerequisite: Russian 301 and 302.
The structure of contemporary Russian.

581. (131.) Russian Phonetics and Morphology (3)

Prerequisite: Russian 202 and 212.
The sounds and forms of contemporary Russian.

GRADUATE COURSES**600. (290.) Research and Criticism (3)**

Prerequisite: Twelve upper division units in Russian.
Purposes and methods of research in Slavic linguistics and in the literatures; theories and practice of literary criticism.

610. (201.) History of the Russian Language (3)

Prerequisite: Twelve upper division units in Russian.
The historical development of the Russian language.

650A-650B. (202A-202B.) Old Church Slavic (3-3)

Prerequisite: Twelve upper division units in Russian.
Structure of Old Church Slavic with readings and analysis of medieval Slavic texts.

680. (203.) Seminar in Slavic Linguistics (3)

Prerequisite: Twelve upper division units in Russian including Russian 570.
Selected topics in historical and comparative Slavic linguistics.

700A-700B. (204A-204B.) Seminar in the Soviet Novel and Short Story (3-3)

Prerequisite: Twelve upper division units in Russian.
Intensive study of major writers of Soviet prose fiction.

710. (205.) Seminar in Russian Poetry from Pushkin to the Present (3)

Prerequisite: Twelve upper division units in Russian.
The major Russian poets of the nineteenth and twentieth centuries.

750. (253.) Seminar in Nineteenth Century Russian Literature (3)

Prerequisite: Twelve upper division units in Russian.
Major developments in the literature of the time.

760. (255.) Seminar: A Major Author or Movement (3)

Prerequisite: Russian 600.
A major author or movement. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.
Prerequisites: Eighteen upper division units in Russian and consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

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

Social Science**Faculty**

Graduate Advisers:

Anthropology: B. Bartel
Economics: J. Hambleton
Geography: J. Blick
Political Science: H. Janssen
Sociology: C. Hohm

Faculty members in the Departments of Anthropology, Economics, Geography, Political Science and Sociology are listed in the appropriate sections of this catalog.

General Information

The Master of Arts degree in Social Science is offered in the Departments of Anthropology, Economics, Geography, Political Science, and Sociology, in the College of Arts and Letters. (The Master of Arts degrees in Anthropology, Economics, Geography, History, Political Science, and Sociology are described in the appropriate sections of this catalog.)

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, students are expected to have completed at least 30 upper division units in at least three of the social sciences, of which at least 15 upper division units must be in the field in which they plan to concentrate, and at least six units in each of two other social science fields. A course in statistics, either upper or lower division, is required. In addition, the following courses or equivalents are required in the concentrations specified:

Anthropology: Have a minimum of 3.0 grade point average in anthropology courses taken for the baccalaureate degree; Anthropology 497, Investigation and Report; and at least 15 upper division units including courses in archaeology, ethnology, physical anthropology, and social anthropology.

Economics: Economics 320 and 321 or 324 and 325.

Geography: Geography 101 and 102, and 15 units of upper division courses in geography, including three units from each of the following blocks of courses: Systematic-Physical Geography; Theoretical Geography; Regional Geography; Systematic-Cultural Geography; Geographical Techniques and Methods.

Political Science: The required upper division units must be distributed among at least three of the six subfields listed in the General Catalog.

Sociology: Sociology 101, 110 and 401.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy which are described in Part Three of this catalog.

Specific Requirements for the Master of Arts Degree in Social Science

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree as described in Part Three of this catalog, the student must complete the following:

1. A minimum of 30 units from courses listed in this bulletin as acceptable on master's degree programs by the Departments of Anthropology, Economics, Geography, History, Political Science, and Sociology, including at least 15 units of 600- and 700-numbered courses in the social sciences.
2. A concentration in one of the areas of Social Science, except History, as determined by the graduate adviser. A concentration is defined to include at least 15 units in one area on the master's degree program including at least nine units of 600- and 700-numbered courses in the area of concentration.
3. Six units in each of two additional fields of social science, for a total of 12 units, including at least three units of 600- and 700-numbered courses in each.

4. Course 799A. Thesis, is required in concentrations in Anthropology, Political Science, and Sociology. Plan B, requiring a written comprehensive examination in lieu of thesis, is available in the Economics and Geography concentrations. In addition, the following courses are required in the concentrations specified.

Geography: Geography 600, Geographic Research and Techniques of Presentation (3).

Political Science: Political Science 601, Seminar in the Scope and Method of Political Science (3).

Courses Acceptable on Master's Degree Programs in Social Science

Refer to course listings in the sections of this catalog under the Departments of Anthropology, Economics, Geography, History, Political Science, and Sociology. In addition, other courses may be accepted on master's degree programs provided that such courses are approved by the graduate adviser in the field of concentration and by the Academic Requirements Committee of the Social Science Graduate Advisers.

UPPER DIVISION COURSE

580. Topics (3)

Special topics appropriate to an interdisciplinary approach. Reading, observation and evaluation of research material and current scholarship in topics under consideration. Whenever possible taught by team of instructors representing two of six social science disciplines of anthropology, economics, geography, history, political science and sociology. Maximum credit six units.

GRADUATE COURSES

601. Interdisciplinary Methods (3)

Introduction to graduate research methods and presentation of findings in the social sciences.

680. Seminar in the Social Sciences (3)

Intensive study and research on a topic in the social sciences.



Social Work

Faculty

Dean, School of Social Work: Harry Butler

Associate Dean, School of Social Work: G. Haworth

Assistant Dean for Student Affairs: E. F. Anderson

Professors: Griffin, Haworth, Ishikawa, Kahn, Kelley, Kukkonen, Lee, Maxwell, Ontell, Reichert, Stanford, Stumpf

Associate Professors: Anderson, Bailey, Butler, Clary, Guidry, Herman, Pantoja, Pepper, Perry, Riehm, Sardinias, Sprague, Valle

Assistant Professors: Ajemian, Cohen, Raymer, Siman, Sucato

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 Board of Trustees of The California State University and Colleges in May, 1963. The curriculum was developed in close cooperation with the Council on Social Work Education and was fully accredited by its Accreditation Commission in June, 1966.

In addition to the undergraduate and graduate degree programs, the School maintains a Continuing Education Program in Social Work, and the Center on Aging. The School of Social Work is committed to ethnic and cultural diversity in its student body, its faculty, the populations it serves and the unique concerns on which it focuses.

The objectives of the School of Social Work at San Diego State University are to equip students with the essential knowledge, philosophy and basic skills for their responsible practice in the profession of social work. In order to achieve these objectives, the School will assist students to develop a philosophy which recognizes individual human welfare as the purpose and goal of social policy; to acquire attitudes which will permit the development and maintenance of professional relationships and professional standards; to develop the discipline and self-awareness essential to the professional social worker; to attain a level of competence necessary for professional practice; to acquire knowledge in methods of research in social work; and to accept responsibility for the continued development of their competence in the practice of social work.

Concentrations

The preparation of a broadly educated social worker with maximum transferability of skills is an ambitious objective to achieve directly in a two-year graduate curriculum. To aid the student toward this goal the School of Social Work provides the opportunity for grounding the student's learning in the content and interventive modes appropriate to certain populations and the associated service delivery arrangements. Four "concentrations" are offered for this purpose.

At admission each student will be assigned to a concentration based on student preference and placement availability. The first semester is campus based with the students grouped by their concentration choice for study of both the generalized perspectives and special concentration content in the areas of Social Policy and Services, Human Behavior and Social Environment, Practice and Research.

The second and third semesters are essentially field instruction in the concentration accompanied by related practice instruction and completion of the research requirement.

The final semester is designed for completion of the concentration and maximum individualization of student program, based on advisory consultation.

The concentrations are:

A. Social Work with Aging

The concentration is concerned with the process of aging in this society and the problems and needs of the aged as a population at risk. Students are prepared for a wide range of professional roles in policy, planning, program development and direct services. Curriculum content includes implications of a changing demography; characteristics and needs of the elderly; functional and dysfunctional elements in service systems; personal and social significance of life cycle changes; policy and program implications of theories on aging and social, psychological and biological research; interventive skills and strategies. There are opportunities for research and advanced study in selected areas.

B. Social Work in Mental Health

The concentration addresses human and institutional problems related to personal and family dysfunction reflected in acute life crises, and emotional, behavioral and mental disorders. The objective is social work knowledge and skill development in interdisciplinary community mental health planning, practice and research, with emphasis on roles and modalities of intervention that promote mental health, prevent mental disabilities and treat personal and family dysfunctions. Sociocultural responsiveness and accountability are stressed in comprehensive community oriented services. Roles include clinical diagnosis and treatment of outpatient and inpatient clientele, advocacy, community education, planning, program development and administration. These may be emphasized in accordance with students' career objectives.

C. Social Work in Health

The concentration focuses on the universal quest for health and the human and societal problems contributing to or resulting from illness in all phases of health care, various age groups and vulnerable populations. Development of knowledge and skills prepares students for a range of emerging and established social work roles, modalities and strategies, applied collaboratively with other disciplines in health promotion, prevention and treatment of psychosocial components of illness in individuals, families and groups, and in humanizing health care through consumer advocacy, policy and program development, planning and administration. Research and advanced study in selected areas are geared to individual student interests.

D. Social Work with Children, Youth and Families

The concentration focuses on social work practice in a variety of professional roles in developing and delivering services to children, youth and families. Functional and dysfunctional aspects of human development, socialization, education and other institutions are identified and analyzed from a cross-cultural perspective. Appropriate intervention strategies, involvement in planned change and prevention through social policy analysis, research evaluation, program planning and development are offered.

Application for Admission

In seeking tentative admission to the program leading to the Master of Social Work degree, the student should write directly to the School of Social Work Admissions Committee requesting appropriate application materials. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms.

STUDENTS ARE ADMITTED ONLY IN THE FALL SEMESTER OF EACH YEAR AND APPLICATIONS MUST BE RECEIVED BY THE DEAN OR THE SCHOOL OF SOCIAL WORK ADMISSIONS COMMITTEE NOT LATER THAN FEBRUARY 1.

THE APPLICANT MUST ALSO FILE AN APPLICATION FOR ADMISSION TO SAN DIEGO STATE UNIVERSITY WITH THE OFFICE OF ADMISSIONS.

