BULLETIN OF THE GRADUATE DIVISION

GRADUATE CURRICULA AT
SAN DIEGO STATE

1972–1973

SAN DIEGO STATE
SAN DIEGO, CALIFORNIA 92115
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ACADEMIC CALENDAR—Continued
1972-1973

FALL SEMESTER—Continued

November 15 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
November 17 Last day to withdraw from class or change program.
November 23-25 Thanksgiving recess.
December 1 Last day to apply for mid-year graduation with an advanced degree, Graduate Office.
December 9 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
December 16 Last day of classes before winter recess.
December 18-19 January 1 Winter recess.
January 2 Classes resume.
January 4 Last day for a complete withdrawal from the College.
January 13 First day of final examinations.
January 22-23 Study and consultation.
January 24 First day of final examinations.
February 2 Last day of the fall semester.

SPRING SEMESTER

August 1-31 Applicants for admission or readmission to San Diego State for the spring semester, 1973. Accepted after this date only until enrollment quotas are met.
February 3 Graduate School Foreign Language Test, by appointment four weeks in advance, Test Office.
February 5-9 First day, second semester.
February 6 Testing, advising, and registration.
February 12 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
February 13 Holiday—Lincoln's Birthday.
February 15 First day of classes.
February 24 Holiday—Washington's Birthday.
February 27 Last day to apply for refunds.
March 2 Last day to withdraw from class without penalty for unsatisfactory work.
March 10 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.

ACADEMIC CALENDAR—Continued
1972-1973

SPRING SEMESTER—Continued

April 13 Last day to withdraw from classes or change program.
April 13 Last day to apply for June graduation with an advanced degree, Graduate Office.
April 14 Graduate School Foreign Language Test, by appointment four weeks in advance, Test Office.
April 14 Last day of classes before spring recess.
April 16-21 Spring recess.
April 23 Classes resume.
April 28 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
May 4 Last day for submitting committee-approved theses at Graduate Office for final approval prior to binding for June graduation and removal of incompletes.
May 12 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
May 17 Last day for a complete withdrawal from the College.
May 18 Graduation. Last day of classes before final examinations.
May 26 Holiday—Memorial Day.
May 28 Study and consultation.
May 31 First day of final examinations.
June 3 Baccalaureate Services.
June 8 Commencement. Last day of spring semester.

1973 SUMMER SESSIONS

Intersession (2 weeks).
June 11-22 Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
June 16

Term I Summer Session (6 weeks).
June 25–August 3
July 20
July 25
July 28
August 3
August 6-24
August 18
FEES

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

FEES PAYABLE AT TIME OF REGISTRATION

<table>
<thead>
<tr>
<th>Units enrolled</th>
<th>Fee</th>
</tr>
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<tbody>
<tr>
<td>0-3.9</td>
<td>$60.50</td>
</tr>
<tr>
<td>4-7.9</td>
<td>65.50</td>
</tr>
<tr>
<td>8-11.9</td>
<td>70.50</td>
</tr>
<tr>
<td>12 or more</td>
<td>80.50</td>
</tr>
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</table>

The above fees also include a student activity fee of $9.50, a student union fee of $9.00, and a non-refundable facilities fee of $1.00.

Auditors pay the same fees as students carrying courses for credit.

Tuition for nonresident student:

(In addition to materials and service, activity, and student union fees)

- Nonresident student enrolled for 15 units or more: $555.00
- Nonresident student enrolled for less than 15 units, or fraction thereof (per unit): $37.00

(Fees for fee-paying purposes; zero unit courses are counted as one unit.)

Tuition for foreign student (citizen and resident of a foreign country):

(In addition to materials and service, activity, and student union fees)

- Foreign student enrolled for 15 units or more: $555.00
- Foreign student enrolled for less than 15 units, or fraction thereof (per unit): $37.00

(Fees for fee-paying purposes; zero unit courses are counted as one unit.)

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

Parking fees:

- Non-reserved park space, per semester: $13.00
- Car pool—see cashier at registration: $3.25
- Less than four-wheeled, self-propelled vehicle: $2.00

MISCELLANEOUS FEES

(Fees payable when service is rendered)

- Application fee for admission or re-admission to the College (non-refundable): $20.00
- Late registration: $5.00
- Failure to meet administratively required appointment or time limit: $2.00
- Transcript of record: $1.00
- Check returned for any cause: $2.00
- Loss or damage of equipment and library books: Cost

REGULAR SESSION FEE REFUNDS

Materials and service fees:

To be eligible for a refund of materials and service fees a student must completely withdraw from college. There will be no refund for a reduction of unit load. To be eligible for a refund of materials and service fees, a student withdrawing from college must obtain a withdrawal card from the Registrar's Office and file a refund application with the Cashier's Office, CLS 108, not later than 14 days following the day the academic term begins. All but $13.00 will be refunded. For additional information contact the Cashier's Office or telephone 286-5233.

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 therefor is received by the Cashier's Office within the following time limits:

<table>
<thead>
<tr>
<th>Time limit</th>
<th>Amount of refund</th>
</tr>
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<tr>
<td>Before or during the first week of the semester</td>
<td>100 percent of fee</td>
</tr>
<tr>
<td>During the second week of the semester</td>
<td>90 percent of fee</td>
</tr>
<tr>
<td>During the third week of the semester</td>
<td>70 percent of fee</td>
</tr>
<tr>
<td>During the fourth week of the semester</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>During the fifth week of the semester</td>
<td>30 percent of fee</td>
</tr>
<tr>
<td>During the sixth week of the semester</td>
<td>20 percent of fee</td>
</tr>
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Parking fee:

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

<table>
<thead>
<tr>
<th>Period</th>
<th>Amount of refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-30 days</td>
<td>75 percent of fee</td>
</tr>
<tr>
<td>31-60 days</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>61-90 days</td>
<td>25 percent of fee</td>
</tr>
<tr>
<td>91-end of term</td>
<td>None</td>
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The student applies for the parking refund at the security office in the Administration Building, bringing with him his parking decal. The late registration fee is not refundable. The Cashier's Office should be consulted for further refund details.

SUMMER SESSION FEES

Tuition, each session (per unit): $24.00

Activity fee:

- Term I: 2.00
- Term II: 1.00

Student union fee (required):

- Term I: 3.50
- Term II: 2.00

Parking fees:

- Nonreserved spaces: $5.00
- Six-week session: $1.00
- Other sessions of one week or more: $1.00
EXEMPTIONS

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

VETERAN ALLOWANCES

Allowances for subsistence begin on the date the Business Office clears for payment of fees, or effective date of VA authorization, whichever is later, except that veterans clearing the Business Office on the regular registration days will be certified for subsistence beginning with the first day of the registration schedule.

FEES SUBJECT TO CHANGE

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

PART ONE

BOARD OF TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

5670 Wilshire Boulevard
Los Angeles, California 90036

EX OFFICIO TRUSTEES

Hon. Ronald Reagan State Capitol, Sacramento 95814
Governor of California and President of the Trustees
Hon. Ed Reinecke State Capitol, Sacramento 95814
Lieutenant Governor of California
Hon. Bob Moretti State Capitol, Sacramento 95814
Speaker of the Assembly
Hon. Wilson C. Riles State Capitol Mall, Sacramento 95814
State Superintendent of Public Instruction
Dr. Glenn S. Dumke 5670 Wilshire Blvd., Los Angeles 90036
Chancellor of The California State University and Colleges

APPOINTED TRUSTEES

The term of the appointed trustees is eight years, and terms expire March 1 of the years indicated in parentheses. Names are listed in order of accession to the board.

Charles Luckman (1974)
9220 Sunset Boulevard
Los Angeles 90069

Daniel H. Ridder (1975)
604 Pine Avenue
Long Beach 90801

George D. Hart (1975)
111 Sutter Street
San Francisco 94104

Alex L. Cory (1973)
530 B Street, Suite 1900
San Diego 92101

Edward O. Lee (1974)
P.O. Box 23361
Oakland 94623

Karl L. Wente (1976)
5565 Tesla Road
Livermore 94550

W. O. Weissbach (1977)
1299 Fourth Street
San Rafael 94901

Robert A. Hornby (1978)
P.O. Box 60041, Terminal Annex
Los Angeles 90060

Dr. William F. McColl (1979)
1433 West Merced Avenue
West Covina 91790

Wendell W. Witter (1979)
45 Montgomery Street
San Francisco 94106

Mrs. Winifred H. Lancaster (1977)
P.O. Drawer J
Santa Barbara 93102

Gene M. Benetti (1978)
8990 Poplar Avenue
Corona 92879

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

Roy T. Brophy (1980)
2160 Royale Rd., Suite 20
Sacramento 95813

Robert F. Beaver (1978)
254 East 27th Street
Los Angeles 90011

Frank P. Adams (1973)
235 Montgomery Street
San Francisco 94104
OFFICE OF THE CHANCELLOR OF THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

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

Chancellor Glenn S. Dumke
Executive Vice Chancellor Harry E. Bracebill
Assistant Chancellor, Faculty and Staff Affairs C. Mansel Keene
Vice Chancellor, Academic Affairs William B. Langsdorf
Vice Chancellor, Business Affairs D. Dale Hanner
Vice Chancellor, and General Counsel Norman L. Epstein
Vice Chancellor, Physical Planning and Development Harry Harmon

THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

California State College, Bakersfield
9001 Stockdale Highway
Bakersfield, California 93309
Paul F. Romberg, President
805 833-2011

California State College, Dominguez Hills
1000 East Victoria Street
Dominguez Hills, California 90266
Leo F. Cain, President
213 532-4300

California State College, Fullerton
800 North State College Boulevard
Fullerton, California 92831
L. Donald Shields, President
714 870-2011

California State College, Hayward
25800 Hillary Street
Hayward, California 94542
Ellis E. McCune, President
415 884-3724

California State College, Long Beach
6101 East Seventh Street
Long Beach, California 90804
Stephen Horn, President
213 498-4111

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

California State College, San Bernardino
5900 State College Parkway
San Bernardino, California 92407
John M. Pfau, President
714 887-6311
On November 29, 1971, the Governor signed into law Assembly Bill 123 which created The California State University and Colleges, thereby redesignating the system previously known as the California State Colleges. This legislation provided legal recognition that the California State Colleges have achieved the status of universities in their first decade as a unified system of higher education.

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

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

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

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

While San Jose State College, the oldest, was founded over a century ago, prior to World War II only seven State Colleges were in existence, with a total enrollment of 13,000. Since 1947, twelve new campuses have been established, and sites have been selected for additional ones in Ventura, San Mateo and Contra Costa counties. California State College, Bakersfield, the newest, was opened to students in 1970. Enrollment in the system is expected to pass 100,000 by 1980.
PART TWO
SAN DIEGO STATE
GENERAL INFORMATION

ADMINISTRATION

Acting President .................................................. Donald E. Walker
Assistant to the President ..................................... Lloyd A. Walker
Executive Dean .................................................... George A. Koester
Administrative Analyst .......................................... Margaret L. Gilbert
Manager, ADP Services ......................................... Robert W. Swanson
Director of Institutional Studies ............................... Robert L. McCormack
Facilities Planning Assistant .................................. Clarence B. Cover

Vice President, Administration ................................. Ernest B. O'Byrne
Assistant to the Vice President, Administration .......... Alberto Urieta
Director of Centro de Estudios Chicanos .................... Wayman H. L. Johnson
Director of Educational Opportunities Program .......... Carlos LeGerette
Director of Educational Opportunities Program .......... Gordon F. Lee
Publications and Public Relations Manager ............... William L. Erickson
Director, San Diego State College Foundation .......... William L. Erickson

Vice President, Academic Affairs .............................. Donald E. Walker
Assistant to the Vice President, Academic Affairs ....... Harold K. Brown
Dean of Academic Planning ..................................... Adrian J. Kochanski
Associate Dean, Curriculum .................................... C. Dale Johnson
Associate Dean, Faculty Personnel ......................... George C. Gross
Associate Dean, Staffing and Reporting .................. Robert S. Ackerly, Jr.
Dean of Undergraduate Studies ................................. Ned V. Joy
Director of Mexican-American Studies ..................... Jose Villarino
Director of Educational Services and Summer Sessions ..., Clayton M. Gjerde
Director of Audio-Visual Services ......................... E. Glenn Fullerson
Coordinator of Extended Services ......................... Marilyn R. Petties
Coordinator of Summer Sessions .............................. Marvin H. Platz

Dean of Graduate Studies ....................................... Maurice M. Lemme
Associate Dean of Graduate Studies ......................... Millard R. Biggs
Director of Libraries ............................................. Louis A. Kenney
Secretary to the Faculty ......................................... Maurice L. Crawford

Acting Dean of Students ......................................... Margery Ann Warmer
Assistant to the Dean of Students ............................. C. Shuford Swift
Dean of Activities ................................................. E. June Warren
Dean of Admissions and Records ............................. Robert E. Downen
Registrar ............................................................. Paul W. McCoy
Coordinator of Aztec Center ................................... Charles L. Hanson
Dean of Counseling and Testing .............................. Earl F. Peisner
Coordinator of Counseling ..................................... Michael A. Irwin
Test Officer ......................................................... Herman Roennich
Test Officer ......................................................... Robert C. Ray, M.D.
Director of Health Services ................................... John M. Yarborough
Director of Housing ................................................. John M. Yarborough
Director of Placement, Career Planning, and Financial Aids ......................... Edward M. Webb
Coordinator of Career Planning and Placement .......... Lash H. Laker
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Associate Dean
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Richard D. Wright

Classical and Oriental Languages Department
Mary L. Shurley

Economics Department
Steven C. Schaber

English Department
Robert E. Barker

French-Italian Department
Lowell Tozer (Acting)

Geography Department
James M. Glasgow

German-Russian Department
James D. Bick

History Department
Harry W. Paulin

Philosophy Department
Dennis E. Berge

Political Science Department
Walter H. Koppelman

Religious Studies Department
Charles F. Andrain

Sociology Department
G. Raymond Janes (Acting)

Spanish-Portuguese Department
Thomas L. Gillette

James L. Walsh

COLLEGE OF PROFESSIONAL STUDIES
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Lt. Col. Frederick E. Schwab

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Norman Rost

Athletics Department
Paul A. Lingreen

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O. Kenneth Karr, Jr.

Family Studies and Consumer Sciences
Don W. Powell

Health Science and Safety Department
Donald W. Thiel

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William C. Burchett

Jewelry Department
Gerald D. Bailey

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Elizabeth A. Petrie

Public Administration and Urban Studies
Albert W. Olsen

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James D. Kitchen

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Ray R. Butler

Speech Pathology and Audiology Department
Jack Mills

Telecommunications and Film Department
Sue W. Earnest

Robert E. Lee

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John D. Schopp

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Hale L. Wedberg

Botany Department
Burt Nelson

Chemistry Department
William E. Hagen

Geology Department
Hale L. Wedberg

Mathematics Department
Richard P. Threet

Microbiology Department
L. Richard Shaw

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Henry A. Walch, Jr.

Psychology Department
Norman F. Dessel

Zoology Department
Robert Penn

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Associate Dean
Maurice L. Crawford

William F. Barber

Assistant Dean, College of Business Administration
W. Wallace Harned

William W. Reints

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Richard D. Darley

Marketing Department

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Francis A. Ballentine

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John T. Warburton

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L. A. Leff Farn

Coordinator, Department of Elementary Education
Robert R. Nardelli

Coordinator, Department of Educational Technology and Librarianship
T. Wayne McAllister

Coordinator, Department of Secondary Education
Sigrid Stauffland

Coordinator, Department of Special Education
Shirley E. Forbing

Coordinator, Clinical Training Center
Robert D. Smith, Jr.

Coordinator, Community College Programs
Clarence E. Fishburn

SCHOOL OF ENGINEERING
Chairmen
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Associate Dean
Fredrick T. Quitt

Aerospace Engineering Department
John F. Conly

Civil Engineering Department
Frank E. Straton

Electrical and Electronic Engineering Department
Vincent R. Learned

Mechanical Engineering Department
Richard A. Ficz

SCHOOL OF SOCIAL WORK
Chairmen
Kurt Reicherr, Dean

Joseph B. Kelley

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Adam Gifford, Coordinator

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Social Research Center
GENERAL INFORMATION

San Diego State, founded in 1911, is one of the nineteen publicly supported California State Colleges governed by the Board of Trustees of the California State Colleges and administered through the Office of the Chancellor by the University of California. The primary purpose of the institution is to provide instruction for undergraduate and graduate students, through the bachelor's and master's degrees, in the liberal arts and sciences, in applied fields and in the professions, including the teaching profession. Doctoral degrees are awarded jointly with the University of California.

The campus is situated on the eastern boundary of the city of San Diego on a mesa overlooking Mission Valley, the site of the first mission founded in California by Father Junipero Serra. Mission Valley Freeway cuts through the valley, bringing Balboa Park. Twelve miles to the west are the beautiful resort beaches of the Pacific Ocean. An hour's drive to the east are the Laguna Mountains; and Old Mexico may be reached in half an hour.

Many cultural and recreational facilities of interest to graduate students are located within the metropolitan area of San Diego. The San Diego Zoo, the Old Museum of Natural History, and other museums are located in Balboa Park. The campus is within easy driving distance to the College Stadium in Mission Valley and the Sports Arena near Mission Bay provide facilities for major league sports. Opportunities for all forms of athletics, hiking, camping, and aquatic sports are available at all times of the year. San Diego State with a total enrollment of more than 26,000 students offers bachelor of arts, bachelor of science, or bachelor of education degree; the Master of Public Administration degree; and two-year graduate curricula in 30 fields leading to the master of arts or master of science degree; leading to the degree of Doctor of Philosophy or Doctor of Education in the College of Graduate Studies. The University of California, Berkeley, offers a curriculum in the College of Arts and Letters, develops and coordinates the curricula and activities relevant to the arts and sciences, including education resources center, and the department of special collections and archives. Open and enclosed study carrels, typing rooms, and group study facilities are provided throughout the building.

Library resources are noteworthy. The collections consist of 770,000 volumes including books, bound periodicals and government documents. Additional resources include: 950,000 microcards and microfilms, 20,000 reels of microfilm, 30,000 college catalogues, 35,000 educational resource materials, 25,000 scientific reports, 225,000 archival papers and many other graphic materials such as pamphlets, prints, maps and slides. The library receives over 9,000 periodical and other serial titles excluding government documents. It is a depository for United States, California, Illinois, New York and Texas government publications and receives United Nations and Organization of American States publications and those of several other international and political bodies.

Highly trained reference librarians assist students and faculty in their reading, study, and research. To aid the student in developing his powers of critical, independent thought through wide acquaintance with books, the library has an open shelf arrangement which gives direct access to nearly all books. Inexpensive copying machines are available.

Several research centers on campus have collections not included in the libraries' holdings. These include: Public Administration and Urban Studies Laboratory, 32,000 items; Economic Research Center, 32,000 items; Geography and Geology departments, 90,000 maps; Art Department, 70,000 slides; Music Department, 4,000 phonorecords and 60,000 music scores; Anthropology Department, 17,000 items.

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.

The Bureau of Business and Economic Research in the School of Business Administration conducts research in the areas of economics and business with special reference to local and regional problems. The Bureau is a member of the Associated University Bureaus of Business and Economic Research.

The Bureau of Educational Services Research in the School of Education operates in community and service studies and disseminates educational research information.

The Bureau of Marine Sciences is organized to facilitate interdisciplinary education and marine science. It is operated under the guidance of the Faculty Marine Sciences Committee.

The Center for Asian Studies, an interdisciplinary organization in the College of Arts and Letters, develops and coordinates the curricula and activities relevant to the Asian Studies Program.

The Center for Economic Education works with the public schools to promote better economic education. The functions include research, development and use of appropriate materials, in-service and pre-service instruction, and service.
LIVING ACCOMMODATIONS

Accommodations for 1,668 single resident students are available in six residence halls on campus. Each of the buildings is fire-proof and air-conditioned throughout. Five halls (two for men and three for women) accommodate 209 students each with sleeping and study facilities for each student per room basis. The sixth residence hall, which is co-ed, accommodates 623 students with 221 spaces for men. Adequate provision for study hours is made, as well as opportunity for participation in campus activities.

Student government in each residence, working through the Associated Students Committee, sets standards for basic behavior in these residence halls. Each of the smaller residence halls is staffed by one Head Resident and five Assistants, and with two Head Residents and appropriate staff in the larger hall.

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

It is the responsibility of each student and/or parent to contact the Housing Office if one wishes to obtain on-campus housing. The early applications are given priority in date order as the demand exceeds the number of spaces on this campus. To apply for housing, the student should send a self-addressed envelope to the Director, Housing Office. When the application is completed, it should be accompanied with a $106 deposit, mailed to the Cashier's Office in the Campus Laboritory. A request for a space cannot be confirmed by San Diego State until early summer. A student may apply as early as a year in advance. Applications are taken in order of date received. Though consideration will be given to a student's request for an individual hall and roommate, he cannot be guaranteed these specific accommodations.