Admission to Graduate Study

In addition to satisfying the requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog, a student seeking admission to the School of Social Work must:

1. Have earned not less than a 2.75 grade point average on the undergraduate work taken for the baccalaureate degree. Desirable undergraduate preparation should include work in the behavioral and sociohumanistic studies and in statistics.
2. Submit a written personal history in the manner prescribed by the School of Social Work.
3. Be considered by references to be capable of graduate study and of developing professional responsibility. Such references may be secured from the student or otherwise obtained by the faculty.
4. Possess personal attributes judged suitable for the profession.
5. Arrange for an interview when so requested by the School.

Master of Social Work Degree

Advancement to Candidacy

Students who have been admitted to the School of Social Work for the fall semester will meet with their advisers during the second half of the spring semester following to discuss the advisability of undertaking the second year of the professional degree program.

To be eligible for advancement to candidacy and for admission to the second year of the program for this degree, the student must, in addition to holding classified graduate standing:

1. Have earned a 3.0 (B) grade point average in both academic courses and field instruction in the first year of his program. Grade point average in academic courses is independent of grade point average in field instruction.
2. Be recommended by the faculty of the School of Social Work.
3. Be approved for advancement by the Graduate Division.
4. Successfully pass a written comprehensive examination on the first year's program under conditions determined by the Dean or the faculty of the School of Social Work.

Specific Requirements for the Master of Social Work Degree

1. Fifty-six units of graduate work within the curriculum of the School of Social Work are required for the degree. Of these units:
 - a. at least 24 must be completed in residence at San Diego State University.
 - b. all transfer credits accepted for the degree must have been earned in a school of social work accredited by, or in the process of being accredited by, the Council on Social Work Education at the time of the student's attendance. Normally, a student who wishes to transfer credit earned in such a school of social work must have completed the requirements of that school for the first full academic year of graduate study.
 - c. of the 56 units required for the MSW degree, nine units, with permission of the Dean of the School of Social Work, may be in courses in other schools and departments on the campus.
2. Credits earned more than five years prior to the date of admission to the School of Social Work at San Diego State University are not acceptable and all work for the degree must be completed within seven years of the date of entering the program. In special circumstances, students may be permitted to validate credits earned outside these time limits by satisfactorily passing comprehensive examinations on the outdated course or courses.
3. Maximum of nine units combined credit in 797A-797B and 798 numbered courses may be included on the student's official program for the MSW degree.
4. All candidates for the degree must pass satisfactorily an oral comprehensive examination in lieu of a thesis under the provisions of Plan B as described elsewhere in this catalog.
5. For regulations concerning grade point averages, final approval for the granting of the degree, award of the degree, and diplomas, see the section titled "Basic Requirements for the Master's Degree," in Part Three of this catalog. In addition, the student must have earned a 3.0 (B) average in academic courses and field instruction in his program. Grade point average in academic courses is independent of grade point average in field instruction.
6. A candidate for the degree must complete a *minimum* of 38 units in a concentration, not including the research requirement Social Work 797A-797B.

Course Requirements

The normal course of study to be followed by a student seeking the MSW degree is as follows:

Sequence	Semester				Total Units
	I	II	III	IV	
Social Work Analysis	SW 755A, B, C, or D (2)	SW 755A, B, C, or D (2)			(4)
Social Welfare Policy & Services	SW 600A, B, C, or D (3)				(3)
Human Behavior and Social Environment	SW 620A, B, C, or D (3)				(3)
Research	SW 690A, B, C, or D (3)	SW 797A* (3)	SW 797B* (3)		(9)
Practice	SW 630A, B, C, or D (3)	SW 730A, B, C, or D (3)	SW 731A, B, C, or D (3)		(9)
Field		SW 650A, B, C, or D (8)	SW 750A, B, C, or D (8)	(12-14)	(16)
Electives				(12-14)	(56-58)
Total Units	(14)	(16)	(14)	(12-14)	

*Student to do research project related to concentration (exceptions by permission of dean).

Program of Study

The above course requirement pattern represents the Official Program of Study for MSW candidates. However, to insure maximum individualized learning within the pattern each student must plan with his/her adviser, based on guidelines available from the School office; an individual program of study. The initial plan will of necessity be tentative and subject to revision. By Advancement to Candidacy the student must file with the Dean a plan for completion of the program including preferred electives. Revisions of the plan require approval by the Dean.

Additional Information

Withdrawals

Students in the School of Social Work are governed by the general regulations of San Diego State University and the Graduate Division. For regulations governing withdrawals from courses, unofficial withdrawals, and probation and disqualification from San Diego State University, see the section titled "Regulations of the Graduation Division," in Part Three of this catalog.

Any graduate student who has been admitted to the curriculum offered in the School of Social Work and whose performance therein is judged to be unsatisfactory with respect to scholastic, personal, or professional standards by the faculty of the School of Social Work and the Graduate Council, may be required to withdraw from all graduate curricula at San Diego State University.

Conditional Admission

Students who do not fully meet all requirements for admission to the School of Social Work may, under special circumstances, be admitted to the School of Social Work in conditionally classified graduate standing. At the end of the first semester's work, the faculty of the School of Social Work shall recommend to the Dean of the Graduate Division and Research that the student:

1. Be disqualified from further participation in the curriculum, or
2. Be continued in conditionally classified standing for a second semester, or
3. Be admitted to full participation in the curriculum with classified graduate standing.

Financial Assistance

Students in the School of Social Work are eligible for financial assistance as described in Part Three of this catalog.

The School of Social Work has some scholarships, fellowships and other financial stipends available to students admitted to the School who need such help to finance their period of study. The requirements for these various stipends vary and can best be dealt with by direct correspondence with the Dean of the School of Social Work.

Students who need assistance in financing their professional education may request such help at the time of application. Such requests will be considered on an individual basis. An applicant must be accepted for admission to the School of Social Work before he will be recommended for an award.

Field Instruction During Periods of University Holidays

Because of the nature of field instruction and the student's responsibility to the agency to which he is assigned, and the clientele it serves, field instruction may continue on the regular work schedule of the agency under certain circumstances.

REQUIRED COURSES IN M.S.W. PROGRAM

All with appropriate concentration section (A-Aging, B-Mental Health, C-Health, D-Children, Youth and Families):

Social Work 600, 620, 630, 650, 690, 730, 731, 750, 755.

Not sectioned by concentration:
Social Work 797A-797B.

Courses Acceptable on Master's Degree Program in Social Work

UPPER DIVISION COURSES

520. Seminar in Contemporary Issues and the American Family (3)

Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing in other programs of study and unclassified standing with the consent of the dean.

Explores and analyzes a myriad of areas within the context of change of the family as a social institution. The family is viewed systemically. Such factors as industrialization, cybernetics and the changing nature of the marital bond are included.

530. Seminar in History of Social Work (3)

Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with consent of the dean.

Development of social welfare institutions as a function of industrial society in America. Historical trends in politics, economics, migration, and life styles are examined in relation to the development of social institutions for responding to human need including the development of the profession of social work.

540. Seminar in Social Effects of the Legal Process (3)

Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with consent of the dean.

Structure and functions of law as it bears upon such groups as defendants in criminal prosecutions, recipients of welfare programs, conservatees in mental health hearings, children in juvenile court dependency proceedings. The legal conflicts social workers may encounter between their ethics and their duties to clients and agency.

550. Seminar in Administration and Decision Making in Human Service (3)

Prerequisite: Upper division, undergraduate social welfare major; or classified graduate standing in the School of Social Work; or classified graduate standing or unclassified standing with consent of the dean.

Relationship between the development of social policy and its actual implementation through program development and delivery of human services. Administrative actions including decision making, communication with regulatory and legislative bodies, and budget development are considered in the ways that policy is shaped and reflected through social programs.

GRADUATE COURSES

Prerequisite for enrollment in all graduate courses: admission to the School of Social Work.

600. Seminar in Social Welfare Policy and Services (3)

Social welfare as a social institution; philosophical, historical and comparative analysis of the welfare functions, issues and problems, plus conceptual analysis of social welfare programs in general and related to areas of concentration. Sectioned by:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

620. Seminar in Human Behavior and Social Environment (3)

Theoretical perspectives on the human condition based on biological, psychological, interpersonal and social assumptions, with emphasis on examining unusual behavior from several perspectives for social work practice. Sectioned by:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

630. Seminar in Social Work Practice (3)

Theories, principles, skills and objectives of social work practice with individuals, families, groups, organizations and communities. Sections related to needs of practice in:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

650. Field Instruction (8)

Prerequisite: Concurrent registration in Social Work 730 in same concentration.

Field instruction in public or voluntary social work setting. Experiences emphasize application of social work objectives, principles and skills in service to individuals, families, groups and communities related to:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

690. Seminar in Social Work Research Methods (3)

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, related to:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

700. (202.) Seminar in Social Welfare Policy and Services (3)

Prerequisite: Social Work 600.

Problems and issues in emerging social welfare programs, including analysis of the structure of social services and of social work as a profession.

710. (291.) Seminar on Selected Topics (3)

Selected topics such as alcoholism, drug abuse, human sexuality, legislative processes and violence against children and implications to social work. Topics announced in class schedule. Maximum credit nine units applicable on a master's degree.

720. (222.) Seminar in Human Behavior and Social Environment (3)

Prerequisite: Social Work 620.

Theories of natural and induced change in human behavior which have utility for social work practice.

730. Seminar in Social Work Practice (3)

Prerequisite: Social Work 630 in same concentration and concurrent registration in Social Work 650 in same concentration.

Social work practice with the objective of personal, family, organization and institution social situation analysis and problem solving. Emphasis on societal and cultural interactional contexts appropriate to:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

731. Seminar in Advanced Social Work Practice (3)

Prerequisite: Social Work 730 in same concentration and concurrent registration in Social Work 750 in same concentration.

Advanced social work practice in the areas of:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

734. (234.) Seminar in Social Work Practice With Organizations and Communities (3)

Prerequisites: Completion of first year courses.

Examines community problems, power and strategies in social planning and development under auspices of interorganizational systems, bureaucracies and informal associations. Applications of concepts and principles of planning social change in situational analysis, community organization, program development and evaluation.

740. (205.) Seminar in Management Knowledge and Technique (3)

Prerequisite: Social Work 600.