PERSONNEL SERVICES CENTER

The facilities of the Personnel Services Center are available to graduate students who may require assistance in the solution of problems of an educational, occupational, or personal nature. Counseling appointments may be made in the Administration Building or by telephone. Psychological testing is available upon arrangement with a counselor.

STUDENT HEALTH SERVICES

As a part of the program of student personnel services the college provides health services for the protection and maintenance of students. These services are administered under the supervision of a medical director-administrator. A full-time physician is available to the students when school is in regular session.

As a part of the admissions procedure a health history is required of all students. Careful attention is given to students undergoing private medical treatment, and those for whom a modified study load or a limited participation in physical education activities seems advisable. The physical examination must be completed as a condition to matriculation in accordance with Section 41200 of the California Administrative Code.

A student health insurance program sponsored by the Associated Students is currently in effect. This insurance, which covers hospitalization and specified medical and surgical services, may be purchased by the student for a limited period open the first 30 days of each semester. Refunds will be made to students graduating or withdrawing from school on a prorated basis.

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 $1.00 plus tax and 25¢ for shipping, handling, and insurance. The catalog contains information on admissions, fees and tuition, courses, scholarships, residence halls, student services and activities, and a faculty directory.

The Graduate Bulletin, published annually in May, is available without charge upon request made to the Graduate Office.

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

The Class Schedule and Instructions for Registration is published prior to the opening of each semester and may be purchased at the Aztec Shops Bookstore on the campus. The current price is 20¢ plus an additional charge of 15¢ for mailing.

ACADEMIC YEAR

The academic year at San Diego State, consisting of two semesters of 18 weeks each, begins in September and ends in June. It is defined in the Administration Building on the Monday of the week preceding the week that class instruction is scheduled to start. Following the last day that final examinations are regularly scheduled for the Academic Calendar appearing in this bulletin.
CAREER PLANNING AND PLACEMENT CENTER

The Career Planning and Placement Center is an integral part of the educational program of the college. Placement is considered as the action phase of both the instructional program and the vocational guidance service at San Diego State. It involves four phases: (1) understanding of self as a candidate, (2) information concerning opportunities available, (3) contacting and interviewing employers, and (4) following through to learn of actual placement acceptance and the amount of success of the candidate.

The Career Planning and Placement Center serves all divisions of the college. Through its professional staff the Center provides placement counseling for the assistance of any student in finding a position which will meet his individual needs and utilize his abilities. Over 1,000 business firms, government agencies, and school districts actively recruit through the Center each year. Many of these concerns are national in scope. On the average, each candidate is interviewed by three to five concerns in the process of finding a position best suited to him. The Early March System (EMS) is available to all students registered with the Center except those in Education. EMS is a student's silent employer. Each candidate completes a card with twenty selector items on it and the card is then viewed by many firms and agencies. The EMS card should be completed the semester before graduation. The Center maintains a vocational library of current materials and company brochures from firms and agencies, as well as scholarship brochures, which graduate students may wish to use. A student employment placement service is provided for those who need financial aid in order to continue their education. Many of the part-time jobs are directly related to areas of student specialization. A diligent effort is made to follow up graduates in order to learn more about their success and to assist in such future job adjustment as may be necessary.

Career planning placement services are available to all students who have completed 12 semester units acceptable on a graduate program at San Diego State. Assistance in finding part-time employment is given to all students who are enrolled for seven or more semester units.

COST OF LIVING

Each student should plan his budget based upon his individual assessment of expenses while attending college. Varying personal circumstances, such as marital status, living accommodations, availability of resources from student self-help or savings, parents or spouse contribution, make it difficult to give specific information on the cost of attending college. At San Diego State it is possible to live adequately and participate moderately in college life and activities on a modest budget. The estimated expenses provided below serve only as a guide to students in planning their college budget.

ESTIMATED EXPENSES FOR THE ACADEMIC YEAR

Typical Cost of Living on Campus

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials, service, student activity, and student union fee, and facilities fee</td>
<td>$161.00</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>180.00</td>
</tr>
<tr>
<td>Room, board, health services, parking</td>
<td>1,250.00</td>
</tr>
<tr>
<td>Personal</td>
<td>450.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2,041.00</strong></td>
</tr>
</tbody>
</table>

Typical Cost of Commuting Students

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials, service, student activity, and student union fee</td>
<td>$161.00</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>180.00</td>
</tr>
<tr>
<td>Transportation and parking</td>
<td>250.00</td>
</tr>
<tr>
<td>Board and incidentals</td>
<td>600.00</td>
</tr>
<tr>
<td>Personal</td>
<td>400.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,591.00</strong></td>
</tr>
</tbody>
</table>

PART THREE

THE GRADUATE DIVISION

The Graduate Division of San Diego State, established in 1957, includes all interdisciplinary graduate degree curricula and all graduate degree curricula offered by departments, schools, and colleges. Under the Vice President for Academic Affairs, the Dean of Graduate Studies is the administrative officer of the Graduate Division and Chairman of the Graduate Council of the Graduate Division. The Graduate Council has responsibility for the development, improvement, supervision and administration of all graduate study leading to graduate degrees at San Diego State.

Graduate study at San Diego State was first offered in 1946 in connection with a graduate program leading to the general secondary teaching credential. The Master of Arts degree was authorized in 1949, the Master of Science degree in 1953. The first two-year graduate program leading to the Master of Social Work was authorized in 1965.

In July, 1965, San Diego State was authorized to offer a graduate program leading to the Doctor of Philosophy degree in Chemistry jointly with the University of California, San Diego. This degree was awarded to the first candidate in June, 1967. A joint doctoral program leading to the degree of Doctor of Philosophy in Genetics with the University of California, Berkeley was authorized in March, 1968. A third joint doctoral program leading to the degree of Doctor of Philosophy in Ecology with the University of California, Riverside was authorized in March, 1969.

As of September, 1971, over 5,800 graduate students were enrolled at San Diego State of which 2,331 had been admitted to the Graduate Division with classified graduate standing.

From June, 1950 to June, 1971, 1,756 Master of Arts degrees, 1,548 Master of Science degrees, 42 Master of Public Administration degrees, 17 Master of Business Administration degrees, 12 Master of City Planning degrees, and 466 Master of Social Work degrees have been awarded.

Graduate curricula in the Graduate Division of San Diego State are designed to provide an opportunity for advanced study and research in specialized fields of study in which qualified graduate students may prepare for careers requiring advanced study or may improve their competence in their present professions.

In pursuing these objectives, the graduate student is expected to develop a spirit of unbiased inquiry, the ability to arrive independently at logical conclusions based on careful investigation, and a mastery of the subject matter of his field of study characterized by a high level of scholarship.
THE GRADUATE COUNCIL

The Graduate Council of the Graduate Division at San Diego State consists of the Vice President for Academic Affairs, the Dean of Graduate Studies, the Associate Dean of Graduate Studies, and members of the faculty appointed by the President upon recommendation of the appropriate dean of a school or college of the institution. For the academic year 1972-1973, the membership of the Graduate Council is as follows:

Donald E. Walker, Ph.D. (ex officio) Vice President for Academic Affairs
Maurice M. Lemme Dean of Graduate Studies
Millard R. Biggs, Ph.D. Associate Dean of Graduate Studies
William F. Barber, D.B.A. School of Business Administration
Marybelle S. Bigelow, M.A. College of Professional Studies
Clarence E. Fishburn, Ed.D. School of Education
E. Nicholas Genovese, Ph.D. College of Arts and Letters
William A. Hunches, Ph.D. College of Sciences
Marion J. Kahn, M.S. School of Social Work
John P. Kern, Ph.D. College of Sciences
James D. Kirchen, Ph.D. College of Professional Studies
Larry L. Leach, Ph.D. College of Arts and Letters
Iraj Noorany, Ph.D. School of Engineering

DUTIES AND RESPONSIBILITIES

The duties and responsibilities of the Graduate Council include, but are not necessarily limited to, the following activities which are derived from the regulations in the California Administrative Code, Title 5, Education:

1. Establishing criteria for classified graduate standing in the Graduate Division and approval of classified graduate standing for qualified applicants.
2. Establishing criteria for retention and withdrawal of students who have been admitted to graduate curricula.
3. Establishing procedures for the administration of joint doctoral degree programs.
4. Determining the number and nature of examinations required in the Graduate Division, exclusive of departmental examinations.
5. Establishing requirements for advancement to candidacy and acting on requests for such advancement.
6. Considering and acting on all graduate degree programs and petitions of students in the Graduate Division.
7. Adopting rules concerning the form of presentation, acceptability, and disposition of theses and dissertations.
8. Making final recommendation to the faculty for the awarding of all advanced degrees.
9. Making recommendations concerning requests for new graduate level (200-numbered) courses and new advanced degree curricula.
10. Coordinating and systematizing procedures followed by departments, interdepartmental groups, or schools offering advanced degrees or credentials.
11. Making recommendations to the President, the Vice President for Academic Affairs, committees, the Senate, and the faculty on matters pertaining to graduate study at San Diego State.

AUTHORIZED GRADUATE DEGREES

DOCTOR OF PHILOSOPHY

Chemistry Ecology Genetics

Masters of Arts

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

Masters of Science

Aerospace Engineering Home Economics
Astronomy Mass Communications
Biology Mathematics
Business Administration Mechanical Engineering
Chemistry Microbiology
Civil Engineering Physics
Counseling Psychology
Criminal Justice Radiological Physics
Administration Social Work

Masters of Business Administration Statistics

Masters of City Planning

Masters of Public Administration

Masters of Social Work
TEACHING CREDENTIALS
San Diego State College offers credential programs requiring at least one year of postgraduate course work of upper division or graduate level for the following credentials:

The Standard Teaching Credential with a Specialization in Elementary Teaching
The Standard Teaching Credential with a Specialization in Secondary Teaching
The Standard Teaching Credential with a Specialization in Community College Teaching

In addition, graduate programs are offered for the following credentials:

The Standard Designated Services Credential with a Specialization in Pupil Personnel Services (including the school psychologist and school psychologist endorsements)

The Restricted Credential (Speech and Hearing Specialist)

A student who completes the prescribed programs for the above credentials will be recommended by the college to the State Department of Education for the credential.

For information regarding admission to teacher education and requirements for these credentials, refer to the General Catalog or write directly to the School of Education.

GRADUATE STUDY IN THE SUMMER SESSIONS
In San Diego State's summer sessions a graduate student may earn credit in residence which may be used to satisfy the requirements for an advanced degree or satisfy the requirements for an advanced degree. If a student plans to offer work taken in a summer session to for: (1) admission to the College with unclassified graduate standing at the Office of Admissions, and (2) admission to the Graduate Division with classified graduate standing at the Graduate Office.

Students planning to attend the College 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 by the time of registration for the spring semester. 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 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 bulletin.

VETERANS AND GRADUATE STUDY
San Diego State has been approved by the Veterans Administration and the California State Department of Education to offer graduate study for veterans that require graduate training. Veterans who are interested in graduate work should visit the Campus Veterans Office in Room 107 of the Arts and Sciences Building registration.

The "graduate load" for a veteran is defined as the approved courses leading to a definite graduate objective, such as the master's degree, a teaching credential, school administration credential, etc.

Graduate veterans are required to carry graduate loads of not less than 9 officially approved units per semester for full subsistence.

GRADUATE TEACHING ASSISTANTSHIPS
Graduate teaching assistantships may be obtained by qualified graduate students in the areas of anthropology, art, astronomy, business administration, chemistry, drama, economics, engineering, English, French, geography, geology, German, health science and safety, family services, and consumer sciences, industrial arts, mathematics, microbiology, physical education, political science, psychology, public administration, Russian, sociology, Spanish, speech communication, and telecommunications.

Qualifications for appointment include admission to San Diego State University with classified graduate standing, admission to the Graduate Division with classified graduate standing for the purpose of obtaining a master's degree, and enrollment in not less than 6 units of 100- or 200-numbered courses each semester in the area in which the degree is sought.

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 16 units unless an excess of this amount is authorized by the Dean of Graduate Studies.

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.

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, meet the requirements for admission to the Graduate Division with classified graduate standing, and enroll in and complete at least six units of 100- or 200-numbered courses in the area of their degree interest each semester in which they hold the appointment.

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.
Nine Education Scholarships of $500 each are available to upper division or graduate students planning to teach in the public schools of California. The 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.
A $500 scholarship awarded annually to a student enrolled for full-time study toward the Master of Public Administration degree. Make application to Director, Public Administration and Urban Studies.

DOROTHY CRANSTON STOTT

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

K. W. STOTT

A $100 per year scholarship to a graduate of San Diego State 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 Graduate Division may be considered for a stipend if they are in need of financial help to undertake the program for the Master of Social Work degree. Eligibility for such stipends of Social Work indicates on his application whether he is in need of a stipend and for consideration of the request as soon as appropriate.

FELLOWSHIPS

The San Diego State Scholarship Office receives the annual announcements on place on each college and university as to the number of applications it may receive. The Committee, with members of the San Diego State faculty who have them-students to the San Diego State Graduate Fellowship Program and Scholarship Committee in applying for graduate fellowships, students should take this examination no later than mid-term in the San Diego State Test Office.

SAN DIEGO INSTITUTE ON GOVERNMENT SCHOLARSHIP

A $100 scholarship awarded annually to a student enrolled for full-time study toward the Master of Public Administration degree. Make application to Director, Public Administration and Urban Studies.

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CALIFORNIA STATE GRADUATE FELLOWSHIP PROGRAM

Western Association of Schools and Colleges and offering recognized graduate or ship and Loan Commission. Fellowships may be used for graduate or professional are eligible to apply for a Graduate Fellowship. Fellowships are awarded in the amount of up to $1,500 per year. Fellowships are not to be used for books, supplies, room, board, or other college expenses. Fellowships are awarded for the academic year and must be at least one-half the normal full-time work load. 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 work load. 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 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.

FINANCIAL AID

At San Diego State, 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 opportunities 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, Administration Building, Room 222.

SAN DIEGO STATE 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 one semester of full-time attendance at San Diego State 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, for exceptions, not to exceed $200. Repayment is generally made during the semester; however, graduate students in their last year at the College may select deferred repayment plans. Most loans under this program are free of interest. Applications are available throughout the academic year.

NATIONAL DEFENSE STUDENT LOAN PROGRAM

National Defense 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 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.

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 (depending on the applicant's family adjusted gross income) 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 $1,500 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 (if the applicant's family adjusted gross income is under $15,000) during the period of ten years from the time the borrower ceases to carry at least one-half the normal full-time work load, and may extend between three and 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.

COLLEGE WORK-STUDY PROGRAM

Students demonstrating financial need may be employed in positions for up to an average of fifteen 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 $1.70 to $2.87 per hour. Job
opportunities are available both on campus and with selected community and gov-
ernment agencies in the San Diego area.

MINIMUM REQUIREMENTS FOR ALL APPLICANTS
San Diego State 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 San Diego State in determining the student's
need for financial assistance. All students who have resided with their parents for
over three weeks during the past year, or who have received over $200 of financial
assistance from their parents, are required to submit a copy of the Parent's Confi-
dential Statement form to CSS, designating San Diego State College as one of the
recipients. Other necessary forms and an information brochure may be obtained
at the Financial Aid Office.

ELIGIBILITY FOR AID
All the above aid programs, except San Diego State 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 provided by the college. Application forms are available between January

INSTITUTE FOR SECONDARY SCHOOL TEACHERS OF MATHEMATICS
Under a grant from the National Science Foundation, San Diego State is
offering an Academic Year Institute for six experienced and six intern high school
teachers of mathematics during the academic year 1972-1973. All participants will
attend an eight-week preliminary session starting June 26, 1972.

To be eligible for admission to the Institute, the applicant must be admitted to
bachelor's degree from an accredited institution; and, if planning to earn the
teacher, selected from the Greater San Diego area, will attend on a half-time
commuting basis. Matched one-to-one the intern will replace the experienced
teacher half-time in the classroom and attend the Institute half-time.

The curriculum of the Institute is designed to provide the experienced teachers
with an opportunity to work toward the Master of Arts degree for teaching
secondary level. The intern will be provided an opportunity to work toward the
successful teachers prior to assuming full-time duties in the classroom.

Stipends, allowances for dependents, travel and books will be provided the
intern both during the academic year and for two summers. The experienced
continue to receive his regular salary during the academic year; he will be
paid by the National Science Foundation. Information concerning the Institute
State.

ADMISSION OF GRADUATE STUDENTS
The conditions for admission of graduate students to San Diego State are de-
termined by the Board of Trustees of the California State University and Colleges
and are stated in Section 41000 of the Administrative Code as follows:

(a) For admission with graduate standing as an unclassified graduate student, a
student shall have completed a four-year college course and hold an ac-
ceptable baccalaureate degree from an accredited institution; or shall have
completed equivalent academic preparation as determined by the appro-
priate college authorities; and must satisfactorily meet the professional,
personal, scholastic, and other standards for graduate study, including
the appropriate college authorities, as the appropriate college authorities may prescribe.

(b) Admission to a state college with graduate standing does not constitute
admission to graduate degree curricula.

The Office of Admissions is charged with the responsibility of administering this
section of the Administrative Code.

ADMISSION OF GRADUATE STUDENTS
All students holding a baccalaureate degree who desire to enroll at San Diego
State for postgraduate study must apply for admission to the college through the
Office of Admissions. After the required application forms and official records
have been filed in the Office of Admissions, the Dean of Admissions and Records
may:

(1) Admit the applicant with unclassified graduate standing if he holds an accept-
able baccalaureate degree from an accredited institution.

(2) Admit the applicant as an undergraduate student if he does not hold an ac-
ceptable baccalaureate degree from an accredited institution.

Since admission with unclassified graduate standing does not constitute admission
to graduate degree curricula, a graduate student who wishes to enter a graduate
degree curriculum must file an application for admission to the Graduate Division
with classified graduate standing as outlined in the section on Admission of Gradu-
ate Students to the Graduate Division.

APPLICATION FOR ADMISSION
All new graduate students (including graduates of San Diego State) and all
former graduate students who have interrupted their attendance at San Diego State
by one or more semesters (without leave of absence) must comply with the fol-
lowing procedure in seeking admission or readmission to San Diego State:

Application Procedure. All prospective students must file a completed application
for admission within the appropriate filing period. A completed undergraduate
application includes Part A, the application form; Part B, the data form; and the
non-refundable application fee of $20.00. A graduate application includes Part A; Part B, with the supplemental graduate admission application; and the non-
refundable application fee of $20.00. Graduate applicants who were enrolled as
undergraduate students at the college in the term immediately preceding the term
for which they now wish to apply must also complete all the required forms and
submit the $20.00 application fee (effective with application for Spring semester
1973). Each applicant may file only one application for any one term within the
California State University and Colleges system. The application should be filed
with the college of first choice. Alternate choice campuses may be listed on the
application.
Application Filing Periods.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Initial Filing Period</th>
<th>Extended Filing Period</th>
</tr>
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<tbody>
<tr>
<td>Spring, 1973</td>
<td>August 1-31, 1972</td>
<td>September 1, 1972 (continues until quotas are reached)</td>
</tr>
<tr>
<td>Fall, 1973</td>
<td>November 1-30, 1972</td>
<td>December 1, 1972</td>
</tr>
<tr>
<td>Spring, 1974</td>
<td>August 1-31, 1973</td>
<td>September 1, 1973</td>
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</table>

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

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

Space Reservations. Applicants who can be accommodated within category quotas will receive confirmation of space reservation. Although the space reservation is not a statement of admission, it is a commitment on the part of the college to admit a student once eligibility has been determined. When the student receives notice of the space reservation, he should initiate action to have transcripts of all college and high school work sent to the college where space has been reserved. The college will inform him of the number of copies of transcripts required, dates for submittal, and where they should be sent. The student should not request that transcripts be sent until requested to do so by the College where space has been reserved.

LIMITATION OF ENROLLMENT

Admission to a state college shall be limited to the number of students for whom facilities and competent instructors are available to provide opportunity for an adequate college education. The Board of Trustees shall determine the number of students for whom there are available facilities and competent instructors at the college.

Redirection. When applying for admission to San Diego State, applicants should indicate other California State Colleges which they would be willing to attend, if not admitted to San Diego State. Applications of students who cannot be accommodated at San Diego State will automatically be forwarded to their second choice, and if they cannot be accommodated there, to their third choice, and so on.

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

REQUIRED OFFICIAL FORMS

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

1. Application for admission or readmission, accompanied by a $20 non-refundable application fee. Make check or money order payable to San Diego State College.

   (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 each previous semester.)

2. Health history record

3. Residency statement

These forms may be obtained from the Admissions Office. Letters from applicants significantly different from what is expected will not be considered as applications for admission. The official forms must be filed.

FILING OF RECORDS

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

1. Transcript from high school of graduation or last in attendance (not required of the graduate student who holds a bachelor's degree from an accredited institution but is required of the student who holds a bachelor's degree from a nonaccredited institution).

2. Transcripts from EACH college attended (including extension, correspondence, summer session, or evening courses).

   Graduate students must file transcripts in duplicate if they plan to enter 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 by the institution attended. The applicant must request the school or college to send the transcript to the Residency Admissions Office, San Diego State, or money order payable to San Diego State College.

To obtain the above transcripts, the student should not initiate action to have transcripts sent until ordered by the college where space has been reserved. Although the space reservation is not a statement of admission, it is a commitment on the part of the college to admit a student once eligibility has been determined.

The student should not request that transcripts be sent until requested to do so by the College where space has been reserved.

Further information concerning a student's residency classification may be obtained from the Residency Status Office.

DETERMINATION OF RESIDENCE

The following statement of the rules regarding residence determination is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The statutes governing residence determination for tuition purposes are found in Education Code Sections 23731.2-23762. Government Code Sections 243-244, and Civil Code Section 225. The determination of whether a student qualifies as a "resident" for admission and tuition purposes is made by the College after review of a "Residency Questionnaire" completed by each student upon entering the College. The residence questionnaire is designed to provide to the College information necessary for residency determination, including the applicability of any exceptions.

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a "resident student" for admission and tuition purposes. A residence determination date is set for each academic term and is the date from which residence is determined for that term.

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

Upon attaining majority, the student may acquire a residence apart from his or her parents. The acquisition of California residence by an adult requires both physical presence in the state and, at the same time, an intent to remain in California indefinitely, that is, an intent to regard California as one's permanent home. Although physical presence is easily proven, subjective intent is more difficult, requiring the student to present evidence of various objective manifestations of such intent. (The foregoing rules will have a special application during the 1972-73...
The residence of a married woman is that of her husband unless she is separated, in which case she can establish her own residence. An alien is not eligible to acquire residence until admitted into the United States for permanent residence under an immigrant visa.

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

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

The student is cautioned that this summation of rules regarding residency determination is by no means a complete explanation of their meaning. The student should also note that changes may have been made by the Legislature between the time this bulletin is published and the relevant residence determination date.

ADMISSION OF FOREIGN GRADUATE STUDENTS TO SAN DIEGO STATE

A 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 should write directly to the Dean of Admissions, San Diego State College, San Diego, California, for information on admission requirements and procedures.

Applicants for admission as either graduates or undergraduates whose education has been in a foreign country should file an application for admission, official certificates and detailed transcripts of record from each secondary school and collegiate institution attended several months in advance of the opening of the semester in which the applicant expects to attend. If certificates and transcripts are not in English, they should be accompanied by certified English translations. Credentials will be evaluated in accordance with the general regulations governing admission to San Diego State.

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

A student whose undergraduate instruction has been in a language other than English will generally need at least two years for the completion of the requirements for the master's degree. Since no graduate fellowships or scholarships are available for foreign graduate students at San Diego State, arrangements for financial support necessary for three or four semesters should be made before the student comes to the United States.

Subsequent to admission to the college by the Dean of Admissions as an unclassified graduate student, a student seeking an advanced degree must apply for admission to the Graduate Division with classified graduate standing. Application forms for this purpose may be obtained from the Dean of Graduate Studies. Admission to the college with unclassified graduate standing does not imply admission to a graduate degree program in the Graduate Division.

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.

Upon arrival at San Diego State, the foreign graduate student should arrange for appointments with the Coordinator of Foreign Student Admissions and the Dean of Graduate Studies.

REGISTRATION

Only students who have received a Notice of Admission to the College from the Dean of Admissions and Records will be eligible for registration for the Fall or Spring Semesters.

PRIORITY FOR REGISTRATION AND PAYMENT OF FEES

Each student is assigned a priority number which determines the order in which he registers and pays fees. The schedule for registration and payment of fees is published in the Class Schedule and Instructions for Registration, which is available at the student's office prior to the registration period for each semester. Priority numbers appear on the Notice of Admission for entering students, and on the permanent identification cards for students continuing their uninterrupted enrollment in the regular semesters.

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UNCLASSIFIED GRADUATE STUDENT ENROLLMENT
An unclassified graduate student is not eligible to enroll in 200-numbered courses, except with permission of the instructor and concurrence of the Dean of Graduate Studies. All credit earned by an unclassified graduate student 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.

DEBTS OWED TO THE INSTITUTION
From time to time the student may become indebted to the college. This could occur, for example, when the student fails to repay money borrowed from the library, fees, or when the student fails to pay for other services provided by the college at the request of the student. Should this occur, Sections 42380 and 42381 of the California Administrative Code authorize the college to withhold "permission to register, to use facilities for which a fee is authorized to be charged, to receive any person owing a debt" until the debt is paid. For example, under these provisions the college may withhold permission to register, and may withhold other services, such as grades and transcripts. If a student feels that he or she does not owe all or a part of a particular fee or charge, the student should contact the college. The business office, or another office of the college to which the student will be referred by the business office, will review the pertinent information, including information the student may wish to present, and will advise the student of its conclusions with respect to the debt.

ADMISSION OF GRADUATE STUDENTS TO THE GRADUATE DIVISION
Students will be admitted to the Graduate Division only after they have been officially admitted to San Diego State by the Dean of Admissions.

The requirements for admission of students to all graduate curricula are determined by the Board of Trustees of the California State University and Colleges and are stated in Section 41001 of the Administrative Code as follows:

"A student who has been admitted to a state college under Section 41000 (quoted above) may, upon application, be admitted to an authorized graduate degree curriculum of the college as a classified graduate student if he satisfactorily meets the professional, personal, scholastic, and other standards for admission to the graduate curriculum, including qualifying examinations, as the appropriate college authorities may prescribe. Only those applicants who show promise of success and fitness will be admitted to graduate degree curricula, and only those who continue to demonstrate a satisfactory level of scholastic competence and fitness, as determined by the appropriate college authorities, shall be eligible to continue in such curricula. Students whose performance in a graduate degree curriculum is judged to be unsatisfactory by the authorities of the college may be required to withdraw from all graduate degree curricula offered by the college."

At San Diego State, admission to any graduate degree curriculum is accomplished by being formally admitted to the Graduate Division with classified graduate standing. A student desiring to begin work for an advanced degree offered at this institution must first be admitted to the college with unclassified graduate standing. Subsequently, (or simultaneously with) the filing of his application for admission to the college, he must file application for admission to the Graduate Division with classified graduate standing and specify his graduate objective.

Applications for admission to the Graduate Division must be filed in duplicate on forms available at the Graduate Office. A graduate student desiring to take courses, but who does not wish to earn an advanced degree at San Diego State, is not required to gain admission to the Graduate Division. If a graduate student desires a credential but not an advanced degree, he must meet the admission requirements for the appropriate credential.

**Classified Graduate Standing**
In order to receive classified graduate standing in the Graduate Division, the applicant must:

1. Satisfy the requirements for unclassified graduate standing in the college.
2. Have earned not less than a 2.5 grade point average in all undergraduate work taken for the baccalaureate degree.
3. Obtain a satisfactory score on the Graduate Record Examination Aptitude Test. Scores made on this examination will be used in the determination of classified graduate standing and not as a criterion for advancement to candidacy. (Students holding a master's or higher degree from an institution which is a member of the Council of Graduate Schools are exempted from this requirement.)
4. Have completed an undergraduate major appropriate to the field in which he desires to earn an advanced degree.
5. Satisfy the special departmental or school requirements as stated in Part Four of this bulletin under Fields of Study and Courses of Instruction.
6. Meet the professional, personal, and scholastic standards for graduate study established by the Graduate Council.
7. Plan an official master's degree program which must be prepared in accordance with the requirements listed in the Graduate Bulletin current at the date of approval of the program by the Dean or Associate Dean of Graduate Studies.
When a department or school informs the Graduate Office of its intent to recommend the student for classified graduate standing and assigns a graduate adviser for the student, the student will be notified by the Graduate Office. The student will then arrange a conference with the assigned adviser to plan the official master's degree program. Upon receipt of the final departmental recommendation and the official program, the Graduate Office will notify the student that he has attained classified graduate standing.

Admission to the Graduate Division with classified graduate standing does not imply that the student will be advanced to candidacy for a graduate degree. If a student does not receive a satisfactory score on the Graduate Record Examination, or if he has earned less than a 2.5 grade point average in his undergraduate work, or if he does not meet the minimum requirements of a department or school, he may continue postgraduate work as an unclassified graduate for the purpose of removing deficiencies and otherwise demonstrating ability to succeed in a graduate degree curriculum.

If the student succeeds in removing the deficiencies and receives the recommendation of the department or school, he may reapply for classified graduate standing and admission to the Graduate Division.

**Advancement to Candidacy**

After satisfactory completion of a specified portion of an official program for such professional and personal standards as the Graduate Council may prescribe, a student is eligible for advancement to candidacy.

**WITHDRAWALS**

A graduate student who has been admitted to a graduate degree curriculum but has completed no courses at this college within the last calendar year is considered to have withdrawn from the curriculum. He must file a written application for readmission who withdraws from a graduate curriculum will be required to comply with 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.

**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 courses listed in the Graduate Bulletin as acceptable for master's degree programs.

**INCOMPLETE GRADE**

An incomplete grade is counted as units attempted with no grade points and remains on the student's permanent record as units attempted with no 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**

A graduate 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.

**SECOND MASTER'S DEGREE**

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 college and in this bulletin. All questions concerning graduate study at San Diego State should be referred to the Graduate Office.

All graduate students admitted to San Diego State after August, 1972, will be required to follow the procedures and regulations stated in the 1972-1973 editions of the General Catalog of this bulletin. A student who was admitted to a graduate degree curriculum at this college 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.

**NUMBERING OF COURSES**

Courses numbered 1 through 99 or by letters (A, B, C, etc.) are in the lower division (freshman and sophomore years); those numbered 100 through 199 are in the upper division (junior and senior years); and those numbered 200 through 299 are strictly graduate courses. Courses numbered 300 or over are professional education courses in the graduate credential program.

**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 used in reporting are as follows: Grade of A (outstanding achievement), 4 points; B (commendable), 3 points; C (satisfactory), 2 points; D (passing), 1 point; F (failure), 0 points; Inc (incomplete), counted as units attempted with no grade points; W (withdrawal), not counted in grade point average; WP (withdrawal failing), counted as failing in the grade point average; Cr (credit), signifying units earned, but not counted in the grade point average. The mark "Cr" is used to report the satisfactory completion of Courses 296, 297, 298, and 299. Letter grades A, B, C, or D, will not be given in these courses.

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.

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

If a student does not make up the incomplete, but instead re-enrolls in the course for credit, he has repeated the course for which he will receive the credit and grade points earned, subject to the regulations for repeating courses. The incomplete will remain on the student's permanent record as units attempted with no grade points earned and cannot thereafter be made up through removal of course deficiencies.
Students desiring to have their names listed on the June Commencement Program must have removed all incomplete grades received in courses listed on official degree programs before the deadline date listed in the Academic Calendar of this bulletin.

**UNCOMPLETED THESIS**

A student who registers for Course 299, Thesis, but does not complete the thesis by the end of the semester or summer session in which he registers for it will be required to re-register for the course if he wishes to complete the thesis not completed within the semester or term in which the student is registered for the course; the units will not be counted as units attempted; nor will credit be granted for the course under these conditions.

The student must register in Course 299, Thesis, in any semester or term in which he expects to use the facilities and resources of the college, and must be currently registered in the course when the completed thesis is approved in the term or term in which the course was approved for registration as published in the Academic Calendar.

**WITHDRAWALS**

**OFFICIAL WITHDRAWAL**

Any withdrawal from college or withdrawal from a class must be officially filed at the time of withdrawing unofficial withdrawal is made at the Registrar’s Office. Deadlines for filing may be obtained at that office. Leaves cannot be re-established by the student who wishes a leave for a total of one semester, nor to students who are completing their final semester of undergraduate work. A $20 application fee for readmission is required if the applicant was not regularly enrolled as a graduate student 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. Make check or money order payable to San Diego State College.

**READMISSION**

A graduate student may not repeat courses which have been taken as part of his official master’s degree program, except in the case of courses required as prerequisites for that program.

**PROBATION AND DISQUALIFICATION FOR SCHOLARSHIP**

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

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

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

A. Standards for Placing Graduate Students on Scholastic Probation

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

2. A graduate student who is on probation during a given semester will be continued on probation at the end of that semester if (a) his overall grade point average, including the semester in question, remains below 2.5 and (b) his grade point average on work taken during the semester is below 2.0 or above.

B. Standards for Removing Graduate Students from Scholastic Probation

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

C. Standards for Scholastic Disqualification of Graduate Students

A graduate student may be disqualified from the College for scholastic reasons at the end of any semester during which he is on probation if at the end of that semester (1) his overall grade point average, including the semester in question, is below 2.5 and (2) his grade point average for work taken during that semester is below 3.0.
SCHOLASTIC DISQUALIFICATION FROM THE GRADUATE DIVISION

Any graduate student who has been admitted to a graduate degree curriculum in the Graduate Division 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 in the Graduate Division and his official status will be changed from classified graduate standing to unclassified graduate standing.

PETITION FOR READMISSION

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

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 state college related:

(a) Cheating or plagiarism in connection with an academic program at a state college.
(b) Forgery, alteration or misuse of state college documents, records, or identification or knowingly furnishing false information to a state college.
(c) Misrepresentation of oneself or of an organization to be an agent of a state college.
(d) Obstruction or disruption on or off college property, or of the state college educational process, administrative process, or of any other college function.
(e) Physical abuse on or off college property of the person or property of any member of the college community or of members of his family or the threat of such physical abuse.
(f) Theft of, or non-accidental damage to, state college property; or property in the possession of, or owned by, a member of the college community.
(g) Unauthorized entry into, unauthorized use of, or misuse of state college property.
(h) On state college property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in dental care, or when lawfully prescribed pursuant to medical or instruction or analysis.
(i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on state college property or at a state college function without prior authorization of the state college president.
(j) Engaging in lewd, indecent, or obscene behavior on state college property or at a state college function.
(k) Abusive behavior directed toward a member of the college community.
(l) Violation of any order of a state college president, notice of which has 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 notice is not inconsistent with any of the other provisions of this section.
(m) Solicitation 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 additional tuition or fees shall be required of the student unless the student is suspended or expelled for the violation of the code on account of his suspension or expulsion. In the event that a student who has not reached his twenty-first birthday commits the violation, he shall immediately notify his parent or guardian of the action by registered mail to the last known address, return receipt and 41301.
OFFICIAL PROGRAMS OF STUDY

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

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

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

APPLICATION FOR GRADUATION

An application for graduation with an advanced degree must be filed in the Graduate Office well in advance of the date of graduation. Refer to the calendar preceding Part I of this Bulletin for deadline dates.

BASIC REQUIREMENTS FOR THE MASTER'S DEGREE

To receive the master's degree at San Diego State, 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 bulletin, Fields of Study and Courses of Instruction for the Master's Degree.

(A) ADVANCEMENT TO CANDIDACY:

A student who holds classified graduate standing in the Graduate Division at San Diego State 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 appropriate graduate adviser and the Dean of Graduate Studies. 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 listed on his official program with a minimum grade point average of 3.0 (B), six units of his official program if he is a graduate of San Diego State provided his undergraduate grade point average was at least 2.75; for the Master of City Planning degree, the student must have earned at least 24 units on his official program 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 on his official graduate program in the School of Social Work 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 in Paragraph (G) of 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 Graduate Office.

(B) EXAMINATIONS:

Prior to or during their first semester in residence, 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 Four, Fields of Study and Courses of Instruction 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.)

(C) 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.

If the foreign language required is other than the four named above, the student should make arrangements with his graduate adviser and the appropriate language department to take the locally administered written examination, a copy of which is to be filed in the Graduate Office.

The student is required to pass his foreign language examination before he can be advanced to candidacy.
(D) UNIT REQUIREMENTS:

Credit earned by correspondence or by examination is not acceptable on advanced degree requirements.

Master of Arts, Master of Science, and Master of Public Administration degrees:

Thirty units (36 units for the Master of Science in Counseling degree) of approved 100- or 200-numbered courses earned in graduate standing must be 200-numbered courses. Not more than a total of 6 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 6 units in courses numbered 297 and 298 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 200-numbered courses specified by the School of Business Administration at least 24 of which must be completed in residence. Not more than 6 units correspondence is unacceptable. Not more than a total of 6 units in Course 297, Research, and Course 298, Special Study, will be accepted for credit toward the degree.

Master of City Planning

Fifty-six units of approved 100- or 200-numbered courses earned in graduate standing at least 30 of which must be completed in residence. Courses required units for the degree. Credit earned by correspondence is unacceptable. Not more than a total of 9 units in courses 297 and 298 will be accepted for credit toward the degree.

Master of Social Work degree:

Fifty-six units of 200-numbered courses specified by the School of Social Work at least 24 of which must be completed in residence. Courses required units for the degree. Credit earned by correspondence is unacceptable. Not more than a total of 9 units in courses 297A, 297B, and 298 will be accepted for credit toward the degree.

(E) COURSE REQUIREMENTS:

In all master's degree curriculums offered at San Diego State, 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 foreign language requirement. The Graduate Office, in the best interests of the students concerned, may determine by examination the relevant material. With the approval of the appropriate graduate advisor, the Dean of Graduate Studies, a more recently completed course may be substituted for the outdated one, or substitute course work of equal unit value, not yet completed, may be assigned.

In the event that more than six units of course work become invalidated, an examination to determine whether the course may be accepted by comprehensive examination in the relevant material. With the approval of the appropriate graduate advisor, the Dean of Graduate Studies, a more recently completed course may be substituted for the outdated one, or substitute course work of equal unit value, not yet completed, may be assigned.

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.

A minimum of nine units of courses listed on the official program of study must be enrolled in and completed 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, and the Master of Social Work degrees must be enrolled in and completed after advancement to candidacy.

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

(F) THESIS:

Plan A, requiring a thesis, may be selected by a student seeking the master's degree. The department or school concerned approves the listing of Course 299, 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 Office. Registration in Course 299, 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 Office and have an officially appointed thesis or project committee. Theses or projects must be completed well in advance of the date of the convocation at which the degree is to be conferred. Refer to the calendar in Part I of this Bulletin for deadline dates.

The student must register in Course 299, Thesis, in any semester or term in which he expects to use the facilities and resources of the college, and must be currently registered in the course when the completed thesis is approved in the Graduate Office. (Refer also to the section on Uncompleted Theses in this bulletin.)

All theses or projects must be typed on special water-marked thesis paper available at the Aztec Shops. Instructions for typing, preparing maps and charts, binding, etc., are available at the Graduate Office.

Two of the three required copies of all master's theses or projects are accessioned by the Library of San Diego State and are subject to the regulations of the Library with respect to the circulation or duplication of its cataloged materials.

Students are advised to purchase a copy of the Manual of Instructions 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, be followed in certain graduate degree curricula as indicated in Part Four of this bulletin. Dates on which comprehensive examinations in lieu of these are given are determined by the department or school concerned. Results on comprehensive examinations must be reported to the Graduate Office by the department or school. Refer to the calendar in Part I of this Bulletin for deadline dates.

(G) GRADE POINT AVERAGES:

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

1. All programed 100-numbered courses required for the removal of undergraduate deficiencies.
2. All programed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer.
3. All 100-, 200-, or 300-numbered courses taken at San Diego State concurrently with or subsequently to the earliest course listed on the official master's degree program.

No transfer credit may be used to improve the grade point average of units completed at San Diego State.
(H) FINAL APPROVAL:
The student's official program of study as approved by the appropriate 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.

An application for graduation must be filed in the Graduate Office well in advance of the expected date of graduation to provide adequate time for official faculty vote of approval for graduation. Refer to the calendar preceding Part I of this Bulletin for deadline dates.

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

(J) DIPLOMA:
The appropriate diploma is ordered by the student from the Aztec Shops.

REQUIREMENTS FOR JOINT DOCTORAL DEGREES

CHEMISTRY
The requirements of the joint doctoral program leading to the Doctor of Philosophy degree in Chemistry offered by the University of California, San Diego, and San Diego State College may be found in Part Four of this bulletin under Chemistry.

ECOLOGY
The requirements of the joint doctoral program leading to the Doctor of Philosophy degree in Ecology offered by the University of California, Riverside, and San Diego State College may be found in Part Four of this bulletin under Biology.