Examines problems and roles of administrators in social agencies; administrative and organizational theories; executive functions of planning, budgeting, directing, reporting and staffing; relationships and communications in ordinate, superordinate and subordinate levels.

750. Advanced Field Instruction (8)

Prerequisite: Social Work 650 in same concentration and concurrent registration in Social Work 731 in the same concentration.

Advanced field instruction in public or voluntary social work setting. Continuation and intensification of experiences in the application of social work objectives, principles and skills in service to individuals, families, groups and communities related to:

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

755. Seminar: Social Work Analysis (1-4)

Student orientation to concentration in context of social work profession to include discussion, attendance at general presentations, field observation, and written assignments integrating experiences.

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

- A. Aging
- B. Mental Health
- C. Health
- D. Children, Youth and Families

760. Seminar in Social Work and Racial-Ethnic Groups (3)

Prerequisite: Completion of first year courses.

Nature of institutional racism and its effect on social provision and social policy. Examines overt and covert forms of racism in but not limited to areas such as housing, schools, corrections, organized labor, job training for the poor, and social statistical reporting for implications to social work practice.

761. Seminar on Racial-Ethnic Groups (3)

Prerequisite: Completion of first year courses.

Exploration of social survival techniques of ethnic minority groups, their similarities and differences and implications to development of social service delivery systems and practice.

765. Seminar in Social Work and Aging (3)

Prerequisites: Completion of first year courses.

Exploration of social work principles and techniques related to the impact of the aged population on our society. Focus on becoming sensitive to the implied and actual changes taking place in service delivery systems, living arrangements, etc., which affect social work practice.

766. Seminar on Aging (3)

Prerequisite: Completion of first year courses.

In-depth survey and analysis of selected areas in aging which depict the contemporary trends in the social aspects of aging. Special attention given to developing social policy and the relationship between social work practice modifications in the field of aging.

770. Seminar in Social Work and Health (3)

Prerequisites: Completion of first year courses.

Examination of changing health definitions and health service delivery systems; their effects on consumers and providers of social services and implications for social work practice.

771. Seminar on Health (3)

Prerequisite: Completion of first year courses.

Examination of selected health-related topics; social and emotional aspects of health and disability; continuity of health care; relationship of social work to other health professions.

775. Seminar in Social Work and Mental Health (3)

Prerequisites: Completion of first year courses.

Analysis of selected areas of mental health service that critically examines social work responsibilities and roles in addressing a continuum of mental health needs in a changing society.

776. Seminar on Mental Health (3)

Prerequisite: Completion of first year courses.

Overview of mental health needs, problems and services with emphasis on philosophical, social, legal and therapeutic concerns, particularly as these relate to vulnerable population groups.

780. (291.) Seminar in Social Work and Selected Populations-at-Risk (3)

Social work practice with selected populations-at-risk such as one-parent families, children in institutions, ethnic minority immigrants, Native-Americans in the urban scene, and foreign-born brides of U.S. servicemen. Topics to be announced in class schedule. Maximum credit six units applicable on a master's degree.

781. (291.) Seminar on Selected Populations-at-Risk (3)

Knowledge about and analysis of selected populations-at-risk, social work responsibilities in emerging service demands by diverse and needful, high risk segments of the population in a complex society, and implications for social work practice. Population-at-risk for study to be announced in class schedule. Maximum credit six units applicable on a master's degree.

797A-797B. (297A-297B.) Research (3-3) Cr/NC

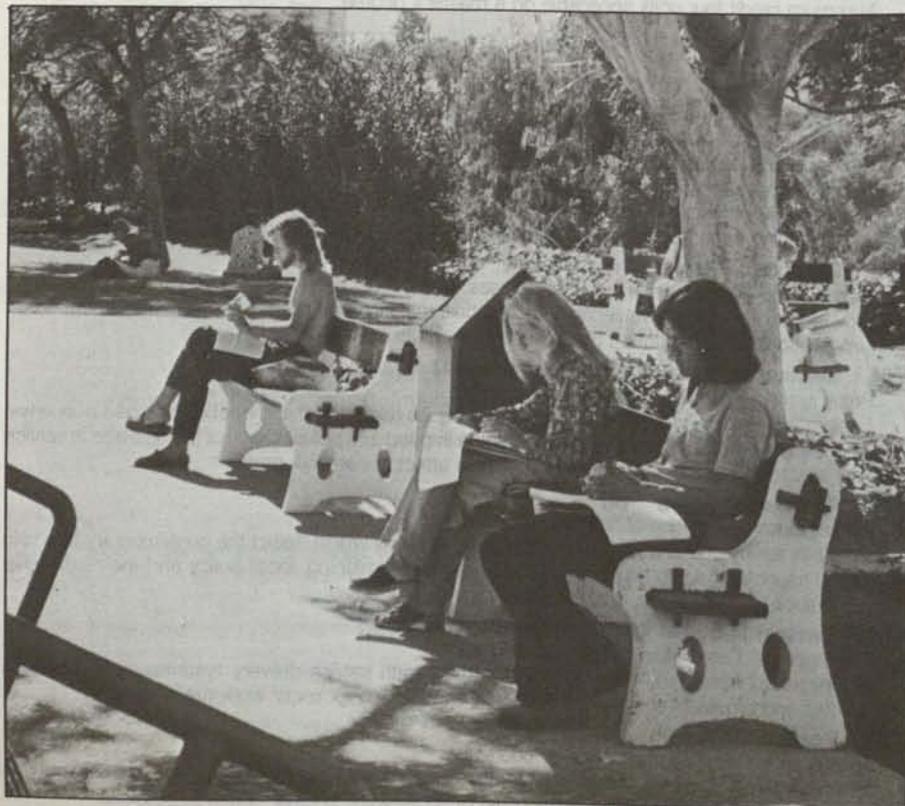
Prerequisite: Social Work 690.

Research in the field of social work and completion of a research project. Individual or group project.

798. (298.) Special Study (1-3) Cr/NC

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

Individual study. Maximum credit six units.



Sociology

Faculty

Chairman, Department of Sociology: C. Dale Johnson

Graduate Adviser: R. E. Emerick

Professors: Daniels, DeLora, J.R., El-Assal, Gillette, Johnson, Mouratides, Somerville, Sorensen, Wendling, Winslow

Associate Professors: Bloomberg, Buck, Chandler, Cottrell, DeLora, J.S., Emerick, Kennedy, Scheck, Schulze, Werner

Assistant Professors: Gay, Halpern, Hohm, Ima, Kirkpatrick, Kolodij, Preston, Stephenson, Weeks

Assistantships

Graduate teaching assistantships and graduate nonteaching assistantships in sociology are available to a limited number of qualified students. Application blanks and further information may be obtained from the chairman of the department.

General Information

The Department of Sociology, in the College of Arts and Letters, offers graduate work leading to the Master of Arts degree in Sociology. For graduate work in connection with the Master of Arts degree in Social Science, refer to the section of this catalog under Social Science. Research facilities provided by the Department of Sociology include a well-equipped Social Research Center for use by the faculty and graduate students.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Sociology must have completed 18 upper division units in sociology, of which 15 of Arts degree in Sociology must include Sociology 401, Classical Sociological Theory, or Sociology 403, Contemporary units must include Sociology 401, Classical Sociological Theory, or Sociology 403, Contemporary Sociological Theory; Sociology 440, Social Psychology; Sociological Approaches; and one course from each of the following fields: social disorganization, social institutions or social organization, and urban sociology-demography.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this catalog. Students must take the four 600-level core courses (Sociology 601, 602, 603, and 604) and must complete each course with a minimum "B" grade by the end of the first year in the master's program. A student may seek exemption from a maximum of two course areas by passing an exam in the respective areas.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree, as described in Part Three of this catalog, students must include in their graduate program a minimum of 30 units from courses in sociology listed below as acceptable on master's degree programs, of which at least 18 units must be in 600- and 700-numbered courses, including 799A, Thesis. A comprehensive examination in theory and methodology and completion of one of the following are required.

In Plan A all students will be expected to include Sociology 799A, Thesis, as three of the 18 units of 600- and 700-numbered courses required.

In Plan B an alternative is offered to the thesis. This alternative consists of (a) Sociology 797, or 798 for 6 units, culminating in two papers or reports acceptable to the student's committee; or (b) one additional comprehensive examination in an area selected by the student with the approval of his committee, plus Sociology 797, or 798 for 3 units, culminating in a paper or report acceptable to the student's committee; or (c) two additional comprehensive examinations in areas selected by the student with the approval of his committee.

Courses Acceptable on Master's Degree Programs in Sociology

UPPER DIVISION COURSES

506. *Modernization of Traditional Societies* (3)

Prerequisite: Sociology 101.

Examines theories of social change relative to industrialization and urbanization of preindustrial societies. Comparative study of institutional and social-psychological consequences of industrialization, utilizing historical and contemporary study of macrosocial change.

508. *Sociology of the Future* (3)

Prerequisite: Sociology 101.

Examines sociological aspects of alternative futures and the role of contemporary behavior in creating those futures. Analysis of projections in selected areas such as family, technology, work and leisure.

510. (110.) *Sociology of Deviance* (3)

Prerequisite: Sociology 101.

Survey of many alleged abnormal phenomena in society as seen in society today in various forms of individual, family, community and world disorganization, such as crime, prostitution, extreme alcoholism, migratory workers, divorce, revolution, war, etc.

511. (111.) *Current Topics in Sociology* (3)

Prerequisite: Sociology 101.

Selected specialized, controversial or currently relevant topics in sociology. Maximum opportunity provided for student initiative in determining course content and procedures. May be repeated with new content. Maximum credit six units.

512. (112.) *Sociology of Conflict* (3)

Prerequisite: Sociology 101.

Conflict as a social process: background, forms and consequences at the interpersonal, intergroup, class and international levels from a sociological frame of reference. Major theories of social conflict.

513. (113.) *Criminology and Penology* (3)

Prerequisite: Sociology 101.

The extent and characteristics of crime; consideration of physical, mental, economic and sociological causes of crime; study of methods of penal discipline, prison labor, parole and probation; programs of prevention.

514. (114.) *Juvenile Delinquency* (3)

Prerequisite: Sociology 101.

The nature and extent of delinquency; the causative factors involved; methods of control and prevention, with special attention to the protective and remedial measures offered by the school, home, juvenile court, correctional institutions and camps, probation and parole, and recreational agencies.