GENETICS
The requirements of the joint doctoral program leading to the Doctor of Philosophy degree in Genetics offered by the University of California, Berkeley, and San Diego State College may be found in Part Four of this bulletin under Biology.

PART FOUR

FIELDS OF STUDY AND COURSES OF INSTRUCTION

This section contains the specific requirements for all graduate degrees authorized at San Diego State 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 bulletin. 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. Graduate level (200-numbered) courses carry course descriptions. Full descriptions for other courses may be found in the General Catalog. 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 any given 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 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 (200-numbered) courses require, as general prerequisites, graduate standing and competence in the specified field as indicated by a substantial amount of upper division study in the field or in a closely related field. Unless otherwise specified in the course description, graduate level courses are open to classified graduate students with the permission of the instructor. Unclassified graduate students must obtain the permission of the instructor and the Dean of Graduate Studies before they may enroll in a graduate level course. Undergraduate students are not permitted to enroll in 200-numbered courses except under special circumstances (see section "Concurrent Master's Degree Credit"). Unauthorized enrollment of undergraduate students in 200-numbered courses may be cancelled or, if the course is completed before graduate standing is attained, only undergraduate credit will be earned for the course.

Registration in Course 298, 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 299, Thesis. Clearance for registration in this course must be obtained by the student from the Graduate Office.

UNIT OR CREDIT HOUR

In the listing of courses that follow, figures in parentheses indicate the unit value of the course. One unit or credit hour represents 10 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

General Information

The Master of Arts degree in American Studies is an interdisciplinary degree administered by the American Studies Committee. 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 orienting, (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.

Admission to the Graduate Division

In addition to meeting the requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division, the student must present a Bachelor of Arts degree which included a minimum of 30 upper division units in American culture. 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 bulletin.

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 listed below as acceptable on master's degree programs, of which at least 18 units of American Culture, and at least two seminars. The program must include a concentration of at least 12 units in one of the following fields:

(a) American Literature and Philosophy
(b) American History
(c) Social Sciences and Education
(d) Fine Arts

The remaining units must be chosen from the other fields, with approval of the adviser. Students will be required to demonstrate a reading knowledge of a relevant foreign language, or complete six units in linguistics, chosen from American 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. A comprehensive, if required (Plan B).

All programs will be approved by the American Studies Committee.

Committee on American Studies

R. W. Redding, Chairman
G. F. Drake
R. J. Forey
Winifred H. Higgins
Karl Keller
O. E. Klapp
H. J. Lewin
H. C. McDean
F. S. Moramarco
Katherine M. Ragen
W. A. Schultz
Rose M. Somerville
R. G. Starr
Lowell Tozer
Pershing Vartanian

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN AMERICAN STUDIES

Upper Division Courses

(A) Literature and Philosophy:

130. Early American Literature (3)
131. The American Renaissance (3)
132. American Realism and Naturalism (3)
134. Modern American Fiction (3)
135. Modern American Poetry (3)
136. American Drama (3)
138. Topics in American Studies (3)
139. Topics in American Literature (3)
162. American English (3)
198. Comprehensive Reading and Survey (when content relates to American Studies) (3)
164. American Philosophy (3)

(B) History:

H171A-171B. Rise of the American Nation (3-3)
H172A-172B. Development of the Federal Union (3-3)
H173A-173B. Civil War and Reconstruction: The United States from Jackson to Grant (3-3)
H174. The Rise of Modern America, 1868-1900 (3)
H175A-175B. The United States, 1901-1945 (3-3)
H175C. The United States in the Nuclear Age (3)
H177A-177B. Constitutional History in the United States (3-3)
H178A-178B. The Development of American Capitalism (3-3)
H179A-179B. Intellectual History of the American People (3-3)
180. Selected Studies in History (when content relates to American Studies) (3)
181A-181B. Westward Movement (3-3)
183A-183B. Black American Civilization (3-3)

(C) Social Science and Education:

111A-111B. Economic History of the United States (3)
125. Money and Banking (3)
138. Urban and Regional Economics (3)
174. Economic Concentration and Monopoly Power (3)

(D) Fine Arts:

Art

157. History of American Art (3)
APPLICABLE GRADUATE COURSES

(A) Literature and Philosophy:

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

233. American Literature (3)
291. Seminar: A Major Author (3)
292. Seminar: A Cultural Period (3)
293. Seminar: A Literary Problem (3)
298. Special Study (1-3)

(B) American History:

History
241. Directed Reading in United States History (3)
251. Seminar in United States History (3)
298. Special Study (when content relates to American Studies) (1-3)

(C) Social Science and Education:

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

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

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

Political Science
215. Seminar in American National Government (3)

Education
202. Social Foundations (3)

(D) Fine Arts:

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

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

Music
252E. Seminar in Music History: American Music (3)

Speech Communication
280. Seminar in American Public Address, 1600-1850 (3)
281. Seminar in American Public Address, 1850 to Present (3)

ANTHROPOLOGY

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 bulletin 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 THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Anthropology must have completed at least 18 upper division units including the courses in physical anthropology, archaeology, ethnology, and social anthropology which are equivalent to those required for an undergraduate major in anthropology at San Diego State. The student must have an overall 3.0 grade point average (B) in undergraduate courses in anthropology or consent of the Department.

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this bulletin. In addition, the students must: (1) satisfactorily complete two of the four core seminars (201, 202, 203, and 204); (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 in 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 bulletin, the student must complete a graduate program of at least 30 units of which at least 24 units must be in 200-numbered courses in anthropology, to include:

a. Anthropology 201, 202, 203, and 204 (with an overall grade point average of 3.0 or better);
b. Six units of 200-numbered courses in anthropology;
c. Six additional units of elective 100- or 200-numbered courses in anthropology or related fields, as approved by the graduate adviser;
d. Anthropology 297, Research (3) (to be taken after advancement to candidacy);
e. Anthropology 299, 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.

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.
FACULTY

Chairman, Department of Anthropology: Mary E. Shutler, Ph.D.
Coordinator of Graduate Programs in Anthropology: L. L. Leach, Ph.D.
Graduate Advisers:
- Archaeology: Mary E. Shutler
- Physical Anthropology: Lois K. Lippold, Alexander Sonek, Jr.
- Ethnology: Victor Goldkind, J. A. Young
- Prehistory: A. J. Anderson, P. H. Ezeell
- Social Anthropology: P. J. Dubbs, R. S. Himes
- Ethnolinguistics: P. J. Greenfield

Professors: A. J. O. Anderson, Ph.D.; P. H. Ezeell, Ph.D.; Victor Goldkind, Ph.D.
Associate Professors: L. L. Leach, Ph.D.; Mary E. Shutler, Ph.D.; L. C. Watson, Ph.D.; D. D. Whitney, Ph.D.

PROGRAMS IN ANTHROPOLOGY

101. Human Paleontology (3)
115. Primatology (3)
121. Language in Culture (3)
124. Descriptive Linguistics (3)
143. Cultures of Europe (3)
149. Kinship and Social Organization (3)
150. Ethnological Field Methods (3)
151. Ethnographic Field Research Project (6)
153. Religion (3)
155. Peasant Society and Culture (3)
156. Culture Change and Processes (1)
157. Economic Anthropology (3)
159. Cultural Ecology (3)
160. Primitive Technology (3)
161. The California Indian (3)
162. Cultures of South America (3)
163. Contemporary Latin American Cultures (3)
164. Urban Anthropology (3)
165. Culture and Personality (3)
166. Ethnological Field Procedures in Culture and Personality (3)
170. Archaeology of North America (3)
171. Ethnology of North America (3)
172A. Southwestern Prehistory (3)

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

201. Seminar in Physical Anthropology (3)
Prerequisites: Anthropology 100A and 12 upper division units in anthropology.

202. Seminar in Archaeology (3)
Prerequisites: Anthropology 1 or 100A and 12 upper division units in anthropology.

203. Seminar in Ethnology (3)
Prerequisites: Anthropology 1 or 100B and 12 upper division units in anthropology.

204. Seminar in Linguistics (3)
Prerequisites: Anthropology 120 or 122 and 12 upper division units in anthropology.

212. Seminar in Regional Anthropology (3)
Prerequisites: 12 units of upper division credit in anthropology.

215. Seminar in Topical Anthropology (3)
Prerequisites: 12 units of upper division credit in anthropology.

218. Seminar in General Anthropology (3)
Prerequisites: Anthropology 120 or 122 and 12 upper division units in anthropology.

221. Seminar in Topical Anthropology (3)

222. Historical Linguistics (3)
Prerequisites: Anthropology 120 and 124.

225. Culture and Society in the Nahuatl Area (3)
Prerequisites: Anthropology 1 or 2 and 12 units of upper division credit in anthropology.

235. Culture and Society in the Nahuatl Area (3)
Prerequisites: Anthropology 1 or 2 and 12 units of upper division credit in anthropology.

250. Culture and Society in the Nahuatl Area (3)
Prerequisites: Anthropology 1 or 2 and 12 units of upper division credit in anthropology.

257. Classical Nahuatl (3)
Prerequisites: Anthropology 1 or 2 and 12 units of upper division credit in anthropology including Anthropology 157, or 180, or 181, reading knowledge of Spanish recommended.

Nahuatl language study and analysis for translation of 16th-17th century texts, use of ancient and modern grammatical works and vocabularies, reading of manuscripts; relationship of the language to appropriate aspects of Nahuatl culture.
228. Anthropology (3)
Prerequisite: 12 units of upper division credit in anthropology.
Analysis of recent literature, with evaluation oriented toward significance for research.

229. Asian Studies (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with Asia.

230. Art (3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

231. Art History (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with Asia.

232. Art History (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with Asia.

233. Art History (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with Asia.

234. Art History (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with Asia.

235. Art History (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with Asia.

236. South Asian Society (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with South Asia.

237. South Asian Society (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with South Asia.

238. Ethnoscience (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in social sciences dealing with South Asia.

239. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

240. Thesis (3)
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
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.

THESSES 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 catalogued and accessioned in the library; projects remain in the custody of the Department of Art.

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.

FACULTY

Chairman, Department of Art: P. A. Lingren, M.A.

Graduate Advisors: J. D. Swiggett (Coordinator); W. F. Bowne; J. H. Dirks; Winifred H. Higgins

CREDENTIAL ADVISER

As Chairman, the Department of Art: D. L. Wallace, D.Litt., Wiggerr, M.F.A.; JoAnn R. D. S. D. S. W. M. A.ingren, M.A.

In the custody of the Department of Art are the theses and projects of students. Application blanks are available to a limited number of candidates for the degree in Art over the field of the thesis or project.

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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.
217A·217B. Sculpture (1-3)
Prerequisites: Art 117A, 117B, 117C, 117D.
Aesthetic organization of selected subject matter in the media of sculpture. Maximum credit six units applicable on a master's degree.

219A·219B. Crafts (1-3)
Prerequisites: Six units completed in upper division courses in sculpture or ceramics or printmaking or a combination of these courses. Advanced creative work in selected craft media. Maximum credit six units applicable on a master's degree.

221. Advanced Clay and Glaze Technology in Ceramic Design (3)
Six hours.
Prerequisite: Art 119B.
Experimentation with the use of ceramic materials and techniques as an integral part of the design process. Maximum credit six units applicable on a master's degree.

222. Art Education Colloquium (3)
Prerequisite: Minimum of 15 units of upper division art. Historic and current art education philosophies.

270. Seminar in Jewelry and Metalwork (3)
Prerequisite: Art 170A.
Problems in the design and execution of works in precious metals. Projects will be determined by the individual student in conference with the instructor. Maximum credit six units applicable on a master's degree.

280. Seminar in Textile Design (3)
Prerequisite: Art 180A.
Problems in textile design and technology. Projects will be determined by the individual student in consultation with the instructor. Maximum credit six units applicable on a master's degree.

290. Bibliography and Research Methods (2)
Introduction to research methods and materials, compiling of a specialized bibliography, preparatory to writing a master's thesis.

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

292A. Seminar in Ancient Art (3)
Prerequisites: Art 50A and 50B.
Studies in problems of the development of art styles or important artists within broad limits of ancient art.

292B. Seminar in Medieval Art (3)
Prerequisites: Art 50A and 50B.
Studies in problems of the development of art styles or important artists within broad limits of medieval art.

292C. Seminar in Renaissance Art (3)
Prerequisites: Art 50A and 50B.
Studies in problems of the development of art styles or important artists within broad limits of renaissance art.

292D. Seminar in Baroque and Rococo Art (3)
Prerequisites: Art 50A and 50B.
Studies in problems of the development of art styles or important artists within broad limits of baroque and rococo art.

292E. Seminar in Modern Art (3)
Prerequisites: Art 50A, 50B, 156A.
Studies in problems of the development of art styles or important artists within broad limits of modern art.

292F. Seminar in Primitive Art (3)
Prerequisite: Art 158.
Studies in problems of the development of art styles or important artists within broad limits of primitive art.

294A-294B. Seminar in the Principles of Design in the Space Arts (3-3)
Prerequisite: A semester course in art appreciation.
An intensive study of the activity of creative expression and aesthetic appreciation in the areas of visual experience. The aesthetic analysis of original works of art.

295. Creative Environmental Design (1-3)
Prerequisite: Six units of upper division work in interior design, architecture or city planning.
Creative work in interior design, architecture and civic design. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisite: Consent of the staff; to be arranged with department chairman and the instructor.

299. Thesis or Project (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
ASIAN STUDIES

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, 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 culture, societies, people, and social forces at work in the Asian/Pacific world.

ADMISSION TO THE GRADUATE DIVISION

In addition to meeting the requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin, 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 bulletin. 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.

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 listed below as acceptable on master's degree programs 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.

### Upper Division Courses

<table>
<thead>
<tr>
<th>Department</th>
<th>Courses</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>200-numbered Courses</td>
<td>6 units</td>
</tr>
<tr>
<td>B</td>
<td>Upper Division Courses</td>
<td>6 units</td>
</tr>
<tr>
<td>C</td>
<td>200-numbered Courses</td>
<td>3 units</td>
</tr>
</tbody>
</table>

The remaining 6 of the total of 30 units will be elective, selected from the above or other relevant departments, as approved by the Graduate Committee. The student may elect Plan A (with thesis) or Plan B (comprehensive examinations) 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.

MEMBERS OF THE CENTER FOR ASIAN STUDIES

<table>
<thead>
<tr>
<th>Alvin D. Coox, Director</th>
<th>Hans Neyendorf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allan W. Anderson</td>
<td>Rizalino Odes</td>
</tr>
<tr>
<td>Paochun Chu</td>
<td>Larry J. Shaw</td>
</tr>
<tr>
<td>Thomas R. Cox</td>
<td>Ray E. Smith, Jr.</td>
</tr>
<tr>
<td>David D. DuFauld</td>
<td>Alexander L. Sibbich</td>
</tr>
<tr>
<td>Richard R. Gripp</td>
<td>Philip S. Stanford</td>
</tr>
<tr>
<td>Ronald Himes</td>
<td>Yoshio Tanaka</td>
</tr>
<tr>
<td>G. Ray Jordan</td>
<td>Robert D. Wallace</td>
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<tr>
<td>Tae Jin Kahng</td>
<td>Daniel D. Whitney</td>
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<tr>
<td>Elmira A. Keen</td>
<td>Cathy Woo</td>
</tr>
<tr>
<td>Martha Longenecker</td>
<td>Charles G. Yahr</td>
</tr>
<tr>
<td>Murugappa C. Madhuvan</td>
<td>John Young</td>
</tr>
<tr>
<td>Dan D. McLeod</td>
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</tr>
<tr>
<td>John E. Merrill</td>
<td></td>
</tr>
</tbody>
</table>

GRADUATE COMMITTEE

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

Graduate Advisers:

- Paochun Chu, History (East Asia)
- Tae Jin Kahng, Political Science (East Asia)
- Elmira A. Keen, Geography (East Asia)
- Daniel D. Whitney, Anthropology (East Asia)

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

COURSES ACCEPTABLE ON MASTER'S DEGREE

Programs in Asian Studies

### Upper Division Courses

<table>
<thead>
<tr>
<th>Anthropology</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>175. Cultures of Southeast Asia (3)</td>
<td>180. Selected Studies in History (3)</td>
</tr>
<tr>
<td>180. Cultures of India (3)</td>
<td>190A-190B. Southeast Asia (3-3)</td>
</tr>
<tr>
<td>193. China in Modern Times (3)</td>
<td>193. Japan in Modern Times (3)*</td>
</tr>
<tr>
<td>194. Japanese Civilization (3)*</td>
<td>195. Rise of Japan as a Modern State (3)*</td>
</tr>
<tr>
<td>196A-196B. The Far East (3-3)</td>
<td>196A-196B. The Indian Subcontinent (1-1)</td>
</tr>
<tr>
<td>197A-197B. Intellectual History of Modern Asia (3-3)*</td>
<td>197A-197B. Intellectual History of Modern Asia (3-3)*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comparative Literature</th>
<th>Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>152A. The Art of India and Southeast Asia (3)</td>
<td>135. Philosophy of Religion (3)*</td>
</tr>
<tr>
<td>152A-152B. World Drama (3-3)</td>
<td>175. A Major Philosopher (3)*</td>
</tr>
<tr>
<td>170. Studies in Modern Oriental Literature (3)</td>
<td>Political Science</td>
</tr>
<tr>
<td>102. Comparative Economic Systems (3)</td>
<td>183. Governments and Politics of South and Southeast Asia (3)</td>
</tr>
<tr>
<td>115. Economic Problems of South and East Asia (3)</td>
<td>187. Governments and Politics of the Far East (3)</td>
</tr>
<tr>
<td>Geography</td>
<td>191. Governments and Politics of the Developing Areas (3)</td>
</tr>
<tr>
<td>131. Eastern Asia (3)*</td>
<td>Religious Studies</td>
</tr>
<tr>
<td>133. Southeastern Asia (3)</td>
<td>121A-121B. Oriental Religions (3-3)</td>
</tr>
<tr>
<td>134. Southern Asia (3)</td>
<td>Second Semester *</td>
</tr>
<tr>
<td>150. Political Geography (3)</td>
<td>* Course always applicable toward the minimum of 18 units of East Asian emphasis required for the master's degree program.</td>
</tr>
<tr>
<td></td>
<td>† Acceptable when other courses are taken.</td>
</tr>
</tbody>
</table>

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### APPLICABLE GRADUATE COURSES

<table>
<thead>
<tr>
<th>Anthropology</th>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>200. Seminar (3)</td>
<td>210. History of Geography (3)</td>
</tr>
<tr>
<td>220. Seminar in Regional Anthropology (3)</td>
<td>220. Seminar in Regional Geography (3)</td>
</tr>
<tr>
<td>222. Historical Linguistics (3)</td>
<td>250. Seminar in Systematic Geography (3)</td>
</tr>
<tr>
<td>233. Social Structure (3)</td>
<td>235. Seminar in Philosophy of Art (3)</td>
</tr>
<tr>
<td>286. South Asian Society (3)</td>
<td>250. Seminar in Systematic Geography (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Art</th>
<th>Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>206A-206B. Printmaking (1-3)</td>
<td>235. Seminar in Philosophy of Religion (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Administration</th>
<th>Political Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>206A. Organization Theory (3)</td>
<td>270. Seminar in International Relations (3)</td>
</tr>
<tr>
<td>206B. Behavior in Organizations (3)</td>
<td>275. Seminar in Theories of International Relations (3)</td>
</tr>
<tr>
<td>228. Seminar in International Finance (3)</td>
<td>280. Seminar in General Comparative Political Systems (3)</td>
</tr>
<tr>
<td>252. Marketing Institutions (3)</td>
<td>282. Seminar in the Political Systems of the Developing Nations (3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economics</th>
<th>Sociology</th>
</tr>
</thead>
<tbody>
<tr>
<td>292. Seminar in International Economics (3)</td>
<td>275. Directed Readings in Population and Demography (3)</td>
</tr>
<tr>
<td>295. Seminar in the Economics of Underdeveloped Countries (1)</td>
<td>275. Directed Readings in Population and Demography (3)</td>
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<table>
<thead>
<tr>
<th>Education</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>204. Comparative Education (3)</td>
<td>295. Seminar in Linguistics (3)</td>
</tr>
</tbody>
</table>

All 297 (Research) and 298 (Special Study) courses in named departments, when student electing Plan A will complete the 299 (Thesis) course in the department. Refer to graduate course descriptions in the sections of this bulletin 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.

### ASTRONOMY

#### 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 by a fifth year of more advanced study in the field of astronomy and the associated fields of mathematics and physics. San Diego State University has a telescope with a photometer and digital readout, a 24-inch reflecting telescope, two 16-inch reflecting telescopes, an 8-inch photographic refractor, and several other telescopes, ranging from 6- to 12-inch in aperture. Research is centered around photometric work, and research projects are being carried out in the areas of eclipsing binaries. A modern photometric photometer with both UBV and narrow band filters is attached to each of the 16-inch and the 24-inch telescopes, and a regular schedule of nightly observations is in operation. Also, an IBM 360-40 electronic computer is available. San Diego State is fortunate in its location in that it is within 100 miles of the Mount Wilson and Palomar Observatories and about 300 miles from the Kitt Peak National Observatory.

An off-campus observing site, approximately 40 miles east of the campus at an elevation of 6,000 feet, has been acquired. A 16-inch Boller and Chivens reflecting telescope with photometer and digital readout is in operation. A 24-inch telescope with photometer, digital readout, and spectograph is also in operation.

#### ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. 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. Students transferring to San Diego State must submit two letters of recommendation to the Department of Astronomy.

#### ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as specified in Part Three of this bulletin. 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 bulletin, the student must also meet the following departmental requirements in his 30 unit program:

(a) Complete at least 15 units of 200-numbered courses in astronomy not including 299.

(b) Complete at least nine units of graduate level or approved upper division courses in astronomy or related fields as approved by his departmental committee.

(c) If a student elects Plan A, he must enroll in Astronomy 299, 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.

(d) Complete 6 units of electives selected with approval of the adviser.

(e) A reading knowledge of scientific French, German, or Russian is highly recommended.
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 of Astronomy.

FACULTY

Chairman, Department of Astronomy: Burt Nelson, Ph.D.
Graduate Adviser: J. D. Schopp, Ph.D.
Professors: Burt Nelson, Ph.D.; J. D. Schopp, Ph.D.
Associate Professors: C. T. Daub, Ph.D.; Arthur Young, Ph.D.
Assistant Professors: R. J. Angione, Ph.D.; F. D. Talbert, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE

PROGRAMS IN ASTRONOMY

UPPER DIVISION COURSES

150. Introduction to Variable Stars and Peculiar Stars (3)
170. Astrophysical Spectroscopy (3)
180. Celestial Mechanics (3)
196. Advanced Topics in Astronomy (2-3)

GRADUATE COURSES

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

210. Binary Stars (3)
Prerequisite: Astronomy 112B.
An intensive study of visual, spectroscopic, and eclipsing binaries, including the determination of orbits.

220. Galactic Structures (3)
Prerequisite: Astronomy 112B.
Types, movements and characteristics of stars in the galaxy and a similar study of extragalactic structure.

225. Extragalactic Structure (3)
Prerequisite: Astronomy 112B.
The individual and collective properties of normal and peculiar galaxies. Topics include classification, spectra, masses, luminosity distributions, distance indicators, clustering, and redshifts.

230. Stellar Interiors (3)
Prerequisite: Astronomy 112B.
Structure of the interior of stars including the details of the reactions by which energy is obtained and the evolution of stars.

240. Interstellar Matter (3)
Prerequisites: Mathematics 119, Astronomy 112B.
Interstellar absorption and polarization, theory of interstellar grains, physics of a low density gas in a dilute radiation field, nebulae, interstellar absorption lines, dynamics of the interstellar medium, and radio observations of the interstellar medium.

250. Stellar Atmospheres (3)
Prerequisites: Astronomy 112A, Physics 101 and 112.
Emission and absorption of radiation, continuous spectra, spectral lines, modal stellar atmosphere calculations, and non-L.T.E. problems.

280. Orbit Theory and Computation (3)
Prerequisite: Astronomy 180.
A study of the derivation of the methods of determining orbits of comets, asteroids, and planets. The computation of an orbit will be required.

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

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

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

GENERAL INFORMATION

The Ecology Program Area in Biological Sciences at San Diego State, and the College of Biological and Agricultural Sciences at the University of California, Riverside, offer a joint doctoral program leading to the degree of Doctor of Philosophy in Ecology. The Genetics Group in Biological Sciences at San Diego State and the Genetics Group, University of California, Berkeley, offer a joint doctoral program leading to the degree of Doctor of Philosophy in Genetics.

The Departments of Biology, Botany, Microbiology and Zoology, in the College of Sciences, offer graduate study leading to the degrees of Master of Arts in Biology and Master of Science in Biology. For the degree Master of Science in Microbiology see the Microbiology section in this Bulletin.

SECTION I. MASTER'S DEGREE PROGRAMS

The Master of Arts degree is considered to be essentially an academic degree so desires. The Master of Science degree is an applied or technical degree. Concentrations for either of these degrees must be completed in one of the following Program Areas:

- Biology: Ecology; Genetics and Developmental Biology; and Physiology
- Botany
- Microbiology: Microbiology
- Zoology: Invertebrate Zoology; Vertebrate Zoology

A new Life Science building provides increased facilities for graduate study in the biological sciences. Additional facilities available in the community include the Game Commission, and the Alvarado Filtration Plant of the City of San Diego. Temecula, Riverside County, has acquired a research center on a 3,000 acre area in a field station at Camp Minnewawa near Dulzura.

ADMISSION TO THE GRADUATE DIVISION

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

(a) meet the requirements of an undergraduate major in a biological sciences department at San Diego State in which graduate work is contemplated.
(b) have a grade point average of 2.75 or better on work taken for the bachelor's degree.
(c) have a grade point average of 3.0 or better in upper division courses (at least 24 units) in the biological sciences.
(d) have a score of 1100 or better on the Graduate Record Examination Aptitude Test.
(e) 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.
(f) be considered as capable of graduate work in the biological sciences by two references submitted to the Biology Coordinator of Master's Degree Programs.
(g) be accepted by a Program Area and be sponsored by a faculty member of the area.

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 bulletin.

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 bulletin, 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 200-numbered courses in the biological sciences, including course 299, Thesis. 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 bulletin, 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 200-numbered courses in the biological sciences, including course 299, Thesis. A maximum of 15 units of the required thirty 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 implications in the broad fields of biology is also required.

SECTION II. JOINT DOCTORAL PROGRAMS

ECOLOGY

Graduate studies for the joint Doctor of Philosophy degree in Ecology are oriented toward the development of the capacity for independent, imaginative, and self-critical research and toward excellence and enthusiasm in teaching. By common agreement of the two groups in the joint program, much reliance is to be placed on informal instruction through increasing close association of the student with the faculty, and through regular seminars. After developing an adequate background and becoming familiar with the research activities of the faculties, the student will begin research on a problem of his choice, generally in the second year.

UNDERGRADUATE PREPARATION

Normally, a bachelor's degree from an accredited institution with a major in the biological sciences is required for admission to the joint doctoral program in ecology. 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.

ADMISSION TO THE GRADUATE DIVISIONS

All applicants for admission to the joint doctoral program in ecology must be admitted both to graduate standing in the Graduate Division, University of California, Riverside, and to classified graduate standing in the Graduate Division, San Diego State. In seeking admission to the two Graduate Divisions, the applicant must pay all fees required by each institution and comply with the admission procedures as stated in the Announcement of the Graduate Division, University of California, Riverside, and the Graduate Division Bulletin, San Diego State.

ADMISSION TO THE PROGRAM

In addition to attaining formal admission to the two Graduate Divisions with the appropriate graduate standing, the student must declare his intention to seek the doctoral degree in the joint doctoral program. The joint doctoral program may be approved and signed by the Graduate Adviser on each campus, and the Graduate Deans for formal certification of admission may be accepted by the Graduate Deans of each of the two Graduate Divisions.
For new students not already enrolled at either campus, the application to enter the joint doctoral program may be filed simultaneously with the applications for admission to graduate standing on the two campuses.

**GRADUATE ADVISERS**

After admission to the joint doctoral program in ecology, the student will consult with the Graduate Adviser on the campus where he wishes to conduct the major portion of his work. The Graduate Adviser makes a preliminary assessment of the student's undergraduate preparation in terms of his research interests and helps to plan the beginning student's program and appoints the Advisory Committee of the student.

**ADVISORY COMMITTEE**

The Advisory Committee, consisting of at least three faculty members representing both cooperating campuses, will develop a study plan in consultation with the student in accordance with the procedures of the ecology groups. Progress of students in the joint doctoral program will be reviewed by the Advisory Committee.

The Advisory Committee will provide a source of consultation for the student and will conduct an evaluating interview near the end of his first year of graduate work.

When the requirements of both ecology groups have been satisfied, and in the judgment of the Advisory Committee, the student is prepared for the Qualifying Examination, the Chairman of the Advisory Committee will notify the Graduate Advisers that the student is ready to proceed and will request the appointment of the Joint Qualifying Committee to conduct the qualifying examination.

**FOREIGN LANGUAGE REQUIREMENTS**

All candidates for the degree of Doctor of Philosophy in Ecology must demonstrate, before being advanced to candidacy, a reading knowledge of at least one foreign language as determined by the Department of Biology, University of California, Riverside, and described in its current announcement on the program for the degree of Doctor of Philosophy.

**RESIDENCY REQUIREMENTS**

After formal admission to the joint doctoral program in ecology, the student must spend at least one year in full-time residence on either of the two campuses. 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.

**JOINT QUALIFYING COMMITTEE**

A Joint Qualifying Committee of five members, composed of at least two faculty members representing each of the cooperating institutions, will be nominated by the Graduate Advisers and appointed for each student by the Graduate Councils in accordance with established regulations of the University of California, Riverside. The Chairman of the Joint Qualifying Committee must be a member of the ecology group at either campus. The Committee will report the results of the qualifying examination to the Graduate Deans.

**ADVANCEMENT TO CANDIDACY**

A student who satisfies the foreign language requirement, and passes the qualifying examination, must make application for advancement to candidacy by the Graduate Deans of the University of California, Riverside, and after approval by both the Graduate Dean, University of California, Riverside, and also by the Graduate Deans of both campuses, the student will be notified of his advancement to candidacy by the Graduate Dean, University of California, Riverside.

**JOINT DISSERTATION COMMITTEE**

After a student becomes a candidate, a Joint Dissertation Committee of at least three faculty members will be nominated by the Graduate Councils of the cooperating institutions. This committee consists of an appropriate number of faculty members from each cooperating institution. The Chairman of the Joint Dissertation Committee must be the Graduate Adviser.

**DISSERTATION**

A dissertation on a subject chosen by the candidate and approved by his Joint Dissertation Committee bearing on his field of specialization is required of every candidate. Approval of the completed dissertation by the Joint Dissertation Committee implies that an organized investigation, adding something of interest to the body of knowledge and understanding in a particular field, has been carried out and reported in a manner demonstrating the ability of the candidate to prosecute and report independent investigation effectively.

The requirements for completing and filing the dissertation, including the number of copies required, will be decided jointly by the Graduate Deans. Requirements for microfilming, and such others as may be decided by the Graduate Councils, San Diego State.

**AWARD OF DEGREE**

The degree of Doctor of Philosophy in Ecology will be awarded jointly by the Regents of the University of California and the Trustees of the California State Colleges in the names of the University of California, Riverside, and San Diego State College.

**PROCEDURES**

Other than satisfying the residence requirements, the time required for a student to complete the requirements for the joint doctorate is not expressed in terms of units of credit but will ultimately depend upon the mastery of the subject matter field and the completion of a satisfactory dissertation. A student with an appropriate bachelor's degree will normally spend at least three years, full time, to earn the Doctor of Philosophy degree.

The official records of all students who have formally been admitted to the joint doctoral program in ecology will be maintained by the Registrar, University of California, Riverside, and complete copies of these records will be on file in the Graduate Office, San Diego State. Transcripts of record will be issued by the Graduate Dean, University of California, Riverside, upon request.

A student in residence on one of the two campuses may register for not more than one course at the other institution. Information on fees and other details of registration, particularly in the case of concurrent course work on the two campuses, may be obtained from the Graduate Deans.

All student petitions must be addressed to the two Graduate Deans jointly. Courses taken by students who have been formally admitted to the joint doctoral program at either institution, and the grades obtained, will be reported to the appropriate Graduate Councils of the participating institutions.

A student in residence on one of the two campuses will be subject to all rules and regulations governing graduate students in the Graduate Division at the cooperating institutions.

Applications for graduation must be filed in accordance with the regulations of the participating institutions.

**STAFF**

Faculty members of the staff in ecology of the cooperating institutions who will act as principals in the joint doctoral program in ecology are as follows:

**University of California, Riverside**

Graduate Adviser: Kenneth W. Cooper

**San Diego State**

Graduate Adviser: Boyd D. Collier
GENETICS

Graduate studies for the joint Doctor of Philosophy degree in Genetics should be oriented toward the development of the student's capacity for independent, imaginative, and self-critical research and toward excellence and enthusiasm in teaching. By common agreement of the two Genetics Groups in the joint program, much reliance is to be placed on informal instruction through increasing close association of the student with the faculty, and through regular seminars. After developing an adequate background, and becoming familiar with the research activities of the faculty, the student will do research on a problem of his choice, generally starting in the second year.

Both San Diego State 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, physiological and developmental genetics, fields of genetics, behavior genetics, and Berkeley, the human genetics, and cytogenetics.

UNDERGRADUATE PREPARATION

An undergraduate major in genetics or its equivalent in biological sciences can be considered as standard preparation, although completion of additional courses in mathematics and statistics, language, physical chemistry and biochemistry, and related fields, are helpful and will often reduce the time required for the degree program in genetics. Students in the joint doctoral program in genetics will follow the following schedule:

ADMISSION TO THE GRADUATE DIVISIONS

An applicant for admission to the joint doctoral program must first be admitted to regular graduate standing in the Graduate Division of the University of California, San Diego, and to classified graduate standing in the Graduate Division of the Graduate School of the University of California, Berkeley. Both the required and the additional courses required by each institution and comply with the admission procedures stated in this bulletin and in the current edition of the Bulletin of Graduate Studies, University of California, Berkeley.

ADMISSION TO THE PROGRAM

After a student has been formally admitted to the two Graduate Divisions with appropriate graduate standing, he must declare his intention to enter the joint doctoral program by filing an application with the Graduate Adviser. The application must be approved by his Joint Thesis Committee, and the Graduate Adviser on each campus, and the Graduate Adviser must certify to the Graduate Deans of the University of California, San Diego, and University of California, Berkeley, that the student is ready to proceed and will spend at least one year in full-time residence on each of the two campuses.

Graduate Advisers

After admission to the joint doctoral degree program, the student will consult with the Graduate Adviser of the Genetics Group on the campus where he wishes to reside and the major portion of his work. The Graduate Adviser makes a preliminary assessment of the student's undergraduate preparation in terms of his research interests and helps to plan the beginning student's program.

EXECUTIVE COMMITTEE

During his first quarter or semester the student will be interviewed by the Executive Committee of the Genetics Group on the campus of residence. The Executive Committee will further assess the student's preparation and capabilities, and will appoint an advisory committee for the student.

ADVISORY COMMITTEE

The Advisory Committee will develop a study plan in consultation with the student in accordance with the procedures of the Genetics Group at the University of California, Berkeley. Reports on the progress of students in the joint doctoral program will be made to and reviewed by the graduate authorities at appropriate intervals.

The Advisory Committee will provide a source of consultation for the student and will conduct an evaluating interview near the end of his first year of graduate work.

When the requirements of both Genetics Groups have been satisfied, and in the judgment of the Advisory Committee the student is ready to proceed and will spend at least one year in full-time residence on each of the two campuses, the student must be recommended by the Graduate Dean of the University of California, Berkeley, At San Diego State, 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 joint doctoral degree in genetics may be required by their advisory committees to demonstrate a reading knowledge of a foreign language. Foreign language preparation will usually be required only for students whose choice of research necessitates extensive reading of foreign language papers.

RESIDENCY REQUIREMENTS

After formal admission to the joint doctoral program in genetics, 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 at San Diego State and the University of California, Berkeley. At San Diego State, 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.

JOINT QUALIFYING COMMITTEE

A Joint Qualifying Committee of five members, composed of an appropriate number of faculty members from each of the cooperating institutions, will be nominated by the Graduate Advisers and appointed for each student by the Graduate Councils jointly. The Joint Qualifying Committee will conduct an oral qualifying examination, consisting of questions in five fields, as described in the program for the Doctor of Philosophy degree in Genetics at University of California, Berkeley. The chairman of the Joint Qualifying Committee must be a member of the Genetics Group at either campus. The committee will report the results of the Qualifying Examination to both Graduate Deans.

ADVANCEMENT TO CANDIDACY

A student who passes the Qualifying Examination must make application to the Graduate Dean, University of California, Berkeley, for advancement to candidacy. Upon payment of the candidacy fee to the University of California, Berkeley, and after approval by the Graduate Deans, the student will be notified of his advancement to candidacy by the Graduate Dean, University of California, Berkeley.

JOINT THESIS COMMITTEE

After a student becomes a candidate, a Joint Thesis Committee of three members is nominated by the Graduate Advisers and appointed jointly by the Graduate Councils. This committee is to be composed of an appropriate number of faculty members from each cooperating institution. One member of the Joint Thesis Committee must be a member of the Genetics Group at either campus. The chairman of the Joint Thesis Committee must be a member of the Genetics Group at either campus.

THESIS

A thesis on a subject chosen by the candidate and approved by his Joint Thesis Committee bearing on his field of specialization is required of every candidate. Approval of the completed thesis of the Joint Thesis Committee implies that an
organized investigation, adding something of interest to the body of knowledge and understanding in a particular field, has been carried out and reported in a manner demonstrating the ability of the candidate to prosecute and report independent investigation effectively.

The requirements for completing and filing the thesis, including the number of copies required, will be decided jointly by the Graduate Deans. Requirements currently in force at the University of California, Berkeley, must be met, and such others as may be decided by the Graduate Council, San Diego State.

AWARD OF DEGREE

The degree of Doctor of Philosophy in Genetics will be awarded jointly by the Regents of the University of California and the Trustees of the California State Colleges in the names of the University of California, Berkeley, and San Diego State College.

PROCEDURES

Other than satisfying the residence requirements, the time required for a student to complete the requirements for the joint doctoral degree is not expressed in terms of units of credit but will ultimately depend upon the time required for the completion of a satisfactory thesis. A student with an acceptable Doctor of Philosophy degree.

The official records of all students who have formally been admitted to the joint doctoral program will be maintained by the Registrar, University of California, Berkeley, and the Registrar, San Diego State. Each Registrar will maintain only the academic record of a student for the sessions the student has registered and paid fees on his campus. The academic program as shown on the record will include courses of a dual program, but not of the other campus.

Each registrar is responsible for issuing transcripts only of that portion of the work completed while registered at his institution. The transcript will show by that campus. A student in residence on one of the two campuses may register for not more than one course at the other campus. Information on fees and other details of registration may be obtained from the Graduate Deans. Courses taken by students who have been formally admitted to the joint doctoral program at either institution and the grades obtained, will be reported to the Registrar of the other institution.

A student in residence on one of the two campuses will be subject to all rules and regulations governing graduate students in the Graduate Division at that institution unless they are contrary to the provisions of this joint doctoral program. All inquiries concerning the operation of the joint doctoral program should be directed to the Graduate Dean at either of the two campuses.

STAFF

The following faculty members of the Genetics Groups of the cooperating institutions will act as principals in the joint doctoral program, being available for direction of research and as members of Joint Doctoral Committees.

University of California, Berkeley:
Graduate Advisers: James Fristrom, Alec D. Keith
Principals: Spencer W. Brown, Donald R. Cameron, Seymour Fogel, James Fristrom, Alec D. Keith, I. Michael Lerner, William J. Libby, Jr., Patricia St. Lawrence, Philip Spieth

San Diego State:
Graduate Adviser: William P. Diehl

ASSISTANTS

Graduate teaching assistantships and graduate non-teaching 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.