519. *Topics in Comparative Societies* (3)

Prerequisite: Sociology 101.

Analysis of contemporary social structure, the process of modernization and current social problems in selected areas of the world. May be repeated with new content. Maximum credit six units.

520. (120.) *Industrial Sociology* (3)

Prerequisite: Sociology 101.

Group relationships within economic organizations. Problems of leadership, morale and conflict. Some attention to the sociology of occupations and professions.

521. (121.) *Sociology of Occupations and Professions* (3)

Prerequisite: Sociology 101.

Division of labor, status ranking of occupations, authority structures, occupational and professional organization, occupational socialization, problems of identity and role conflict.

523. (123.) *The Sociology of Mental Illness* (3)

Prerequisite: Sociology 101.

The social definition, ecology and control of mental illness across various societies. The implications of social differentiation, stratification and urbanization upon the incidence, prevalence and control of mental illness and the use of these empirical problems for sociological research.

525. (125.) *Minority Group Relations* (3)

Prerequisite: Sociology 101.

Theories of ethnic prejudice. Analysis of racial and ethnic discrimination. Analytical inquiry into sources of friction and causes of conflict between majority and minority groups.

526. (126.) *Medical Sociology* (3)

Prerequisite: Sociology 101.

A sociological analysis of health and medical institutions. Cultural factors in conceptions of disease, health and healing. Social structure of medical facilities and the role of personnel in such institutions. Relation of illness to income, housing and other socioeconomic factors. Not open to students with credit in Health Science and Safety 561.

527. *Sociology of Aging* (3)

Prerequisite: Sociology 101.

Status and roles of men and women in the second half of the life cycle. Ethnic, sex and class variables in aging. Cross-cultural comparisons of occupational, educational, familial, recreational and political opportunities for the aging.

528. *Sociology of Death* (3)

Prerequisite: Sociology 101.

Examines sociological concepts and theories of the process of dying. Comparative study of death and dying with emphasis on social, psychological and social organization approaches. Consideration of contemporary social-ethical issues surrounding dying in our society.

533. *Sex Roles in Contemporary Societies* (3)

Prerequisite: Sociology 101.

Male-female relationships in occupational, educational and familial settings viewed historically and cross-culturally. Changing concepts of femininity and masculinity. Images of men and women in literature, in the mass media, and in laws and judicial decisions.

534. *Sexuality in Modern Society* (3)

Prerequisite: Sociology 101.

Analysis of landmark sex research and pornography in the United States and in selected other societies. Changing norms in premarital, marital and extramarital attitudes and behaviors. Implications for the individual, family and society.

535. (135.) *The American Family and Its Alternatives* (3)

Prerequisite: Sociology 101.

Analysis of contemporary dating, engagement, marriage, family, and other intimate relationships in the United States as they are affected by changes in the culture.

536. (136.) *The Family in Cross-Cultural Perspective* (3)

Prerequisite: Sociology 101. Recommended: Sociology 535.

Comparative study of selected family systems in the past and present. Family and parafamily forms in intentional communities of the 19th century compared with contemporary communal experiments. Ethnic and class differences in family organization. (Not open to students with credit in Family Studies and Consumer Sciences 536.)

537. (137.) *Political Sociology* (3)

Prerequisite: Sociology 422.

Social organization of political processes. Power and authority, social class, primary groups, collective behavior, social change and other sociological factors considered in their relationships to political processes.

538. (138.) *Sociology of Religion* (3)

Prerequisite: Sociology 101. Recommended: Sociology 401 and 546.

The role of religion in society as cult and institution, including primitive religion, modern sects and churches, ritual, secularization and religious movements.

539. (139.) *Sociology of Education* (3)

Prerequisite: Sociology 101.

Social organization of education, teaching as a profession. Class, ethnic and other social factors affecting the educational process. Educational institutions and the community.

541. (141.) *Advanced Social Psychology: Sociological Approaches* (3)

Prerequisite: Sociology 440 or Psychology 340 Recommended for majors and minors only.

Sociological theories and approaches to the study of group behavior and membership, socialization of the individual, and processes of social interaction.

- 545. (145.) Sociology of Mass Communication (3)**
Prerequisite: Sociology 101. Recommended: Sociology 440 and 546.
Sociological analysis of the processes and effects of mass communications in different social systems, their functions and dysfunctions and their relationships to other social institutions.
- 546. (146.) Collective Behavior (3)**
Prerequisite: Sociology 440.
The basic processes of social behavior in masses and groups, including crowd behavior, fads, fashions, crazes, panics, rumors; sects and cults; heroes and scapegoats; social movements; effects of mass communication.
- 547. (147.) Sociology of Social Movements (3)**
Prerequisite: Sociology 101. Recommended: Sociology 422 and 545.
Revolutionary and reform movements in relationship to the larger society. Conditions leading to development of social movements, emergence of leadership, ideologies, strategies, recruitment of members and social consequences, case studies in depth.
- 548. (148.) Small Groups (3)**
Prerequisite: Sociology 440.
Processes, morale and organization of small groups; their role in society and institutions such as industry, military, recreation and education; recent studies and methods of research.
- 550. (150.) Population Problems (3)**
Prerequisite: Sociology 101.
Study of population variables including births, deaths and migration. Comparative analysis of theories, methods and techniques used in the study of population and ecological problems, processes and relationships.
- 557. (157.) Urban Sociology (3)**
Prerequisite: Sociology 101.
The structure and function of the modern city; types of neighborhoods; forms of recreation; social forces in a metropolitan area; types of urban personalities and groups; rural-urban conflicts of culture. Practical field studies required.
- 563. The Logic of Sociological Inquiry (3)**
Prerequisite: Sociology 201.
Systematic overview and analysis of explanation in the social sciences and history with emphasis on sociology. Problems of applying the natural scientific method to the social sciences, interpretation of meaning and objectivity.
- 597. (197.) Investigation and Report (3) I, II**
Prerequisite: Fifteen units in sociology and consent of instructor.
Analysis of special topics in sociology. Maximum credit six units.

GRADUATE COURSES

- 601. Advanced Social Theory: Core Course (3)**
Prerequisites: Conditional graduate standing, Sociology 401.
Systematic treatment of the original European and American classic sociological writing and an overview of the major developments in contemporary social theory.
- 602. Advanced Research Methods: Core Course (3)**
Prerequisites: Conditional graduate standing, Sociology 464.
Problems and techniques in social research with stress on philosophy of science, theory building, research design, measurement, and data analysis including fundamental critiques and alternatives.
- 603. Advanced Social Psychology (Sociological Approaches): Core Course (3)**
Prerequisites: Conditional graduate standing, Sociology 440.
Investigation and analysis of original works in classical social psychological theory focusing on implications for research on topics such as socialization, motivation, perception, role, self, interaction and symbolic processes.
- 604. Social Organization: Core Course (3)**
Prerequisites: Conditional graduate standing, Sociology 422.
Concepts, theories and findings concerning structure and change in society, institutions, formal organizations, the community and small groups. Special attention given key concepts of culture, stratification, division of labor, power, bureaucracy, role relationships and interaction.
- 700. (200.) Seminar in Social Theory (3)**
Prerequisites: Sociology 401 and 464.
Classics of sociology, American social theory, theory construction, application of theory to research, theoretical models, sociology of knowledge, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.
- 705. (205.) Directed Readings in Social Theory (3)**
Prerequisites: Sociology 401 and 464.
Selected readings providing comprehensive coverage of the field of social theory.
- 710. (210.) Seminar in Social Disorganization (3)**
Prerequisites: Sociology 464 and 510.
Theories of social disorganization, anomie and alienation, deviance, crime, delinquency, personal pathology, institutional malfunction, social conflict, disaster, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.
- 715. (215.) Directed Readings in Social Disorganization (3)**
Prerequisites: Sociology 464 and 510.
Selected readings providing comprehensive coverage of the field of social disorganization.
- 720. (220.) Seminar in Social Organization (3)**
Prerequisites: Sociology 422 and 464.
Social groups, formal organization, organizational change, authority and leadership, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.
- 725. (225.) Directed Readings in Social Organization (3)**
Prerequisites: Sociology 422 and 464.
Selected readings providing comprehensive coverage of the field of social organization.
- 730. (230.) Seminar in Social Institutions (3)**
Prerequisites: Sociology 422 and 464.
The family and kinship, political organization, economic organization, religion, education, industry, occupations and professions; social stratification, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.
- 735. (235.) Directed Readings in Social Institutions (3)**
Prerequisites: Sociology 422 and 464.
Selected readings providing comprehensive coverage of the field of social institutions.
- 740. (240.) Seminar in Social Psychology: Sociological Approaches (3)**
Prerequisites: Sociology 440 and 464.
Socialization, role theory, motivation, perception, self, social context of personality, attitude theory, interaction, language and symbolic process, social types, collective behavior, small groups, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.
- 745. (245.) Directed Readings in Social Psychology: Sociological Approaches (3)**
Prerequisites: Sociology 440 and 464.
Selected readings providing comprehensive coverage of the field of social psychology.
- 750. (250.) Seminar in the Community (3)**
Prerequisites: Sociology 464 and 557.
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.
- 755. (255.) Directed Readings in the Community (3)**
Prerequisites: Sociology 464 and 557.
Selected readings providing comprehensive coverage of the sociological study of human communities.
- 760. (260.) Seminar in Research Methods (3)**
Prerequisites: Sociology 401 and 464.
Analysis of methods used in current sociological research, including evaluation of reported findings. Discussion of research designs appropriate to particular types of projects. Evaluation of research in progress by members of the seminar. May be repeated with new content. Maximum credit six units applicable on a master's degree.
- 765. (265.) Directed Readings in Research Methods (3)**
Prerequisite: Sociology 464.
Selected readings providing comprehensive coverage of sociological research methods.

770. (270.) Seminar in Population and Demography (3)

Prerequisites: Sociology 464 and 550.

Demographic theories, fertility, mortality, migration, construction and application of demographic indices, demographic prediction, world population trends, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

797. (297.) Research (3) Cr/NC

Prerequisite: Sociology 464.