FACULTY

Chairman, Department of Biology: W. E. Hazen, Ph.D.
Chairman, Department of Botany: H. L. Wedberg, Ph.D.
Chairman, Department of Microbiology: H. A. Walsh, Ph.D.
Chairman, Department of Zoology: R. E. Carpenter, Ph.D.
Graduate Coordinator, Ecology: G. W. Cox, Ph.D.
Graduate Coordinator, Genetics: Adela S. Baez, Ph.D.
Graduate Coordinator, Microbiology: Beatrice L. Kelly
Coordinator, Master’s Degree Programs: R. F. Ford, Ph.D.
Graduate Departmental Advisers for General Counseling:
Biology: P. H. Zedler
Genetics and Developmental Biology: Richard F. Ford
Physiology: Mary E. Clark
Botany: J. V. Alexander
Zoology: Deborah M. Dexter
Vertebrate Zoology: R. E. Carpenter
Credential Adviser: G. P. Sanders


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

UPPER DIVISION COURSES

**Biology**

101. Cellular Physiology (4)
103. General Zoology (4)
109. Regional Field Studies in Biology (1-3)
110. Ecology (4)
111. Aquatic Biology (4)
112. Fisheries Biology (3)
113. Biological Oceanography (4)
114. Advanced Ecology (3)
121. Systems Ecology (1)
122. Environmental Measurement (3)
123. Simulation of Ecological Systems (4)

142A-142B. Comparative Animal Physiology (4-4)
144. Comparative Endocrinology (3)
144L. Comparative Endocrinology Laboratory (2)
148. Photophysics (1)
148L. Photophysics Laboratory (1)
150. Radiation Biology (3)
150L. Radiation Biology Laboratory (2)
151. Radiotracer Techniques in Biology (3)
155. Genetics (4)
156. Developmental Biology (4)
157. Cytogenetics (4)
158. Human Genetics (4)
160. Experimental Evolution (3)
161. History of Biology (3)
162. Source Material in the History of Biology (3)
163. Microbial Genetics (4)
164. Population Genetics (3)
165. Mutation (3)
175. Statistical Methods in Biology (3)
181. Advanced Cellular Physiology (3)
182. Immunology (3)
182L. Immunology Laboratory (1)

**Microbiology**

101. General Microbiology (4)
102. Pathogenic Bacteriology (4)
103. Fundamentals of Immunology and Serology (4)
104. Medical Mycology (4)
105. Microbial Physiology (4)
107. General Virology (2)
108. General Virology Laboratory (2)
109. Hematology (4)
110A-111B. Epidemiology (2-2)
114. Bacterial and Viral Genetics (2)
114L. Bacterial and Viral Genetics Laboratory (2)
115. Advanced General Microbiology (4)
116. Marine Microbiology (4)
120. Animal Viruses (4)
130. Experimental Immunology (4)
140. History of Microbiology (2)
180. Electron Microscopy (4)

**Zoology**

102. Invertebrate Embryology (3)
103. Embryology (4)
106. Comparative Anatomy of the Vertebrates (4)
108. Histology (4)
112. Marine Invertebrates Zoology (4)
115. Ichthyology (4)
116. Herpetology (4)
117. Ornithology (4)
118. Mammalogy (4)
121. General Entomology (4)
122. Special Topics in Entomology (3)
123. Immature Insects (3)
124. Insect Ecology (4)
125. Economic Entomology (4)
126. Medical Entomology (3)
127. Principles of Pest Management (3)
128. Parasitology (4)
130. Advanced Invertebrate Zoology (3)
140. Physiological Zoology (4)
145A-B. Experimental Animal Surgery (2-2)
155. Principles of Taxonomy, Systematics and Phylogeny (4)
160. Vertebrate Paleontology (4)
170. Animal Behavior (4)
172. Neurobiology (4)

**Botany**

100. General Botany (4)
101. Physiology (4)
103. Mycology (4)
105. Vascular Plants (4)
112. Cultivated Trees and Shrubs (3)
114. Systematic Botany (4)
126. Plant Pathology (4)
130. Plant Physiology (4)
131. Plant Metabolism (3)
133. Experimental Plant Metabolism (3)
140. Plant Anatomy (4)
162. Agricultural Botany (2)
172. Palynology (3)

GRADUATE COURSES

**Biology**

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

210. Seminar in Cellular Physiology (2)
Prerequisite: Biology 101 and consent of instructor.
Maximum credit four units applicable on a master's degree.

220. Seminar in Developmental Biology (2)
Prerequisite: Biology 156.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

221. Developmental Genetics (3)
Prerequisites: Biology 101 and Biology 156.
Regulation of genetic information in developing systems.

222. Morphogenesis (3)
Prerequisites: Biology 101 and Biology 156.
Regulation of pattern formation in developing systems; cell migration, cell division, cell death, dependent differentiation.

230. Speciation (3)
Prerequisites: Biology 110 and 155; or Biology 160.
Concepts and principles of the origin of species.

231. Seminar in Ethology and Comparative Psychology (3)
Prerequisites: Psychology 114 or 117, or Biology 110 or Zoology 170, and consent of the Graduate Adviser.
Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree.

240. Seminar in Terrestrial Ecology (2)
Prerequisite: Biology 110.
Ecological concepts as applied to the terrestrial environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

241. Seminar in Aquatic Ecology (2)
Prerequisite: Biology 110.
Ecological concepts as applied to the fresh water and marine environment. May be repeated with new content. Maximum credit four units applicable on a master's degree.

242. Population and Community Ecology (3)
Prerequisites: Biology 110.
Formulation, analysis, and experimental testing of the theories of the structure and dynamics of ecological systems at the population and community level.

243. Physiological Ecology (3)
Prerequisites: Biology 110 and consent of instructor.
The comparative physiological characteristics of natural plant and animal populations in relation to their habitats and environments.

244. Physical Aspects of Ecology (3)
Prerequisite: Biology 110.
Analysis and measurement of physical factors of the environment and of the processes by which energy and matter are exchanged between organisms and the environment; the significance of the physical environment in ecological processes.
245. Aquatic Ecology (3)
Prerequisites: Biology 110 and consent of instructor.
Two lectures and three hours of laboratory.
Ecological concepts as applied to benthic and pelagic population and communities in fresh water and marine environments.

246. Behavioral Ecology (3)
Prerequisites: Biology 110 and consent of instructor.
Two lectures and three hours of laboratory.
Prerequisites: Biology 110 and consent of instructor.
Recommended: Zoology 170 or Psychology 141.
Behavioral mechanisms relating animals to their physical and biotic environment.

250. Biogeography (3)
Prerequisite: Biology 110 or 160.
Concepts and principles of the distributional history of plant and animal groups, and the origins and dispersal of modern faunas and floras.

260. Seminar in General Physiology (2)
Prerequisite: Biology 101 or Botany 107.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

261. Seminar in Environmental Radiation (2)
Prerequisites: Biology 150 and Biology 151.
The sources, characteristics, distribution, measurement, and fate of radioactive contaminants in the biosphere and interactions with the biota. Maximum credit four units applicable on a master's degree.

262. Cytoplasmic Inheritance (3)
Prerequisites: Biology 101, 155, and consent of instructor.
Literature and techniques related to research in non-Mendelian genetics.

263. Seminar in Comparative Physiology (2)
Prerequisites: Biology 142A or 142B and consent of instructor.
Comparative aspects of function at the molecular through organismal levels. Maximum credit four units applicable on a master's degree.

264. Methods in Physiology (2)
Six hours of laboratory.
Prerequisite: Biology 101.
Current methods employed on physiological measurements. Maximum credit four units applicable on a master's degree.

265. Molecular Biophysics (3)
Prerequisites: Biology 101, Mathematics 21 and 22.
The description and analysis of biological processes and systems in terms of the properties of molecules and of basic principles.

270. Seminar in Genetics (2)
Prerequisite: Biology 115.
Maximum credit four units applicable on a master's degree.

276. Physiological Genetics (3)
Prerequisites: Biology 115 or 158; Chemistry 12.
Recommended: Chemistry 115A-115B.
Biochemical aspects of genetics of microbial and human systems.

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

291. Investigation and Report (3)
Analysis and research techniques in biology.

297. Research (1-3)
Research in one of the fields of biology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

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

Botany

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

261. Seminar in Phycology (2)
Prerequisite: Botany 101.
Recent developments in phycology. Maximum credit four units applicable on a master's degree.

262. Seminar in Mycology (2)
Prerequisite: Botany 102.
Current problems in the taxonomy, morphology or physiology of the fungi. Maximum credit four units applicable on a master's degree.

263. Seminar in Vascular Plants (2)
Prerequisite: Botany 103.
Problems in the evolution of the vascular plants. Maximum credit four units applicable on a master's degree.

264. Seminar in Systematic Botany (2)
Prerequisite: Botany 114.
Current problems in the systematics of vascular plants. Maximum credit four units applicable on a master's degree.

265. Seminar in Plant Pathology (2)
Prerequisite: Botany 126.
Advanced topics in the biology of plant pathogens. Maximum credit four units applicable on a master's degree.

266. Seminar in Plant Physiology (2)
Prerequisite: Botany 130.
Current investigations in one of the areas in plant physiology. Maximum credit four units applicable on a master's degree.

270. Seminar in Plant Anatomy (2)
Prerequisite: Botany 140.
Study of recent advances in the anatomy of vascular plants. Maximum credit four units applicable on a master's degree.

272. Seminar in Palynology (2)
Prerequisite: Botany 172.
Study of recent advances in palynology. Maximum credit four units applicable on a master's degree.
298. **Special Study** (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

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

**Microbiology**

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

205. **Seminar in Microbial Physiology** (2)
Prerequisite: Microbiology 105.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

210. **Seminar in Pathogenic Bacteriology** (2)
Prerequisite: Microbiology 102.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

215. **Seminar in Bacterial and Viral Genetics** (2)
Prerequisite: Microbiology 114.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

220. **Seminar in Industrial and Agricultural Microbiology** (2)
Prerequisite: Microbiology 101 or consent of instructor.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

225. **Seminar in Medical Mycology** (2)
Prerequisite: Microbiology 104 or consent of instructor.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

240. **Seminar in General Microbiology** (2)
Prerequisites: Microbiology 101 and 105, or consent of instructor.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

245. **Seminar in Aquatic Microbiology** (2)
Prerequisite: Microbiology 116.
Maximum credit four units applicable on a master's degree.

250. **Seminar in Virology** (2)
Prerequisite: Microbiology 107 or consent of instructor.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

260. **Seminar in Immunology and Serology** (2)
Prerequisite: Microbiology 103 or consent of instructor.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

270. **Biology of Animal Pathogenic Fungi** (4)
Three lectures and three hours of laboratory.
Prerequisites: Microbiology 103, 104 and 105; Botany 102; and Chemistry 115B.
Physiological, cytological, genetic, and ecological factors relating to pathogenesis of the fungi-causing diseases in man and other animals.

271. **Bacterial Viruses (Bacteriophages)** (4)
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 105, 107; Biology 155; Chemistry 115B.
Effects of temperate and virulent bacteriophages on their hosts, including host-induced modification, lysogenic conversion, and transduction.

272. **Advanced Pathogenic Bacteriology** (4)
Three lectures and three hours of laboratory.
Prerequisites: Microbiology 102 and 105; Chemistry 114B or 115B. Recommended: Biology 101, 110.
Biological and chemical nature of disease-producing bacteria. Application of experimental information to diagnostic laboratory procedures.

290. **Bibliography** (1)
Use of basic reference books, journals, pertinent bibliographies preparatory to the writing of a master's thesis.

291. **Research Techniques** (3)
Prerequisites: Major in a biological science and two upper division courses in the area of microbiology or consent of instructor.
Analysis of research procedures in microbiology.

297. **Research** (1-3)
Research in one of the fields of microbiology.
Maximum credit six units applicable on a master's degree.

298. **Special Study** (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

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

**Zoology**

200. **Seminar** (2 or 3)
An intensive study in advanced zoology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

201. **Seminar in Marine Zoology** (2)
Prerequisite: Biology 110.
Recent developments in marine zoology. Maximum credit four units applicable on a master's degree.

206. **Seminar in Vertebrate Morphology** (2)
Prerequisite: Biology 106.
Current problems in the descriptive, functional and evolutionary anatomy of vertebrates. Maximum credit four units applicable on a master's degree.

209. **Seminar in the Biology of Cold-blooded Vertebrates** (2)
Prerequisite: Zoology 60 or 106.
Biology of ectothermic animals. Maximum credit four units applicable on a master's degree.

210. **Seminar in the Biology of Warm-blooded Vertebrates** (2)
Prerequisite: Zoology 60 or 106.
Biology of endothermic animals. Maximum credit four units applicable on a master's degree.
211. Animal Energetics (3)
   Three lectures.
   Prerequisite: An upper division course in physiology. A course in calculus and
   one in biochemistry are recommended.
   Energy transformation in animals to include the physiology of starvation, animal
   energetic efficiency, nutrition, and temperature regulation.

212. Advanced Marine Invertebrate Zoology (3)
   One lecture and six hours of laboratory.
   Prerequisite: Zoology 112.
   Selected topics in advanced marine invertebrate zoology.

215. Advanced Vertebrate Zoology (3)
   Prerequisite: Consent of the instructor and any one of the following: Zoology
   115, 116, 117, 118, depending on the specific topic announced in the class schedule.
   Advanced treatment of ichthyology, herpetology, ornithology, or mammalogy.
   May be repeated with new content to a maximum of six units. Maximum credit
   six units applicable on a master's degree.

290. Bibliography (1)
   The use of basic reference books, journals, pertinent bibliographies preparatory
   to the writing of a master's thesis.

291. Research Techniques (3)
   Prerequisite: Consent of graduate adviser.
   Analysis of research techniques in zoology.

297. Research (1-3)
   Research in one of the fields of zoology.
   Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)
   Prerequisite: Consent of staff, to be arranged with department chairman and
   instructor.
   Individual study. Six units maximum credit.

299. Thesis or Project (1-3)
   Prerequisite: An officially appointed thesis committee and advancement to
   candidacy.
   Preparation of a project or thesis for the master's degree.

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 Admini-
stration is a member of the American Association 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 education or a business under-
graduate degree. The Master of Science degree in Business Administration is de-
signed to provide for 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 within the School of Business Administration have
been accredited by the American Association of Collegiate Schools of Business.

Entrance requirements for the two master's degree curriculums 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 Assistant 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 gov-
ernment organizations provides opportunities for research and observation for
graduate students. The continued professionalization of the business executives' re-
sponsibilities 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 individu-
als 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 GRADUATE CURRICULUMS

A student seeking admission to either of the master's degree curriculums offered
in the School of Business Administration must (1) be admitted to San Diego State
with unclassified graduate standing by the Office of Admissions and (2) be ad-
mitted to the Graduate Division with classified graduate standing. See Part Three
of this Bulletin for information on admission procedures.

ADMISSION TO THE GRADUATE DIVISION AND THE
SCHOOL OF BUSINESS ADMINISTRATION

Admission to the Graduate Division with classified graduate standing for the
purpose of working toward either the Master of Business Administration degree
or the Master of Science degree in Business Administration constitutes admission
to the School of Business Administration. Students should request application materials
from the Graduate Division Office. For additional information, see Part Three
of this Bulletin under Admission of Graduate Students to the Graduate Division.

All students must have classified graduate standing prior to enrolling in any
graduate (200-numbered) course. All three of the following factors are taken into
consideration in evaluating a prospective student for classified graduate standing:
(1) his undergraduate grade point average; (2) his score on the Admission Test for Graduate Study in Business; and (3) his score on the Graduate Record Examination. Aptitude Test. Transcripts and both test scores should be on file at San Diego State at least four months prior to the date the student expects to register for classes. Details concerning both the Admission Test for Graduate Study in Business and the Graduate Record Examination Aptitude Test may be obtained from the Test Office, San Diego State, or by writing to the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey 08540. These tests are administered five times a year.

MASTER OF BUSINESS ADMINISTRATION DEGREE

ADMISSION TO THE DEGREE CURRICULUM

Regulations governing admission to the Graduate Division and to the School of Business Administration are outlined above and in Part Three of this Bulletin. 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 Three of this bulletin.

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 Bulletin, the student must complete an approved program of studies containing between 30 and 60 units of 200-numbered courses. The exact number of units required will depend on the extent of his previous work in business administration or related fields. 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 six 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 24 of the total units required must be completed in residence at San Diego State, and at least 9 units of program courses must be completed before 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 completed:
   - B.A. 201A. Organization Theory (3)
   - B.A. 201B. Behavior in Organizations (3)
   - B.A. 202A. Quantitative Methods (1)
   - B.A. 202B. Quantitative Methods (3)
   - B.A. 203. Marketing (3)
   - B.A. 204. Law for Business Executives (3)
   - B.A. 205. Financial Principles and Policies (3)
   - B.A. 206. Management Economics (3)
   - B.A. 208. Managerial Accounting (1)
   - B.A. 209. Computer Programming and Systems Analysis (3)
   - Economics 203. Economic Analysis (3)

2. Complete the following two courses required of all students:
   - B.A. 207. Research and Reporting (3)
   - B.A. 284. 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 of which must include B.A. 299, Thesis (Plan A), or B.A. 390, Directed Readings in Business Administration. Students choosing the Directed Readings option must then pass a comprehensive examination in their last semester of coursework in lieu of thesis (Plan B).

   (b) Electives: At least 3 units in coursework 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 6 units in courses 297, Research, and 298, Special Study, 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 Bulletin.

MASTER OF SCIENCE DEGREE IN BUSINESS ADMINISTRATION

ADMISSION TO THE DEGREE CURRICULUM

In addition to meeting the requirements for classified graduate standing in the Graduate Division and admission to the School of Business Administration, as described above, and in Part Three of this bulletin, the student must have satisfactorily completed the following courses or their equivalents before enrolling in 200-numbered courses listed on the official master's degree program:

- Business Administration 1A-1B, Principles of Accounting (4 units)
- Economics 1A-1B, Principles of Economics (6 units)
- Economics 2, Statistical Methods, or Mathematics 12, Elementary Statistics (3 units)
- Business Administration 30A, Business Law (3 units)
- Business Administration 81, Information Processing and Computer Programming (3 units)
- Business Administration 126, Fundamentals of Finance, or Economics 135, Money and Banking (3 units)
- Business Administration 132, Fundamentals of Management (3 units)
- Business Administration 180, Marketing Principles (3 units)
- Business Administration 190, Quantitative Analysis for Business (3 units)

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 Office only upon the recommendation of the School of Business Administration, and after the student has filed an official program.

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this bulletin.

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 Bulletin, the student must complete a graduate program of 30 approved units including at least twenty-one units in 200-numbered courses. Business Administration 299, Thesis, is required. Business Administration 206, Managerial Economics, is required unless the student has completed sufficient advanced general Economics as a part of his undergraduate preparation. At least twenty-four
units must be in business administration and economics. Not more than a total of 6 units in Courses 297, Research, and 298, Special Study, may be accepted for credit toward the degree.

The following concentrations are available:

6. Management
7. Management Science
8. Marketing
9. Production and Operations
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 Bulletin.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching 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.

FACULTY

Dean, School of Business Administration: R. P. Hungate, Ph.D.
Associate Dean, School of Business Administration: M. L. Crawford, Ed.D.
Assistant Dean for Graduate Study in Business Administration: W. F. Barber, D.B.A.
Chairman, Department of Accounting: W. W. Harned, Ph.D.
Chairman, Department of Finance: W. W. Reints, Ph.D.
Chairman, Department of Information Systems: R. G. Langenbach, Ed.D.
Chairman, Department of Marketing: Richard D. Darley, Ph.D.

Graduate Advisors:

Accounting: V. E. Odmart
Human Resources Administration: D. W. Belcher
Finance: B. M. Neuberger, P. A. Vandenbarg
Information Systems: M. L. Crawford, R. G. Langenbach
Insurance: C. R. Smith
Management Science: Oliver Galbraith, W. R. Sherrard
Marketing: John McFall, T. R. Wotruba

Production and Operations Management: Oliver Galbraith, A. L. Srbich
Real Estate: W. F. Hippaka


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN BUSINESS ADMINISTRATION

GRADUATE COURSES

Classified graduate standing is a prerequisite for all 200-numbered courses.

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

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

201B. Behavior in Organizations (3)
Nature of the human resource in organizations. Analysis of organizational systems and managerial actions to direct and control human behavior.

202A-202B. Quantitative Methods (3-3)
In 202A: Measures of central tendency and variation, sampling and various statistical tests such as analysis of variance, t-test, and X² tests. Simple and multiple correlation. In 202B: The design of statistical experiments and various operations research techniques such as simulation, linear programming, queuing theory, and Markov chain analysis.

203. Marketing (3)
The marketing activities of a firm in relation to management and society. Application of economic theory to marketing institutions and functions. Not open to students with credit for Business Administration 150 or its equivalent.

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

205. Financial Principles and Policies (3)
Prerequisite: Business Administration 200.
Finance and financial institutions as they relate to the firm and the flow of funds. Emphasis upon the determination of capital; principles and tools of business finance; money and capital markets.

206. Managerial Economics (3)
Prerequisite: Economics 203.
Role of economic theory in management analysis and decisions. Study of demand, cost, and supply theories from a business viewpoint.

207. Research and Reporting (3)
Prerequisite: Business Administration 202B.
The presentation of data related to business and industry. The analysis and effective presentation of data related to business and industry.

208. Managerial Accounting (3)
Prerequisite: Business Administration 200.
Accounting in relation to the decision making process; various cost systems; relevancy of various cost concepts; direct costing, flexible budgets, distribution of product cost; break-even analysis; capital budgeting; and other techniques of management planning and control.