Independent investigation of special topics. Maximum credit six units applicable on a master's degree.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff, to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

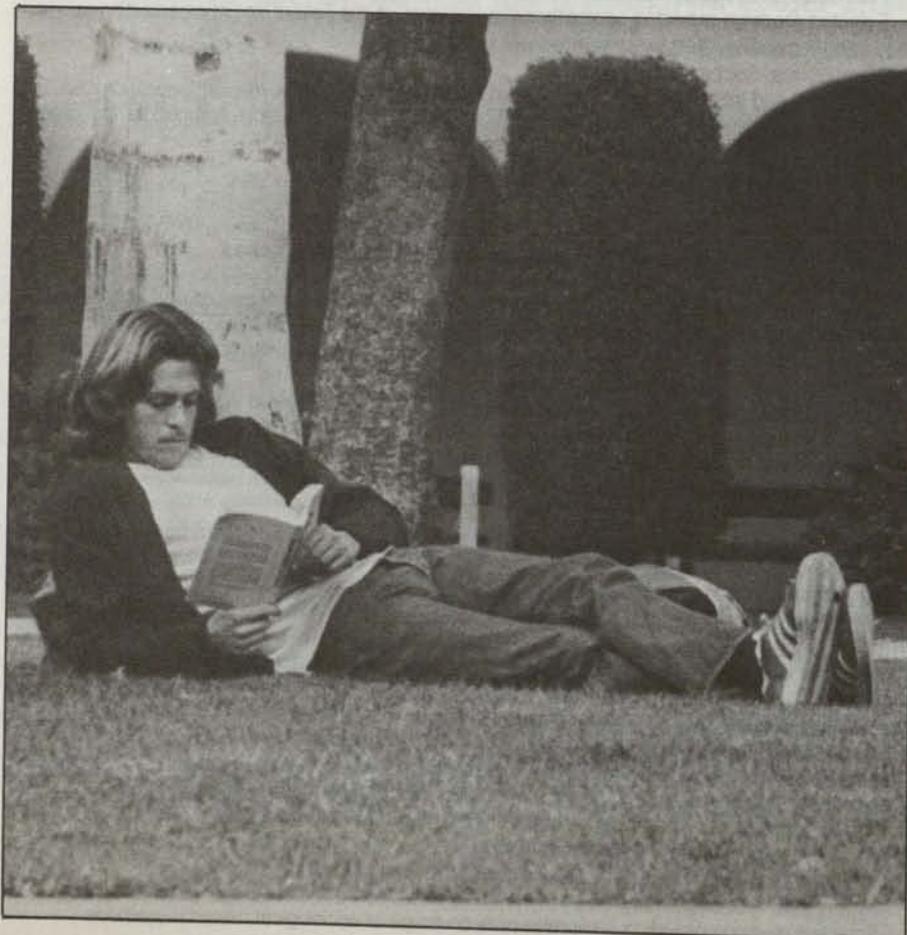
799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Spanish

Faculty

Chairman, Department of Spanish and Portuguese Languages and Literatures: G. V. Segade
 Coordinator, Graduate Program: E. M. Barrera
 Graduate Adviser: Barrera
 Credential Adviser: R. R. Young
 Professors: Barrera, Case, Head, Lemus, Segade, Walsh
 Associate Professors: Christensen, Jimenez-Vera, O'Brien, Santalo, Talamantes, Weeter
 Assistant Professor: Young

Assistantships

Graduate Teaching Assistantships in Spanish are available to a limited number of qualified students. Application blanks and additional information may be secured from the chairman of the department.

General Information

The Department of Spanish and Portuguese Languages and Literatures, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Spanish.

The staff in charge of the graduate program in Spanish is composed of professors whose native tongue is Spanish, or who have studied and traveled extensively in Spain or in Spanish America, enabling them to represent authoritatively the Spanish language and culture. Library facilities include a rich resources in Spanish literature and linguistics, including books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog. An undergraduate major in Spanish, including 24 upper division units, must have been completed, at least six units of which must have been in a survey course in Spanish literature.

Advancement to Candidacy

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this catalog, students may be required to pass a qualifying examination in Spanish given by the Department of Spanish and Portuguese Languages and Literatures.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program of at least 30 units which includes a major consisting of at least 24 units in Spanish, of which at least 18 units must be in 600- and 700-numbered courses, including Spanish 601 and Spanish 799A in the Plan A program.

Students who plan to earn a teaching credential as well as the master's degree in Spanish will normally follow Plan B, which includes the passing of a comprehensive examination in lieu of the thesis.

Courses Acceptable on Master's Degree Programs in Spanish

UPPER DIVISION COURSES IN SPANISH

504A-504B. (104A-104B.) Spanish-American Literature (3-3)

Prerequisites: Spanish 202 and 212.
 Reading from representative Spanish-American authors during the colonial, revolutionary and modern periods. Lectures, class reading, collateral reading and reports.

510A-510B. (105A-105B.) Modern Spanish Drama (3-3)

Prerequisites: Spanish 202 and 212.

The development of the drama of Spain from the beginning of the nineteenth century to the present time.

515A-515B. (106A-106B.) Mexican Literature (3-3)

Prerequisites: Spanish 202 and 212.

Aspects of Mexican culture. Semester I: A rapid survey of Mexican literature from the colonial period to the twentieth century. Semester II: The twentieth century, with emphasis on the contemporary Mexican novel and theater.

520. (107.) Caribbean Area Countries Literature (3)

Prerequisites: Spanish 202 and 212.

Literature of Caribbean Islands, Central America, Colombia and Venezuela, from colonial period to present. Special emphasis on contemporary era.

522. (108.) Andean Countries Literature (3)

Prerequisites: Spanish 202 and 212.

Literature of Ecuador, Peru, Bolivia and Chile from the period immediately preceding the Spanish conquest to today.

524. (109.) River Plate Literature (3)

Prerequisites: Spanish 202 and 212.

Literature of Argentina, Paraguay and Uruguay from colonial period to present.

530. (110.) Nineteenth Century Spanish Novel and Short Story (3)

Prerequisites: Spanish 202 and 212.

The development of the novel and short story in Spain in the nineteenth century.

532. (111.) Twentieth Century Spanish Novel and Short Story (3)

Prerequisites: Spanish 202 and 212.

The development of the novel and short story in Spain to 1936, with emphasis on the novel of the generation of 1898.

533. (112.) Contemporary Spanish Novel (3)

Prerequisites: Spanish 202 and 212.

The development of the novel and short story in Spain since 1936.

548. (149.) Spanish Linguistics (3)

Prerequisites: Spanish 202 and 212.

Structural, historical and applied Spanish linguistics.

549. (150.) Phonetics and Phonemics (3) II

Prerequisites: Spanish 202 and 212 with a grade of C or better.

The sounds of Spanish and of the Spanish phonemic systems, with special attention to the problems involved in the teaching of Spanish pronunciation to English-speaking students.

550. Golden Age Literature I (3)

Prerequisites: Spanish 202 and 212.

Major writers and works, concentrating on prose and lyric poetry.

560. Golden Age Literature II (3)

Prerequisites: Spanish 202 and 212.

Major writers and works, concentrating on drama.

570. (170.) Spanish-American Poetry (3)

Prerequisites: Spanish 202 and 212.

Spanish-American poetry of the 19th and 20th centuries.

571. (171.) Spanish-American Short Story (3)

Prerequisites: Spanish 202 and 212.

Principal Spanish-American short story writers.

572. (172.) Spanish-American Theatre (3)

Prerequisites: Spanish 202 and 212.

Principal Spanish-American dramatists and movements.

580. (180.) Modern Spanish Poetry (3)

Prerequisites: Spanish 202 and 212.

Spanish poetry of the 19th and 20th centuries.

Portuguese Courses**534. (134.) Portuguese Literature (3)**

A study of important movements, authors and works in the literature of Portugal from its beginnings to the present.

535. (135.) Brazilian Literature (3)

A study of the important movements, authors and works of the literature of Brazil from the colonial period to modern times.

Related Fields: Related courses in the fields of anthropology, geography, history, political science, comparative literature, and others, may be selected with the approval of the graduate adviser.

GRADUATE COURSES IN SPANISH

All graduate courses in the Department of Spanish and Portuguese Languages and Literatures have a prerequisite of 12 upper division units in Spanish, or consent of instructor.

601. (290.) Research and Criticism (3)

Purposes and methods of research in the fields of the language and literature, including bibliography, literary terms and textual criticism.

610. (201.) History of the Spanish Language (3)

Prerequisite: Credit or concurrent enrollment in Spanish 548 or 549.

The development of the Spanish language in Spain and Spanish America, with particular attention to the phonology, morphology and syntax of medieval Spanish.

620. (202.) Cervantes (3)

The principal prose works of Cervantes: The *Novelas ejemplares* and *Don Quixote*.

630. (203.) Lope de Vega and Calderon (3)

The works of Lope de Vega and Calderon.

640. (204.) The Spanish-American Novel (3)

The Spanish-American novel to 1935.

650. (205.) The Gaucho Epic (3)

The *Poesía gauchesca*, with particular emphasis on *Martin Fierro*, *Fausto*, and *Santos Vega*.

660. (206.) Modernism (3)

The *Modernista* movement in Spanish America, with special attention to representative poets.

670. (207.) Medieval Spanish Literature (3)

Prerequisite: Spanish 610.

The literature of Spain from the earliest extant works to the *Celestina*.

680. (208.) The Modern Spanish Essay (3)

The thinkers, essayists and philosophers of Spain from the generation of 1898 to the present.

690. (209.) The Spanish-American Essay (3)

Principal Spanish-American essayists of the 19th and 20th centuries.

695. (210.) Contemporary Spanish-American Prose Fiction (3)

The principal writers of prose fiction in Spanish America from the mid-thirties to today.

720. (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.

730. (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.

740. (240.) Seminar in 20th Century Spanish Literature (3)

A representative author, a genre or movement of the 20th century in Spain. Maximum credit six units applicable on a master's degree.

750. (250.) Seminar in Spanish-American Literature (3)

A genre or movement of Spanish America. Maximum credit six units applicable on a master's degree.

755. (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.

770. (270.) Applied Spanish Linguistics for Teachers (3)

Prerequisite: Spanish 548 or 549.

The application of linguistic theory to the teaching of Spanish at the secondary and college levels.

798. (298.) Special Study (1-3) Cr/NC

Prerequisite: Consent of staff, to be arranged with department chairman and instructor. Individual study. Maximum credit six units.