209. Computer Programming and Systems Analysis (3)
Prerequisite: B.A. 202A.
Fundamentals of computers, problem-oriented computer language, flow-charting logic and techniques, analysis of the synthesis of computer-based systems.
210. Theory and Analysis of Financial Statements (3)
Prerequisite: Business Administration 200.
The theories, principles, and concepts underlying financial statements; measurement and presentation of enterprise resources, equities, and income in accordance with generally accepted accounting principles; consideration of price level problems.

211. Advanced Accounting (3)
Prerequisite: Business Administration 210.
Principles and concepts as related to the measurement, determination, and presentation of resources, equities, and income of parent and affiliated companies; concepts of fund accounting; specialized reporting for partnership formation, income distribution, and liquidation.

212. Income Tax Accounting (3)
Prerequisite: Business Administration 200.
Provisions of the federal tax law, including preparation of returns for individuals, partnerships, corporations, estates, trusts; procedures for reporting deficiency assessments, refunds, and other administrative practices.

213. Auditing (3)
Prerequisite: Business Administration 211.
Critical analysis of the application of auditing principles in verification of financial statements; review of AICPA and SEC bulletins and regulations; consideration of professional ethics, audit standards, procedures, sampling techniques, and report writing; trends and developments in auditing profession.

214. Seminar in Accounting Information Systems (3)
Prerequisites: Business Administration 202B and 208.
Systems design and related controls. Emphasis on mathematics, statistics, and computers in planning and reporting.

215. Seminar in Managerial Accounting (3)
Prerequisite: Business Administration 208.
Managerial cost accounting concepts and procedures, including budgetary planning, cost control, advisory functions, measurement of divisional profitability, product pricing, and investment decisions.

216. Seminar in Accounting Theory (3)
Prerequisite: Business Administration 211.
Historical development of accounting principles and theory; problems in valuation, income determination, and statement presentation.

217. Seminar in Management Information Systems (3)
Prerequisite: Business Administration 200.
Systems design and related controls. Emphasis on mathematics, statistics, and computers in planning and reporting.

218. Seminar in Production and Operations Management (3)
Prerequisite: Business Administration 230.
Theories, principles, and concepts underlying financial statements; measurement and presentation of enterprise resources, equities, and income in accordance with generally accepted accounting principles; consideration of price level problems.

219. Seminar in Financial Markets (3)
Prerequisite: Business Administration 205.
Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.

220. Production and Operations Management (3)
Prerequisite: Business Administration 220.
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.

221. Methods Engineering and Job Design (3)
(Formerly Advanced Methods Engineering and Work Measurement)
Prerequisite: Business Administration 230.
Use of Industrial Engineering for Management Decisions—job simplification and motion economy; micromotion analysis, time standards and determination, performance rating, allowances, statistical work measurement, learning curves, formula construction, machine interference and the establishment of production times from standard data.

222. Quality Control (3)
Prerequisite: Business Administration 230.
Statistical techniques for controlling quality, reliability and maintainability, types of control and limit charts.

223. Production and Inventory Control (3)
(Formerly Inventory and Production Control)
Prerequisite: Business Administration 230.
The design and analysis of single and multi-product control systems. Methods for the control of production-inventory systems where demand is assumed known either over the planning horizon or only statistically.

224. Seminar in Production and Operations Management (3)
Prerequisite: Business Administration 230.
Case studies of selected industries, emphasizing integration of the manufacturing and operations function with the major goals of the organization.

225. Operations Research: Deterministic Models (3)
(Formerly Systems and Data Analysis)
Prerequisites: Business Administration 202B and 209.
Decision-making under conditions of certainty. Applications of algebra (Boolean, ordinary, and matrix), analytic geometry, trigonometry, and calculus to business problems. The use of network analysis; linear, integer, and dynamic programming; sequencing and scheduling models, and sensitivity analysis in decision-making.

(Formerly Computer Implemented Optimization Seeking Methods)
Prerequisites: Business Administration 202B and 209.
Decision-making under conditions of uncertainty. The application of queuing theory, Markov chains, conditional and joint probability, Bayes' formula, and gambling theory to decision making.

227. Seminar in Quantitative Analysis for Financial Decisions (3)
Prerequisites: Business Administration 202B, 205, and 209.
Quantitative techniques and the computer as employed to optimize financial decisions.

228. Seminar in International Business Finance (3)
Prerequisite: Business Administration 205.
International finance applied to the business firm.

229. Seminar in Financial Markets (3)
Prerequisite: Business Administration 205.
Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.

230. Production and Operations Management (3)
Prerequisite: Business Administration 220.
Theory, concepts and decision analysis related to effective utilization of major factors of production in manufacturing and service industries. Utilizes the system approach to achieve unification of the production elements in terms of both analysis and synthesis. Not open to students who have credit for a basic course in production management.

231. Methods Engineering and Job Design (3)
(Formerly Advanced Methods Engineering and Work Measurement)
Prerequisite: Business Administration 230.
Use of Industrial Engineering for Management Decisions—job simplification and motion economy; micromotion analysis, time standards and determination, performance rating, allowances, statistical work measurement, learning curves, formula construction, machine interference and the establishment of production times from standard data.

232. Quality Control (3)
Prerequisite: Business Administration 230.
Statistical techniques for controlling quality, reliability and maintainability, types of control and limit charts.

233. Production and Inventory Control (3)
(Formerly Inventory and Production Control)
Prerequisite: Business Administration 230.
The design and analysis of single and multi-product control systems. Methods for the control of production-inventory systems where demand is assumed known either over the planning horizon or only statistically.

234. Seminar in Production and Operations Management (3)
Prerequisite: Business Administration 230.
Case studies of selected industries, emphasizing integration of the manufacturing and operations function with the major goals of the organization.

235. Operations Research: Deterministic Models (3)
(Formerly Systems and Data Analysis)
Prerequisites: Business Administration 202B and 209.
Decision-making under conditions of certainty. Applications of algebra (Boolean, ordinary, and matrix), analytic geometry, trigonometry, and calculus to business problems. The use of network analysis; linear, integer, and dynamic programming; sequencing and scheduling models, and sensitivity analysis in decision-making.

(Formerly Computer Implemented Optimization Seeking Methods)
Prerequisites: Business Administration 202B and 209.
Decision-making under conditions of uncertainty. The application of queuing theory, Markov chains, conditional and joint probability, Bayes' formula, and gambling theory to decision making.

237. Computer Implemented Optimization Seeking Methods (3)
(Formerly Management Systems and Simulation)
Prerequisite: Business Administration 235.
Programming and simulation techniques for analysis of interlocking decision problems with the use of the computer. Derivation of man, machine, and system models. Design of steady state and dynamic stochastic models.
250. Seminar in Marketing and the Economy (3)
Prerequisite: Business Administration 203.
The impact of cultural, social, political, economic, and other environmental variables upon international marketing systems and the decision-making process of multinational marketing operations.

251. Seminar in Management Science (3)
Prerequisite: Business Administration 203.
Analysis by quantitative techniques for managerial planning and decision-making. Applications of operations research and other concepts to industrial situations. (Formerly numbered and entitled Business Administration 239B.)

252. Seminar in Marketing Institutions (3)
Prerequisite: Business Administration 203.
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.

253. Seminar in International Marketing (3)
Prerequisite: Business Administration 203.
The study of international marketing in relation to marketing strategy and the changing environment of business.

254. Seminar in Human Resources Administration (3)
Prerequisites: BA 201-B, or any one of Public Administration 241, Economics 250, Psychology 220, Sociology 220.
Interaction of unions and business organizations with particular emphasis upon collective bargaining. Effects upon management and society. Trends in collective bargaining and in the organization of employees.

255. Seminar in Consumer Behavior (3)
Prerequisite: Business Administration 203.
The study of consumer behavior in relation to marketing strategy and the changing environment of business.

256. Seminar in Industrial and Government Procurement Management (3)
Prerequisite: Business Administration 203.
Procurement methods used in industry and government; internal departmental operations, interrelationships with other departments; supplier selection, pricing/cost analysis; contract negotiations, special characteristics of government procurement.

257. Seminar in Industrial Marketing Management (3)
Prerequisite: Business Administration 203.
The management of marketing decisions and strategies peculiar to the industrial market.

258. Seminar in Industrial and Government Procurement Management (3)
Prerequisites: Business Administration 201A and 203.
Principles and methods used in industry and government; internal departmental operations, interrelationships with other departments; supplier selection, pricing/cost analysis; contract negotiations, special characteristics of government procurement.

259. Market Analysis and Research (3)
Prerequisites: Business Administration 201A and 203.
Application of statistical and mathematical methods to market problems, consumer research, and product analysis.

260. Seminar in Industrial and Government Procurement Management (3)
Prerequisites: Business Administration 201A and 203.
Analysis of issues and application of behavioral science theory in acquiring, developing, rewarding, and utilizing human resources.

261. Seminar in Real Estate (3)
Prerequisite: Business Administration 222.
Current problems in real property. Regional land use planning. (Formerly numbered Business Administration 222.)

262. Seminar in Real Estate Finance (3)
Prerequisite: Business Administration 260.
Theories and factors governing the financial functions of lenders, borrowers, governmental agencies, and collateral in financing real estate.

262. Seminar in Real Estate Investment (3)
Prerequisite: Business Administration 260.

263. Seminar in Real Estate Finance (3)
Prerequisite: Business Administration 260.
Theory and factors governing the financial functions of lenders, borrowers, governmental agencies, and collateral in financing real estate.

264. Seminar in Valuation of Real Property (3)
Prerequisite: Business Administration 260.
Valuation of real property by the cost, income, and market approaches to value. Evaluation of property taken in eminent domain proceedings, air rights, inverse condemnation, leasehold interests.

265. Seminar in Business Education (3)
Prerequisite: Business Administration 202A and 209.
Study of the theory and techniques of information storage and retrieval, to include the study of optimization and randomization of data storage.
274. Seminar in Advanced Computer Application (3)
Prerequisites: Business Administration 202A and 209.
Analysis, design, and coding of control and executive routines. Analysis of methods for using library routines.

278. Seminar in Management of Information Systems (3)
Prerequisites: Business Administration 273.
Advanced information systems. Emphasis on current managerial trends and developments and on individual student research.

279. Seminar in Data Systems Design (3)
Prerequisites: Business Administration 202B, 273 and 274.
Research in the analysis and design of data processing systems.

281. Behavioral Sciences for Management (3)
Prerequisite: Business Administration 201B.
Applications of findings from behavioral sciences to management problems and decisions. Study of organization cultures and subcultures. Impact of human behavior on the enterprise.

282. Group Processes and Leadership (3)
Prerequisite: Business Administration 201B.
Perceptions and processes in work groups. Experience in interpersonal networks, influence and rewards, stereotypes; managing differences and conflicts.

283. Origins and Nature of American Business Enterprise (3)
Prerequisite: Business Administration 201B.
Factors underlying the American system of business enterprise; modern corporations, the corporation man, technological change, the business community and politics, and other significant issues.

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

285. Seminar in Business Planning (3)
Prerequisites: Business Administration 201A, 202, 205, and nine units in Business Administration courses numbered 210 or above.
Strategic decision-making, long range forecasting, and corporate planning with major emphasis on product-market relationships.

289. Seminar in Organization and Management (3)
Prerequisite: Business Administration 201B.
Analysis of problems in business and other organizations. Organization and de-emphasis theory and contemporary developments in management science are emphasized.

290. Directed Readings in Business Administration (3)
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examination for those students in the M.B.A. program under Plan B.

297. Research (3)
Prerequisite: Advancement to candidacy.
Research in one of the fields of Business Administration.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and individual study. Six units maximum credit.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
SECTION II. JOINT DOCTORAL PROGRAM

Students who desire to become candidates for the degree of Doctor of Philosophy in Chemistry should realize that it is granted not for the fulfillment of residence or course requirements alone, but more for the student's general grasp of chemistry and his accomplishments in this field. The student must demonstrate his ability to work independently and to make an original contribution to the field of chemistry. A student with an acceptable baccalaureate degree will normally spend at least three years of full-time study in earning the degree.

ADMISSION TO THE GRADUATE DIVISIONS

An applicant for admission to the joint doctoral program must first be admitted to regular graduate standing in the Graduate Division of the University of California, San Diego, and to classified graduate standing in the Graduate Division of San Diego State University. In seeking admission to the two Graduate Divisions, the applicant must pay all fees required by each institution and comply with the admission procedures stated in this bulletin and in the current edition of the General Catalogue and the Graduate Studies Bulletin, University of California, San Diego.

ADMISSION TO THE PROGRAM

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 analytical, inorganic, organic and physical chemistry, and mathematics.

The request of each student for admission to the joint doctoral program will be considered on an individual basis. Requests for specific research assignments will be considered in the light of availability of faculty members qualified for, and interested in, supervision of the proposed research program. Approval may also be limited by the availability of specialized equipment or other physical facilities at any of the cooperating campuses, there is a Graduate Adviser for the joint doctoral program in chemistry.

After a student has been formally admitted to the two Graduate Divisions with appropriate graduate standing, he must declare his intention to enter the joint 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 joint doctoral program. Entry occurs when the student is formally accepted by the Graduate Deans of each of the two Graduate Divisions.

RESIDENCY REQUIREMENTS

After formal admission to the joint doctoral program in chemistry, 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, San Diego. At San Diego State University, the minimum of one year semester units each semester of the required year's residence.

FOREIGN LANGUAGE REQUIREMENTS

A reading knowledge of one foreign language (either German or Russian) is required for the Ph.D. This knowledge must be demonstrated by passing the Graduate Division: Foreign Language Requirement with a score of at least 500. (See U.C.S.D. major for Russian or German through petition to the chairman. Students who have a native language is not English must demonstrate the ability to read, write, speak, and understand scientific English. This requirement is met by satisfactory performance in the TOEFL examination. The language requirement must be fulfilled before taking the qualifying examination, usually in the second year of study.

JOINT GUIDANCE COMMITTEE

A Joint Guidance Committee consisting of two faculty members from each of the cooperating institutions will be appointed for each student who has been formally admitted to the joint doctoral program. This committee will prepare, conduct, and evaluate the placement examinations mentioned above and will develop a study plan in consultation with the student. The study plan must be approved by the Graduate Councils on the two campuses and shall include: (1) the method to be followed in satisfying the foreign language requirements; (2) the sequence of residence study at each of the two institutions; (3) the distribution of courses to be taken at each of the two institutions; (4) the arrangement of any additional examinations required by either of the two departments of Chemistry; and (5) such other matters as may be deemed important by the Joint Guidance Committee.

The Joint Guidance Committee guides and advises the student in preparation for his Qualifying Examination and the work for his dissertation. Courses recommended will depend on the student's performance in the Placement Examinations and upon his field of specialization.

When, in the judgment of the Joint Guidance Committee, the student is prepared for the Qualifying Examination and has satisfied the requirements of the two Departments of Chemistry, the Chairman of the Joint Guidance Committee will notify the Chairman of the Department of Chemistry that the student is ready to proceed and will request the appointment of the student's Joint Doctoral Committee. This request must include a report that the foreign language requirement has been satisfied.

JOINT DOCTORAL COMMITTEE

A Joint Doctoral Committee consisting of three faculty members from each of the cooperating institutions will be appointed by the Graduate Councils jointly. Each departmental Chairman will nominate three members of this committee, one of whom must be from a department other than Chemistry. The Joint Doctoral Committee will conduct the oral part of the Qualifying Examination and make arrangements for the written part when required. It will report the satisfactory passage of the Qualifying Examination to the Graduate Deans. The Joint Doctoral Committee is completely responsible for the student and may set any requirements the student is required to meet with the Joint Doctoral Committee. This joint committee will guide the student through his research, approve his dissertation, and conduct his final examination. All members of the committee must be present at the Qualifying Examination and the Final Examination and will sign the reports on each. All members must sign the approval page of the dissertation.

ADVANCEMENT TO CANDIDACY

If the student successfully passes the Qualifying Examination, the Graduate Dean, University of California, San Diego, will send him an application for advancement to candidacy. This application must be completed in consultation with and signed by the Chairman of the student's Joint Doctoral Committee. Upon payment of the Candidacy Fee to the University of California, San Diego, and after approval by both Graduate Deans, the student will be notified of his advancement to candidacy by the Graduate Dean, University of California.

A minimum of two semesters of resident study will be required between the date of advancement to candidacy and of awarding of the degree.

DISSERTATION

A dissertation on a subject chosen by the candidate and approved by his Joint Doctoral Committee, bearing on his field of specialization and showing original contribution, is required. The dissertation must be in accord with the regulations of the University of California, San Diego, and the University of California, the University of California, San Diego, and the University of California, San Diego, must be met, including microfilming and such other provisions as may be decided by the Graduate Council of San Diego State.
FINAL EXAMINATION
The candidate must pass a final oral examination conducted by his Joint Doctoral Committee. This examination will deal primarily with the relations of the dissertation to the general field in which the subject lies. For passage, unanimous affirmative votes will be required from the committee members of each of the cooperating institutions. After passing the Final Examination, and with the approval of the Graduate Councils of both institutions, the student will be nominated for the degree.

AWARD OF DEGREE
The Doctor of Philosophy degree in Chemistry will be awarded jointly by the Regents of the University of California and the Trustees of the California State Colleges in the names of the University of California, San Diego, and San Diego State College.

PROCEDURES
The time required for a student to complete the requirements for the joint doctorate 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.

The official records of all students who have formally been admitted to the joint doctoral program will be maintained by the Registrar, University of California, San Diego, and complete copies of these records will be on file in the Graduate Office, San Diego State. Transcripts of record will be issued by the Registrar, University of California, San Diego, upon request.

A student in residence on one of the two campuses may register for not more than one course at the other institution. Information on fees and other details of registration may be obtained from the Graduate Deans.

All student petitions must be addressed to the two Graduate Deans, jointly. Courses taken by students who have been formally admitted to the joint doctoral program at either institution, and the grades obtained, will be reported to the Registrar of the other institution.

All student grants given in an individual institution will be subject to all rules and regulations governing graduate students in the Graduate Division at that institution unless they are contrary to the provisions of this joint doctoral program.

Applications for graduation must be filed in accordance with the regulations of the participating institutions.

All inquiries concerning the operation of the joint doctoral program should be directed to the Graduate Dean at either of the two campuses.

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: James R. Arnold; Alternate: Joseph E. Mayer

San Diego State:
Graduate Adviser: R. W. Isensee; Alternate: A. N. Wick.

ASSISTANTSHIPS
Graduate teaching assistantships and graduate non-teaching 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.

FACULTY
Chairman, Department of Chemistry: E. P. Wadsworth, Jr., Ph.D.
Graduate Adviser: R. W. Isensee
Credentiel Adviser: J. G. Malik
Associate Professors: J. E. Bennett, Ph.D.; J. H. Mathewson, Ph.D.; S. B. W. Roeder, Ph.D.
Assistant Professors: Dewitt Coffey, Jr., Ph.D.; M. M. Malley, Ph.D.

COURSES ACCEPTABLE ON ADVANCED DEGREE PROGRAMS IN CHEMISTRY

UPPER DIVISION COURSES
118. Advanced Physical Chemistry (4) 158. Enzymology (3–3)
131. Theoretical Organic Chemistry (3) 170. Radiochemistry (3)
154. Organic Qualitative Analysis (3) 180. Chemical Oceanography (3)
191. Chemical Literature (1)

GRADUATE COURSES
200. Seminar (1 to 3) 200. Graduate Teaching Assistantship (1 to 3)
210. Advanced Topics in Physical Chemistry (1–3) 211. Advanced Topics in Physical Chemistry (1–3)
Prerequisite: Consent of instructor.
Selected topics in physical chemistry. Maximum credit six units applicable to a master's degree.

211. Chemical Thermodynamics (3) 212. Chemical Thermodynamics (3)
Prerequisites: Mathematics 52 and Chemistry 110B. Chemical thermodynamics and an introduction to statistical thermodynamics.

212. Chemical Kinetics (3) 213. Chemical Kinetics (3)
Prerequisites: Mathematics 52 and Chemistry 110B. Theory of rate processes; applications of kinetics to the study of reaction mechanisms.

213. Quantum Chemistry (3) 214. Quantum Chemistry (3)
Prerequisites: Mathematics 52 and Chemistry 110B. Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory.

Prerequisites: Mathematics 52 and Chemistry 110B. Theory and techniques used in the determination of molecular structure.

Prerequisite: Chemistry 211. Statistical mechanics as applied to chemical systems.
216. Physical Chemistry of Electrolytic Solutions (2)
Prerequisite: Chemistry 211.
Theory of ionic solutions: electrode potentials, activity coefficients, partial molal
quantities, conductance and ion association.

220. Advanced Topics in Inorganic Chemistry (1-3)
Prerequisite: Chemistry 127A.
Selected topics in inorganic chemistry. Maximum credit six units applicable on a
master's degree.

221. Mechanisms of Inorganic Reactions (3)
Prerequisite: Chemistry 127A.
Mechanisms in inorganic reactions with an emphasis on coordination chemistry.