799A. (299.) Thesis (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

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



Speech Communication

Faculty

Chairman, Department of Speech Communication: F. C. Sanders
 Coordinator, Graduate Program: S. W. King
 Graduate Advisers: S. W. King, F. C. Sanders
 Credential Adviser: P. G. Gaske
 Professors: Adams, Benjamin, Mills, Samovar
 Associate Professors: King, Sanders
 Assistant Professor: Weitzel

Assistantships

Graduate teaching assistantships in speech communication are available to a limited number of qualified students. Application blanks and further information may be obtained from the department chairman.

General Information

The Department of Speech Communication, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Speech Communication. The department offers advanced study in the areas of public address and communication. An emphasis in oral interpretation within the speech communication degree program is also available.

Admission to Graduate Study

Students must meet the general requirements for admission to the University with classified graduate standing, as described in Part Three of this catalog.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this catalog. In addition, students seeking the Master of Arts degree in Speech Communication are required to have completed Speech Communication 700.

Specific Requirements for the Master of Arts Degree

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this catalog, the student must complete a graduate program which includes at least 30 units acceptable on master's degree programs in speech, of which at least 18 units must be in 600- and 700-numbered courses. Speech Communication 700, 735, 750, 751 or 790, and 799A, Thesis, are required courses for those electing Plan A. If Plan B is followed six additional units in 600- and 700-numbered courses in speech communication must be taken, and a comprehensive examination must be passed in lieu of the thesis, resulting in a 33-unit degree program.

Emphasis in Oral Interpretation

The requirements for students electing an emphasis in oral interpretation are as follows:

1. A minimum of 30 units, including at least 21 units of 600- and 700-numbered courses.
2. Speech Communication 700 (3), 708 (6), 735 (3), 750 (3), and 798 (3).
3. Nine units to be taken from the courses listed below:

English

- 507. The History of Literary Criticism (3)
- 508. Modern Criticism (3)
- 525. Studies in American Fiction (3)
- 526. Studies in American Poetry (3)
- 527. Studies in American Drama (3)
- 537. Milton (3)
- 540A or 540B. English Fiction (3)
- 542A or 542B. Nineteenth Century British Poetry (3)

543. Nineteenth Century British Prose (3)
 544A-544B. Modern British Fiction (3-3)
 545. Modern British Poetry (3)
 546. Modern British Drama (3)
 570. Techniques of Poetry (3)
 572. Techniques of Drama (3)
 579. Topics in Techniques of Writing (3)
 630. Poetry (3)
 700. Seminar: A Major Author (3)
 710. Seminar: A Cultural Period (3)
 720. Seminar: A Literary Problem (3)

Drama

647. Seminar in History of Theatre and Drama (3)
 648. Seminar in Producing the European Play (3)
 4. Speech Communication 799A, Thesis (3)

Courses Acceptable on Master's Degree Programs in Speech Communication

UPPER DIVISION COURSES

- 508. (108.) Advanced Interpretation (3) I, II**
 Three lecture-demonstrations per week and 32 hours of laboratory per semester.
 Prerequisite: Speech Communication 111A.
 Analysis of techniques of literary composition as guides to oral interpretation. Achievements of the creative artists as they affect the interpretive artist.
- 530. (130.) Semantics (3) I, II**
 Recognition of various types of linguistic meaning; logical distinctions in discourse; distinction between real and verbal disagreement; recognition and correction of semantic fallacies.
- 535. (135.) Theories of Human Communication (3) I, II**
 Prerequisite: Six units of speech communication.
 Special emphasis on various communication theories and models; the relationship of mental variables such as perception, roles and status, behavior change, language and motivation to the entire communication process.
- 537. (137.) Empirical Study in Speech Communication (3) I, II**
 Prerequisite: Six units of speech communication. Recommended: Speech Communication 135.
 Philosophy of social science and application to current research in speech communication. Theories and constructs related to communication: analysis of current research literature.
- 540. (140.) Freedom and Responsibilities of Speech (3) I, II**
 Prerequisite: Speech Communication 160.
 In-depth study of the major legal, ethical and political issues concerning communication and free speech in a democratic society.
- 575. (175.) Intercultural Communication (3) I, II**
 Study of communication with emphasis on the influence of cultural background, perception, social organization, language and nonverbal messages in the cross-cultural communication experience.
- 589. (189.) Ethics of Speech Communication (3)**
 Prerequisite: Six upper division units in philosophy or speech communication.
 Classical and modern ethical concepts applied to oral persuasion.
- 592. (192B.) Persuasion (3) I, II**
 Prerequisite: Speech Communication 103 or 104.
 Persuasion with emphasis on psychological principles. Research project on a significant problem.

GRADUATE COURSES

- 700. (200.) Seminar in Research and Bibliography (3)**
 Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to speech communication. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.
- 708. (208.) Seminar in Oral Interpretation (3)**
 Prerequisite: Speech Communication 508.
 Aesthetic discipline applied to oral interpretation of various forms of literature. Analysis of thought and emotional content, and aesthetic form. Investigation of advanced problems of delivery. May be repeated with new content. Maximum credit six units.
- 730. (230.) Seminar in the Analysis of Language (3)**
 Prerequisite: Speech Communication 530.
 Special problems in language theory which may be integrated into the larger bodies of rhetorical and communication theory.
- 735. (235.) Seminar in Communication Theory (3)**
 Prerequisite: Speech Communication 535.
 Theories of communication; communication models, codes, perception and effects.
- 750. (250.) Seminar in Rhetorical Theory (3)**
 Leading figures in rhetorical theory from Plato to contemporary theorists. Special attention given to the application of theory to public address.
- 751. (251.) Seminar in Rhetorical Criticism (3)**
 Major systems of speech criticism. Special attention to measuring the effectiveness of a given piece of discourse in terms of actuality and potentiality.
- 775. Seminar in Intercultural Communication (3) I, II**
 Prerequisite: Speech Communication 575.
 Analysis of cultural influences on human communication acts. Emphasis on cultural values, perception, social organizations, language and nonverbal codes.
- 780. (280.) Seminar in Public Address (3)**
 Case studies of rhetorical events which illustrate rhetorical theory. Maximum credit six units applicable on a master's degree.
- 790. (290.) Seminar in Experimental Procedures in Speech Communication (3)**
 Prerequisites: Credit or concurrent registration in Speech Communication 592 and 700.
 Examination and evaluation of appropriate experimental procedures and traditional methods; special problems in research design.
- 791. (291.) Seminar in Group Discussion Theory (3)**
 Prerequisite: Speech Communication 391.
 A study of descriptive and experimental literature on group discussion covering such topics as interaction, leadership, and means of evaluation.
- 792. (292.) Seminar in Persuasion (3) I, II**
 Prerequisite: Speech Communication 592.
 Contemporary theories and models of persuasion, methods of assessing persuasive effect, and analysis of research literature.
- 798. (298.) Special Study (1-3) Cr/NC**
 Individual study. Maximum credit six units.
 Prerequisite: Consent of staff, to be arranged with department chairman and instructor.
- 799A. (299.) Thesis or Project (3) Cr/NC**
 Prerequisites: An officially appointed thesis committee and advancement to candidacy.
 Preparation of a project or thesis for the master's degree.
- 799B. Thesis or Project Extension (0) Cr/NC**
 Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
 Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

Telecommunications and Film

Faculty

Chairman, Department of Telecommunications and Film: K. C. Jameson
 Graduate Adviser: D. G. Wylie
 Professors: Jameson, Jones, Lee, Madsen, Steen, Wylie
 Associate Professors: Anderson, Heighton, Johnson, Martin, Meador
 Assistant Professors: McKee, Misiorowski

Assistantships

Graduate assistantships in telecommunications and film are available to a limited number of qualified students. Application blanks and further information may be obtained from the department chairman.

General Information

The Department of Telecommunications and Film, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Radio and Television. This degree permits advanced study in the areas of telecommunications and film management, process and effects, and public telecommunications. In addition, the department participates in the Master of Science degree in Mass Communications which is designed to offer systematic training for students: (1) who plan to continue their study in doctoral or other advanced programs in mass communications or in disciplines emphasizing areas of mass communications; (2) who plan a career in secondary or junior college teaching; or (3) who seek a broad background for careers in the mass media, business, or government service (see Mass Communications in this catalog for specific requirements for this degree).

Both the Master of Arts in Radio and Television and the Master of Science in Mass Communications (with an emphasis in Telecommunications and Film) assume a scholarly interest in theoretical and applied problems relating to media. Postbaccalaureate students interested in learning basic techniques of television and film production should consider pursuing a second bachelor's degree in media production or completing basic production courses elsewhere before applying for graduate study at San Diego State University. Students with an undergraduate major or minor in media may enroll in advanced production courses approved for graduate credit.

Telecommunications and film facilities now in use at San Diego State University include a television production center with two studios, a radio complex with five control rooms, and a film production center. The Department of Telecommunications and Film participates in the operation of KPBS-TV/FM, operates a television production center for the origination and syndication of public television programs, and maintains the San Diego State University closed-circuit instructional television production and origination facility. The entire operation provides telecommunications and film experience for all students in the curriculum and a laboratory for investigating media problems for graduate students.

Admission to Graduate Study

Applications for admission to the graduate programs in telecommunications and film will be referred to the graduate adviser of the department who will send to the applicant detailed instructions concerning applications procedures. Applications must be submitted prior to February 1 for the fall semester, and October 1 for the spring semester, in order to be considered by the Graduate Admissions Committee of the Department of Telecommunications and Film.

In addition to meeting the general requirements for admission to the University with classified graduate standing, as outlined in Part Three of this catalog, a student applying for admission to a graduate program in the Department of Telecommunications and Film must meet the following requirements:

1. Undergraduate major in telecommunications and film (or its equivalent) if advanced study of media development is proposed. Note: Graduate students will not be permitted to enroll in entry-level (lower division) production courses at San Diego State University. Students with other baccalaureate degrees may pursue a nonproduction course of study leading to the M.A. or M.S. degree, but will be expected to complete one or more media survey courses (such as Telecommunications and Film 315) which will not apply toward the units required for the degree.
2. Undergraduate grade point average not less than 2.75 overall, and 3.0 in the last 60 units attempted.

3. Total score (verbal and quantitative) on the GRE Aptitude Test of 950.
 To be considered for admission to a graduate program in the department, a student must submit the following in addition to materials required by the University:

1. Three letters of recommendation.
2. A personal statement in which the student discusses his or her background, interests and abilities as they apply to the desire for an advanced degree, and in particular, a graduate degree in telecommunications and film at San Diego State University.

Students accepted for graduate study in the Department of Telecommunications and Film will first be given Conditional Graduate Standing (classified). Full classified standing will be given only after the student has completed Telecommunications and Film 600 with a grade of B or better, and has filed an official graduate program. In addition to meeting the requirements for classified standing described in Part Three of this bulletin, all students must complete Telecommunications and Film 600 in their first semester in residence.

Specific Requirements for the Master of Arts Degree

Further specific information on the master of science degree is listed under the heading "Mass Communications." Candidates for the Master of Arts in Radio and Television must also include the following in their programs:

1. Telecommunications and Film 799A (Thesis or Project).
2. At least 21 units from the courses listed below as acceptable for graduate credit. Up to nine units from other departments can be included providing the courses are acceptable for graduate credit in the department in which they are taken, and they are approved by the Graduate Adviser of the Department of Telecommunications and Film.
3. At least 18 units in the program must be graduate-level courses.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this catalog.

Courses Acceptable on Advanced Degree Programs in Telecommunications and Film

UPPER DIVISION COURSES

500. (101.) Broadcast Management (3) I, II

Prerequisite: Telecommunications and Film 100.
 Administration and organization of radio and television, including radio and television as advertising media, broadcasting research, station organization, promotion and sales, and current developments in radio and television as mass media.

501. Business Aspects of Television and Film Production (3) I, II

Prerequisites: Telecommunications and Film 260 or 280. Normally taken concurrently with Telecommunications and Film 560 or 581.
 Financing, preproduction planning, and postproduction of television and film.

505. (105.) Regulation of Broadcasting (3) I, II

Prerequisite: Telecommunications and Film 100.
 Responsibilities of broadcasters as prescribed by law, governmental policies and regulations, and significant court decisions.

510. (110.) Script Writing for Broadcasting and Film (3) I, II

Prerequisites: Telecommunications and Film 260 or 280, and successful completion of the University's writing competency requirement.
 Development of a single program and series ideas. Scripting of dramatic original and adaptation forms, and the documentary.

520. (180.) Directing Television and Film Drama (3) I, II

Two lectures and more than three hours of activity.
 Planned for prospective directors of plays for television and film. The student will become acquainted with principles, procedures and methods. Practical experience in University-sponsored productions.

530. (130.) Radio Programing (3) II

Two lectures and more than three hours of scheduled activity.

Prerequisites: Telecommunications and Film 100 and 121.

Formats, policies, production practices and research in modern programing. Student work is broadcast on KPBS-FM.

540. (103.) Broadcast Advertising (3) I

Prerequisites: Two courses in broadcasting or journalism.

Theory, procedures, and the role of broadcast advertising, including marketing and media research, campaign planning, media strategy, time purchasing, and evaluation.

541. (104.) Broadcast Commercial Practices (3) II

Prerequisites: Telecommunications and Film 121, 280, 540, and permission of instructor.

Planning and execution of broadcast advertising and promotion campaigns; creative strategy and production techniques; use of research; campaign evaluation.

550. (156.) Advanced Lighting and Staging for Television and Film (4) I, II

One lecture and more than nine hours of activity.

Prerequisites: Telecommunications and Film 120, 122, 123.

Production elements of television and film, to include lighting and staging techniques, art and graphics, scene design and scene decoration. Practical experience in University-sponsored productions.

560. (168A.) Film Production (3) I, II

One lecture and more than six hours of activity. Practical experience in University-sponsored productions.

Prerequisites: Telecommunications and Film 260, 510, and 520.

Advanced practicum in film production. Cameras, lighting, design, sound techniques for super-8 and 16mm productions. (Formerly numbered Telecommunications and Film 560A.)

561. (168B.) Film Direction (3) I, II

Two lectures and more than three hours of activity.

Prerequisites: Telecommunications and Film 501, 550, and 560.

Studio and location work in the preparation of filmed materials and complete nontheatrical films. Practical experience in University-sponsored productions. (Formerly numbered Telecommunications and Film 560B.)

562. (164.) Documentary and Propaganda Film (3) I

Two lectures and three hours of activity.

Prerequisite: Telecommunications and Film 160.

Viewing and analysis of the major conceptual forms and cinematic techniques of these genres from 1922 to the present.

563. (160.) Film Classics (3) I, II

Two lectures and three hours of activity.

Prerequisite: Upper division standing.

Viewing and analysis of those American and foreign theatrical films, particularly of the sound era, which represent milestones in the development of the cinema. May be repeated with new content. Maximum credit six units.

565. (165.) Animated Film Techniques (3) I, II

Two lectures and more than three hours of activity.

Screening of representative examples and production of a filmograph or animated motion picture. Practical experience in University-sponsored productions.

570. (170.) Educational Telecommunications (3) I

Prerequisite: Telecommunications and Film 100.

The role of instructional and public broadcasting in the United States; utilization of telecommunications in the classroom and industrial training programs.

580. (183.) Advanced Programing and Development for Television (3) I, II

One lecture and more than six hours of activity.

Prerequisites: Telecommunications and Film 280, 510, and consent of instructor.

The development of program ideas into formats for television productions of all types. Practical experience in developing and producing programs for University-sponsored productions.

581. (184.) Advanced Television Directing (3) I, II

One lecture and more than six hours of activity.

Prerequisites: Telecommunications and Film 100, 280, 520 and consent of instructor.

Presentational techniques and individual projects in the direction and production of television programs. Practical experience in University-sponsored productions.

590. (108.) International Broadcasting (3) II

Prerequisite: Telecommunications and Film 500 or 505.

Comparative study of broadcasting in various world areas; economic, social and political determinants of broadcasting patterns.

596. (198.) Selected Topics in Telecommunications and Film (1-3) I, II

Prerequisite: Twelve units in telecommunications and film.

Specialized study of selected topics from the areas of telecommunications and film. May be repeated with new content. Maximum credit six units. (Formerly numbered Telecommunications and Film 496.)

GRADUATE COURSES**600. (200.) Seminar in 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.

602. (272.) Seminar in Mass Communication Theory (3)

Prerequisite: Speech Communication 535.

Analysis of theoretical models of mass communication. Application of operational models for the diffusion of information, and the adoption of innovation, to problems in the mass media.

603. (273.) Seminar in Mass Communications Message Design (3)

Prerequisite: Speech Communication 535.

Selection and organization of message design elements in the mass communications media. Analysis of different effects of various types of mass communications formats, presentations, and systems on individuals and groups.

610. (210.) Seminar in Writing for Broadcast and Film (3)

Prerequisites: Telecommunications and Film 363, 460 and 510.

Dramatic structures as they apply to broadcasting and cinema. Writing a full-length script or scenario.

615. (212.) Seminar in Criticism of Broadcasting and Cinema (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film.

Standards for objective appraisal of the ethical and artistic aspects of radio, television and film programs.

620. (203.) Seminar in History of Broadcasting (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film.

The development of broadcasting in its social, legislative and economic settings, with emphasis on broadcasting in the U.S.

640. (202.) Seminar in Broadcast Advertising Problems (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film.

Analysis of 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.

660. (268.) Seminar in Directing the Dramatic Film (3)

Prerequisites: Telecommunications and Film 520, 560B, and consent of instructor.

Analysis of techniques and stylistic contributions of major directors as seen in their films. Production of a short dramatic film embodying concepts so learned.

670. (270.) Seminar in Educational Telecommunications (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film or educational technology.

Educational uses of electronic media. Use of telecommunications in classrooms and school systems. Relationship of noncommercial radio and television (public broadcasting) to commercial broadcast media and education.

680. (284.) Seminar in Programing and Production (3)

Prerequisite: The equivalent of an undergraduate major in telecommunications and film.
Theory and analysis of programing and production of broadcasting.

700. (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.

705. (207.) Seminar in Broadcast Law and Regulations (3)

Prerequisite: Telecommunications and Film 505 or Journalism 502.
Analysis of legal concepts and issues as applied to commercial and noncommercial broadcasting; relationship of local, state and federal government to broadcast media.

770. (275.) Seminar in Teaching Broadcasting and Film (3)

Broadcast and film curriculum development. Methods of teaching both theory and laboratory courses in broadcasting and film. Analysis of organizations for administering broadcast and film curricula in colleges and universities with public TV stations and/or on-campus instructional TV systems.

798. (298.) Special Study (1-3) Cr/NC

Individual study. Maximum credit six units.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

799A. (299.) Thesis or Project (3) Cr/NC

Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

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

Upper Division Courses**(Also Acceptable for Advanced Degrees)**

The following courses are acceptable on selected advanced degree programs.

AMERICAN INDIAN STUDIES COURSE**533. Problems in American Indian Education (3) II**

Prerequisite: American Indian Studies 110 or 120.
Survey of education system imposed on Indian America from the close of the Indian-White military conflict period to the present. Philosophies, government policy and public school accommodation will be central to the topic. Studies, recommendations and resultant programs that affect the overall educational process will be assessed.

GREEK COURSE**550. (155.) Advanced Reading in Greek (3-4)**

Prerequisite: Greek 304.
Extended, intensive reading in a major author of more difficult or peculiar style or content, such as Aeschylus, Thucydides, Herodotus, Aristotle, Sappho, Aristophanes, Lucian. Emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units. (Formerly numbered Greek 450.)

LATIN COURSE**550. (155.) Advanced Reading in Latin (3-4)**

Prerequisite: Latin 304.
Extended, intensive reading in a major author of more difficult or peculiar style or content, such as Lucretius, Caesar, Tacitus, Livy, Terence, Horace, Propertius, Petronius, Juvenal. Emphasis on style, content, interpretation. May be repeated with new content. Maximum credit nine units. (Formerly numbered Latin 450.)

RELIGIOUS STUDIES COURSES**501. (121A.) Religions of India (3)**

Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of India, especially Hinduism and Buddhism.

503. (121B.) Religions of the Far East (3)

Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of east Asia, especially China and Japan.

506. (126A.) Scriptures of India (3)

Prerequisite: Religious Studies 201, 501 or 503; or six units of philosophy.
The religious and philosophical modes of thought and ways of life in India as reflected in major scriptures; reading and analysis of primary texts in translation.

508. (126B.) Scriptures of Far Eastern Traditions (3)

Prerequisite: Religious Studies 201, 501 or 503; or six units of philosophy.
The religious and philosophical modes of thought and ways of life in east Asia, especially China and Japan; reading and analysis of primary texts in translation.

518. (140.) The Oracular Tradition (3)

Prerequisites: Religious Studies 201, and 360, 361, 501, 503, 506 or 508.
Oracular traditions of East and West, with special attention to the *I Ching* and the *Tarot*.

520. (150.) Religious Consciousness in American Society (3)

Prerequisite: Three units of religious studies.
Critical investigation of the traditions which have helped to shape religious pluralism within American society.

522. (151.) Religion in America (3)

Prerequisite: Religious Studies 520.
Selected topics in religion in America, such as Deism, transcendentalism, pragmatism, church-state relations, Jewish identity, etc. May be repeated with new content. Maximum credit six units.

The California State University and Colleges

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

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

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

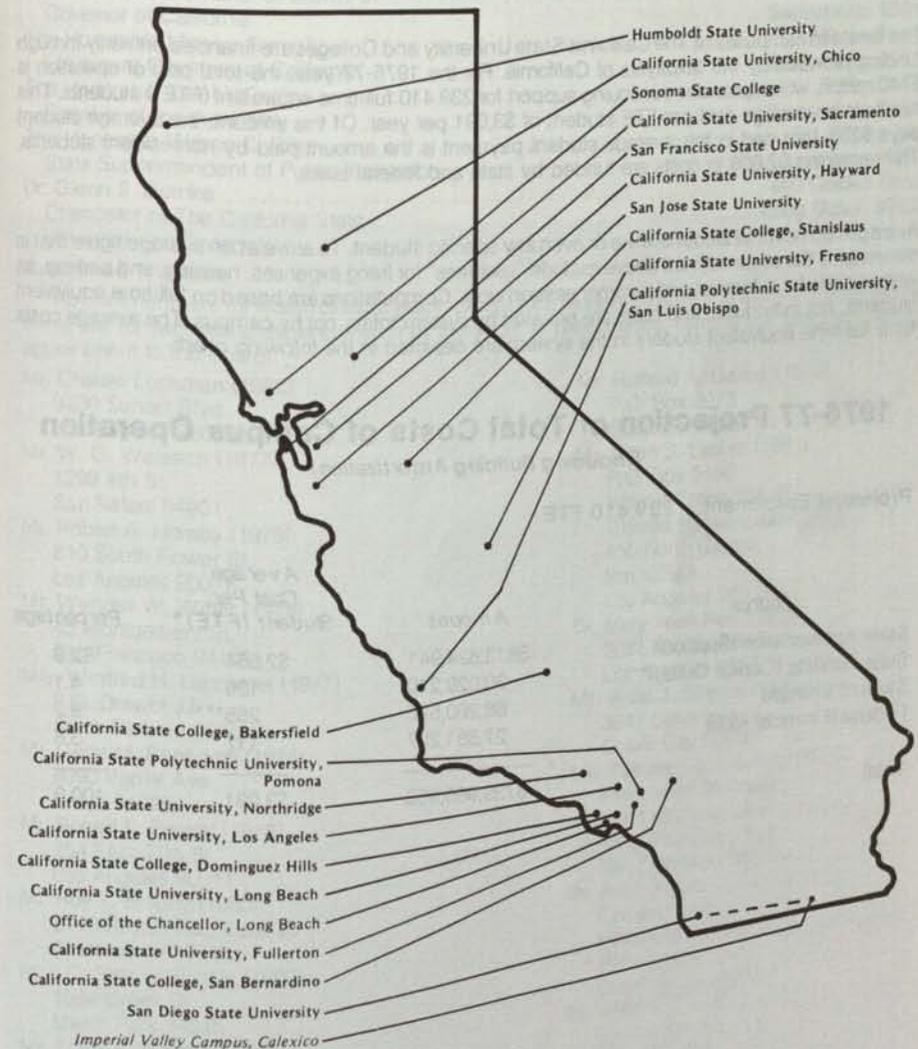
The Trustees, the Chancellor and the Presidents develop systemwide policy, with actual implementation at the campus level taking place through broadly based consultative procedures. The Academic Senate of The California State University and Colleges, made up of elected representatives of the faculty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

Academic excellence has been achieved by The California State University and Colleges through a distinguished faculty, whose primary responsibility is superior teaching. While each campus in the system has its own unique geographic and curricular character, all campuses, as multipurpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All of the campuses require for graduation a basic program of "General Education—Breadth Requirements" regardless of the type of bachelor's degree or major field selected by the student. A limited number of doctoral degrees are offered jointly with the University of California.

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

Enrollments in fall 1976 totaled approximately 300,000 students, who were taught by a faculty of 17,000. Last year the system awarded over 53 percent of the bachelor's degrees and 34 percent of the master's degrees granted in California. Over 600,000 persons have been graduated from the nineteen campuses since 1960.

Average Annual Costs and Sources of Funds per Full-Time Equivalent Student in Fall 1976 California State University and Colleges



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

The nineteen campuses of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. For the 1976-77 year, the total cost of operation is \$740 million, which provides continuing support for 239,410 full-time equivalent (FTE*) students. This results in an average cost per FTE student of \$3,091 per year. Of this amount, the average student pays \$285. Included in this average student payment is the amount paid by nonresident students. The remaining \$2,806 in costs are funded by state and federal taxes.

Averages do not fit all students alike or even any specific student. To arrive at an average figure that is meaningful, the costs outlined above exclude "user fees" for living expenses, housing, and parking, as well as costs for extension and summer session work. Computations are based on full-time equivalent students, not individuals, and costs are prorated by system totals, not by campus. The average costs for a full-time equivalent student in the system are depicted in the following chart:

1976-77 Projection of Total Costs of Campus Operation

(Including Building Amortization)

Projected Enrollment: 239,410 FTE

Source	Amount	Average Cost Per Student (FTE)*	Percentage
State Appropriation (Support)	\$613,824,941	\$2,564	82.9
State Funding (Capital Outlay)**	30,029,210	125	4.1
Student Charges	68,260,575	285***	9.2
Federal (Financial Aids)	27,881,227	117	3.8
Total	\$739,995,953	\$3,091	100.0

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

** The system's wide range of facilities and equipment on the 19 campuses is currently valued at approximately \$1.17 billion, excluding the cost of land. Amortized over a 40-year period, they are valued at \$125 per FTE student.

*** The average costs paid by a student include the student services fee, health facilities fee, college union fee, student body fee, and the nonresident tuition. This amount is derived by taking the total of all student fees and dividing by the total full-time equivalent student enrollment. Individual students may pay more or less than \$285 depending on whether they are part-time, full-time, resident or nonresident students.

Trustees of The California State University and Colleges

Ex Officio Trustees

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The Honorable Mervyn Dymally Lieutenant Governor of California	State Capitol Sacramento 95814
The Honorable Leo McCarthy Speaker of the Assembly	State Capitol Sacramento 95814
The Honorable Wilson C. Riles State Superintendent of Public Instruction	721 Capitol Mall Sacramento 95814
Dr. Glenn S. Dumke Chancellor of The California State University and Colleges	400 Golden Shore Long Beach 90802

Appointed Trustees

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

Mr. Charles Luckman (1982) 9200 Sunset Blvd. Los Angeles 90069	Mr. Richard A. Garcia (1979) P.O. Box 2073 Glendale 91209
Mr. W. O. Weissich (1977) 1299 4th St. San Rafael 94901	Mr. Dean S. Leshner (1981) P.O. Box 5166 Walnut Creek 94596
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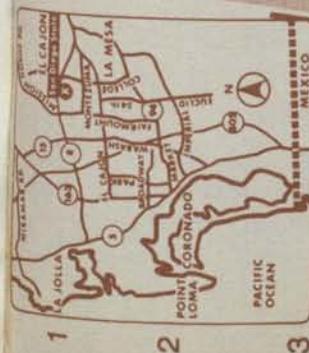
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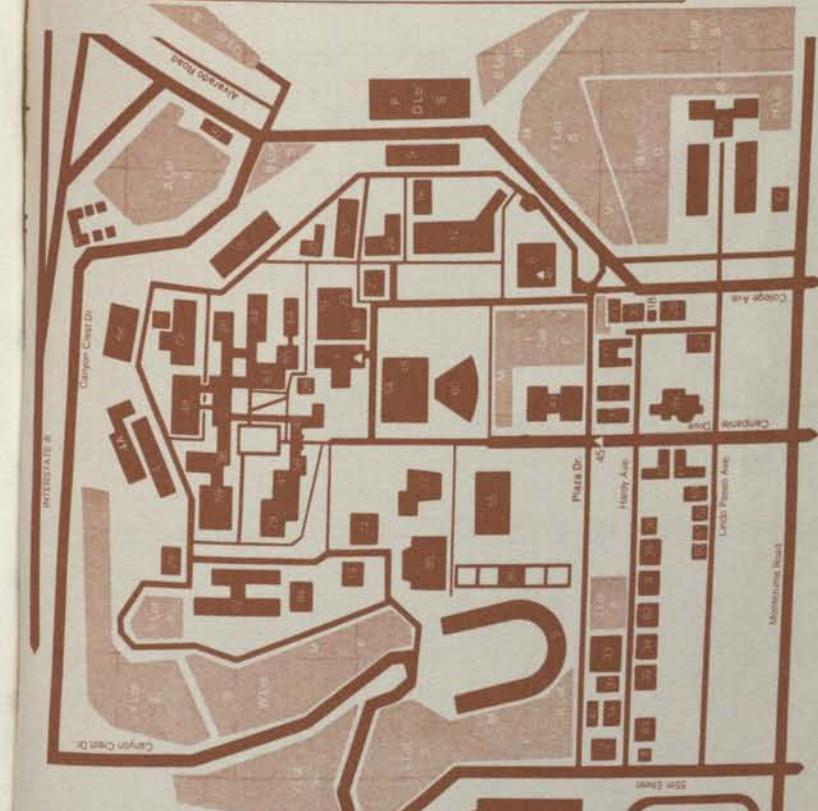
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SAN DIEGO STATE UNIVERSITY

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FALL 1977



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- F-2 4 Art Classrooms
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