222. Chemistry of the Nonmetals (2)
Prerequisite: Chemistry 127A.
An advanced systematic study of the nonmetallic elements and their compounds.

230. Advanced Topics in Organic Chemistry (1-3)
Prerequisite: Chemistry 112.
Selected topics in organic chemistry. Maximum credit six units applicable on a
master's degree.

231. Mechanisms of Organic Reactions (3)
Prerequisites: Chemistry 110B and 112.
Reactivity and mechanism in organic reactions.

232. Advanced Organic Chemistry (3)
Prerequisite: Chemistry 112.
Applications and limitations of organic reactions from the viewpoint of syn-
thesis.

250. Advanced Topics in Analytical Chemistry (1-3)
Prerequisite: Chemistry 110B.
Selected topics from the field of analytical chemistry. Maximum credit six units
applicable on a master's degree.

290. Bibliography (1)
Exercise in the use of basic reference books, journals, and specialized bibli-
ographies, preparatory to the writing of a master's project or thesis.

291. Research Seminar (1)
Prerequisite: Consent of department chairman.
Discussions on current research by students, faculty, and visiting scientists. Each
student will make a presentation based on the current literature.

297. Research (1-3)
Prerequisite: Consent of instructor.
Research in one of the fields of chemistry. Maximum credit six units applicable
on a master's degree.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and
instructor.
Individual study. Six units maximum credit.

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

GENERAL INFORMATION

The Department of Drama, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Drama. The department offers advanced study in the various areas of drama as they relate to acting, directing, playwriting, scene design, lighting, costume, and makeup. The center for graduate students in drama on the San Diego State 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.

ADMISSION TO THE GRADUATE DIVISION

In addition to the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin, 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 first Saturday following the beginning of classes.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Drama are required to have attained classified graduate standing and to have completed Drama 200.

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 bulletin, the student must complete a graduate program which includes at least 24 units from courses listed below as acceptable on master's degree programs in drama of which at least 18 must be in 200-numbered courses. Drama 200, Research and Bibliography, Drama 247, Seminar in History of Theatre and Drama, and Drama 299, Thesis, are required courses.

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.

FACULTY

Chairman, Department of Drama: D. W. Powell, M.F.A.
Graduate Adviser: G. S. Howard
Credential Adviser: Margaret McKerrow
Professors: Kell Amble, Ph.D.; D. W. Powell, M.F.A.; C. E. Stephenson, Ph.D.
Associate Professor: G. S. Howard, Ph.D.
Assistant Professors: A. M. Annas, M.F.A.; M. L. Harvey, Ph.D.; M. J. Lesley, Ph.D.; Margaret McKerrow, M.A.; Mack Owen, Ph.D.

GRADUATE COURSES

200. Research and Bibliography (3)
Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to the various fields of study. Recommended for first semester of graduate work, and prerequisite to advancement to candidacy.

235. Seminar in Children's Theatre (3)
Prerequisites: Drama 110 and 115.
Modern developments and trends in children's theatre in educational, civic, and professional programs in the United States and England.

257. Projects in Children's Theatre (3-6)
Prerequisites: Drama 110 and 115.
Special individual problems and projects related to all areas of dramatic production for children's theatre.

An investigation of the recent developments in modern staging facilities. The application of technological advances and electro-mechanical devices to the scenic arts for theatre and television. (Formerly numbered Speech Arts 243.)

244. Seminar in Stage Direction (3)
Prerequisite: Drama 127A.
Projects in the aesthetic principles and the practices of stage direction with an emphasis on styles and historic periods.

245. Seminar in Lighting for Stage and Television (3)
Prerequisite: Drama 145A or 145B.
Projects concerned with the aesthetic and the technical problems of lighting in stage. (Formerly numbered Speech Arts 245.)

246. Seminar in Design for Stage and Television (3)
The principles of design in the theatre with an emphasis on the historical development of theatrical costume or scenic environment. The investigation of recent trends in styles and their evolution. Each section may be taken once for credit.
A. Costume Design
Prerequisite: Drama 152A or 152B.
B. Scenery Design
Prerequisite: Drama 140A, 140B, or 148.
(Formerly numbered Speech Arts 246.)

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN DRAMA

UPPER DIVISION COURSES

109. Verse Choir Directing (2 or 3)
120. Play Analysis (3)
121. Theatre Criticism (3)
122. Playwriting, the One-Act Play (3)
123. Playwriting, the Long Play (3)
126. Theory of Production for the Musical Stage (3)
127A-127B, Stage Direction (3-3)
131. Advanced Acting Theory (3)
132. Advanced Acting (3)
137. High School Play Directing (2)
140A. Scenic Design (3)
140B. Styles in Scenic Design (3)
145A-145B, Stage Lighting (3-3)
148. Advanced Dramatic Production (3)
151. Costume, Movement, and Manners (3)
152A-152B. History of Costume
160A-160B. History of the Theatre (3-3)
165. History of American Theatre (3)
178. Directing the Period Play (3)
198. Selected Topics in Drama (1-3)
247. Seminar in History of Theatre and Drama (3)
   Prerequisites: Drama 120, 160A, and 160B.
   A. British and Continental Theatre
   B. American Theatre
   (Formerly numbered Speech Arts 247.)

248. Seminar in Dramatic Theory (3)
   Prerequisites: Drama 120, 160A, 160B, and 200.
   Problems in producing works of such playwrights as Ibsen, Strindberg, Chekhov, Shaw. May be repeated once with new content for a maximum of six units. Maximum credit six units applicable on a master's degree. (Formerly numbered Speech Arts 248.)

288. Special Study (1-3)
   Individual study. Six units maximum credit.
   Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

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

ECONOMICS

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 bulletin under Social Science. Research facilities provided by the Department of Economics include the Economics Research Center and the Institute of Labor Economics.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing as described in Part Three of this bulletin. 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 107 and either 100A–100B or 104A–104B, or their equivalents, and six units of upper division courses in economics or related fields as approved by the graduate adviser.

A student with a bachelor's degree in a field other than economics who has completed the core courses, Economics 100A–100B or 104A–104B and Economics 107, 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

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, all students must take the Graduate Record Advanced Test in Economics. Reservations for this test must be made at the Test Office in the Administration Building.

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 bulletin, 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 200-numbered courses in economics. Economics 200A, 200B, 141, and either 299, for Plan A, or 297, 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 100- or 200-numbered courses offered by other departments of the college. A written comprehensive examination over course work taken for the degree is required.

ASSISTANTSHIPS

Graduate teaching 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.

FACULTY

Chairman, Department of Economics: R. E. Barkley, Ph.D.

Graduate Advisers: D. C. Bridenstine (Coordinator); G. K. Anderson; George Babilot, W. H. Nam; I. I. Poroy


Associate Professors: L. E. Chadwick, B.S.; N. C. Clement, Ph.D.; M. C. Madhavan, Ph.D.; W. H. Nam, Ph.D.; I. I. Poroy, Ph.D.; J. P. Venieris, Ph.D.

238. Seminar in Urban and Regional Economics (3)  
Domestic-international money and financial markets.

235. Seminar in Monetary Economics (3)  
Prerequisite: Economics 140.  
Theory and Policy.  
Prerequisite: Economics 118.  
Role of government in development. Choice of target and policy variables.  
Planning techniques and their application to national development problems.  

231. Seminar in Public Finance (3)  
Prerequisite: Economics 131.  
Advanced study of public finance problems and literature; research.

235. Seminar in Monetary Economics (3)  
Prerequisite: Economics 138.  
Capital and Growth Theory (3)  
Theory of consumer and producer behavior. Determination of prices and resource allocation patterns in a market economy; partial and general equilibrium.  

206B. Seminar in Advanced Economic Theory (3)  
Prerequisites: Economics 104A and 104B, or 100A, 100B, and 107.  
Theory of money, employment, and income determination. Alternative theories of consumption, investment, price level and rate of interest. Causes of instability in short and long run.

201A-201B. Seminar in the Development of Economic Thought (3-3)  
Prerequisites: Twelve units in economics.  
A critical study of the development of economic thought.

Prerequisites: Economics 102 or 115 or 118.  
Topics in comparative economic systems; the Soviet economy, the economy of Communist China, and related subjects.

203. Economic Analysis (3)  
Prerequisite: Classified graduate standing.  
The theory of the firm in a market economy. Not open to students with credit in Economics 100A–100B; not applicable toward a master's degree in economics.

206. The Public Economy (3)  
Prerequisite: Economics 131 or Public Administration 162.  
Determinants of the supply and demand for public goods; the social 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.

205. Development Planning (3)  
Prerequisite: Economics 196.  

210. Seminar in Economic History (3)  
Prerequisite: Economics 110 or 119A or 119B.  
Individual study and group discussion on selected topics in economic history.

231. Seminar in Public Finance (3)  
Prerequisite: Economics 131.  
Advanced study of public finance problems and literature; research.

235. Seminar in Monetary Economics (3)  
Prerequisite: Economics 135.  
Analysis of theoretical issues associated with the money supply and process of money creation. Emphasis upon interaction of monetary and real factors in domestic-international money and financial markets.

238. Seminar in Urban and Regional Economics (3)  
Prerequisite: Economics 138.  
Urban and regional economics; individual research and reports.
EDUCATION

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, supervision, counseling, special education, and educational research. Some of these concentrations are designed to permit concurrent completion of the requirements for the corresponding advanced credentials.

Graduate study is also offered leading to the degree, Master of Science in Counseling.

MASTER OF ARTS DEGREE IN EDUCATION

ADMISSION TO THE GRADUATE DIVISION

The student must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. 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 will be recommended by the school for classified graduate standing.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN EDUCATION

In addition to meeting the requirements for admission to the Graduate Division 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 bulletin. In addition, the student must complete a minimum of 18 units in one of the concentrations in education. Education 211 and either Education 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.

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 Three of this bulletin, and upon satisfactory completion of the qualifying supervision, or counseling, must, in addition to the above, meet specific requirements for admission to the appropriate advanced credential program. A student desiring a concentration in special education must also meet specific admission requirements. (For further information, refer to the School of Education, Office of Graduate Programs, Room 179.)

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 only if he has been advanced to candidacy.

The examination is offered near the mid-point of each semester. Reservations must be made at least one week in advance of the examination. For information, School of Education, Room 179.

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SELECTION OF PLAN A OR PLAN B

In general, applicants will be programed 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 Plan A, the thesis plan, if he has by this time established a plan for his thesis and has secured a faculty adviser for it. Requests for transfer to Plan A must be prepared as an official change in program for the master's degree and countersigned by the faculty adviser and then 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. It is also recommended for students who plan eventually to secure the doctorate. Plan B, requiring a comprehensive examination in lieu of thesis, provides an opportunity (1) to have two experiences of a writing and research nature, (2) to participate actively in the research projects of the other members of the seminar, and (3) to subject his 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 adequate 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 211 (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 basic program, for those intending to serve in positions requiring an administrative or supervisory credential, is built upon the master's degree in Educational Administration and Supervision. Those students with special interests, such as in private school administration, leadership positions as department chairman or team leader, or in school business management, are invited to seek counseling from the Coordinator of the Department of Educational Administration concerning a program of this type. Some variations in the basic program may be permitted in such cases.

1. Prerequisite: Possession of (1) a valid standard teaching credential, standard designated subjects teaching credential or a standard designated services credential or (2) a basic teaching credential issued or renewed by the State of California prior to September, 1966.

2. Education 211, Procedures of Investigation and Report (3 units)

3. The administrative core program: (12 units)
   a. Education 260, Principles of School Administration
   b. Education 261, Educational Leadership
   d. Education 264A, 264B, 264C, Seminars in Elementary School Administration
   e. Education 265A, 265B, 265C, Field Experience in Elementary School Administration
   f. Education 266A, 266B, 266C, Field Experience in Elementary School Administration and Supervision
   g. Education 279, Thesis

4. Advanced Seminars and Field Work: (9 units)
   a. Elementary Specialization
      - Education 264A, 264B, 264C, Seminars in Elementary School Administration
      - Education 265A, 265B, 265C, Field Experience in Elementary School Administration and Supervision
   b. Secondary Specialization
      - Education 265A, 265B, 265C, Seminars in Secondary School Administration and Supervision
      - Education 267A, 267B, 267C, Field Experiences in Secondary School Administration and Supervision

5. Research (3-6 units) Education 295A-295B, Seminars, or Education 299, Thesis

6. Electives (0-3 units) selected with the approval of the adviser.
Advanced seminars require admission to the program of Administration and Supervision, Department of Administration and Supervision. For further information the student is referred to the Office of Graduate Programs, School of Education, Room 179.

Counseling

The Master of Arts degree in Education with a concentration in counseling is designed for persons with a background in professional education who want to specialize in pupil personnel services and school counseling. Generally the degree program is taken in conjunction with work towards the Standard Designated Services Credential with specialization in pupil personnel services.

Prerequisites is a basic background in education (minimum of 12 units). Required are Education 211 (3 units) and either Education 299 (3 units) or Education 295A-295B (6 units) plus additional units to equal a minimum total of thirty units in counselor education or related areas to be selected with the approval of the graduate adviser. A student who wishes to work towards the Standard Designated Services Credential, in addition to this program, must take 0-6 additional units to equal a minimum total of 36 units. 

A student who has completed the program leading to the Master of Science in Counseling degree will not be eligible for admission to the program leading to the Master of Arts degree in Education with a concentration in counseling.

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 211, Procedures of Investigation and Report (3 units).

3. Core program (12 units): Education 221, Seminar in Educational Measurement; Education 270, Advanced Educational Psychology; Education 275, Seminar in the Administration of Instructional Media Centers; (c) A Teacher's Job and the Classroom Teacher. 

Electives (12 units): Selected with adviser's approval.

5. Education 299, Thesis.

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 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 a specialized preparation in school librarianship (applicable to the school library media specialists who plan to seek employment in educational technology and librarianship). The Coordinator of Educational Technology and Librarianship for further information see the Coordinator of Educational Technology and Librarianship.

Course requirements follow:

1. Education 211, Procedures of Investigation and Report (3 units).

2. Core program (18 units) to include: (a) Education 240, Curriculum Construction and Evaluation in Elementary Education, or Education 250, Curriculum Problems in Secondary Education; (b) nine units as follows: Education 241, Producing Instructional Materials; Education 274A, Seminar in Media Utilization; and Education 275, Seminar in the Administration of Instructional Media Centers; (c) A Teacher's Job and the Classroom Teacher. 

3. Education 299, Seminar in Educational Television; selected courses in Library Science; and Education 295A-295B, Seminars, or Education 375, Directed Internship.

4. Electives (3-6 units)

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.

(A student who has completed the program leading to the Master of Arts degree in Education with a concentration in counseling, will not be eligible for admission to the program leading to the degree, Master of Science in Counseling.)

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 bulletin, and for advancement to candidacy, the student must also meet the following requirements:

1. Education 211, 239A, and 239B or equivalent.
2. At least nine units of work from each of the following groups of courses:
   - Second level: Education 231, 232, 233, and 234 (or 237 and 238).
3. Successful completion of a program consisting of at least thirty-six units of approved course work.

ADVANCEMENT TO CANDIDACY

The student must satisfy the general requirements for advancement to candidacy as described in Part Three of this bulletin. In addition, the student must maintain a continuing 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 for Plan B is required. The student must demonstrate satisfactory performance on a comprehensive examination in lieu of a thesis, prepared by the Department of Counseling and Guidance. Reservations for the examination must be made in advance in the Office of Graduate Program, School of Education, Room 179.

PROGRAM FOR REHABILITATION COUNSELORS

Students desiring to complete the program for rehabilitation counselors will complete the requirements for the Master of Science in Counseling and additional special requirements arranged by the Director of Rehabilitation Counselor Education. Further information on this program may be obtained from Dr. John L. Schmidt, School of Education.

THE COMMUNITY COLLEGE INSTRUCTOR CREDENTIAL

Specific Requirement

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

Suggested Professional Education

No formal courses in education are required under the current interpretation of the Education Code. It is strongly suggested, however, that graduate students enroll in the professional courses in teacher education in order to enhance employability and/or experience. Students desiring further information are urged to consult the Community College Coordinator, Room 128, Education Building.

Most departments on the San Diego State campus have developed programs per- mitting graduate students to obtain the Master's degree and enroll in the education education are typically offered in the summer session and after three o'clock in regular semesters.

The following courses are suggested to enhance employment in the community college:

Education 201, The Community College (2)
Education 223, Educational Psychology: Community College (2)
Education 231, Instructional Methods and Materials: Community College Education 316, Directed Teaching (4)

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

SCHOLARSHIPS

The following scholarships are available to graduate students in education.

SAN DIEGO TEACHERS ASSOCIATION. Awarded to 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.

FACULTY

Dean of the School of Education: M. H. Schrupp, Ph.D.
Associate Dean of the School of Education: F. A. Ballantine, Ph.D.
Coordinator of Counselor Education: J. D. Chamley
Coordinator of Educational Administration: John T. Warburton
Coordinator of Educational Technology and Librarianship: T. W. McAllister
Coordinator of Elementary Education: R. R. Nardelli
Coordinator of Secondary Education: Sigurd Stuardland
Coordinator of Special Education Studies: Stanley E. Forbush
Coordinator of Community College Programs: R. D. Smith, Jr.
Coordinator of Graduate Programs in Education: C. E. Fishburn
Graduate Admissions:
Associates in Counseling (Master of Arts): J. D. Chamley
Counseling (Master of Science): J. D. Chamley
Educational Research: H. M. Ford
Educational Technology and Librarianship: P. J. Harrison
Elementary Administration and Supervision: J. T. Warburton
Elementary Curriculum and Instruction: C. E. Fishburn
Secondary Administration and Supervision: H. B. Holt
Secondary Administration and Supervision: H. B. Holt
Secondary Curriculum and Instruction: C. E. Fishburn
Special Education: A. J. Mitchell

Professors:
D. Baker, Ed.D., E. D. Baldwin, Ph.D.; F. A. Ballantine, Ph.D.; R. M. Briggs,
D. B. Blunt, Ed.D., E. D. Baldwin, Ph.D.; F. A. Ballantine, Ph.D.; D. M. Brown,
Fishman, Ph.D.; E. G. Folkerson, Ed.D., D. K. Sanger,
Fishman, Ph.D.; E. G. Folkerson, Ed.D.; D. K. Sanger,
Fishman, Ph.D.; E. G. Folkerson, Ed.D.; D. K. Sanger,
Fishman, Ph.D.; E. G. Folkerson, Ed.D.; D. K. Sanger,
Fishman, Ph.D.; E. G. Folkerson, Ed.D.; D. K. Sanger,
Fishman, Ph.D.; E. G. Folkerson, Ed.D.; D. K. Sanger,
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN EDUCATION

UPPER DIVISION COURSES IN EDUCATION

114. Interpretation of Early Childhood Behavior (3)
115. Guidance in Elementary Education (3)
117. Teacher Effectiveness Training (2 or 3)
118. Supervision of Child Welfare and Attendance (3)
122. Reading in Secondary Education (3)
126. Workshop in Secondary Education (3 or 6)
128D. Human Relations and Counseling in Adult Education (2)
128E. Workshop in Adult Education (1-3)
130A. Arithmetic (2 or 3)
130B. Language Arts (2 or 3)
131A. Reading (2 or 3)
131B. Social Studies (2 or 3)
132A. Science (2 or 3)
132B. Art (2 or 3)
132C. Music (2 or 3)
133. Children's Literature in Elementary Education (3)
135. Workshop in Elementary Education (3 or 6)
137. Reading Difficulties (1)
138B. Social Studies Unit Construction in Elementary Education (1)
141. Producing Instructional Materials (3)
148S. Workshop in Educational Television (6)
149. Application of Programmed Instruction (3)
151. Measurement and Evaluation in Elementary Education (3)
152. Measurement and Evaluation in Secondary Education (3)
153. Quantitative Methods in Educational Research (3)
158. The Vocational-Technical Student (4)
161. Measurement and Evaluation in Special Education (4)
162. Emotionally Disturbed Children and Youth (3)
163. Curriculum and Methods for Teaching Emotionally Disturbed Children and Youth (3)
164. Curriculum and Methods for Teaching Exceptional Children (3)
170. Workshop in Special Education (3)
172. Counseling Exceptional Children (3)
173. Education of the Severely Mentally Retarded (3)
174. Principles and Methods of Speech Correction (3)
176. Scattering and Neuropathological Disorders (3)
177. Audiology: Principles (3)
178A. Communications Skills for the Deaf (3)
190. Conference on the Teaching of Mathematics (1)
191. Guidance Conference (1)
192. Audiovisual Conference (1)

GRADUATE COURSES IN EDUCATION

Students with undergraduate standing are not admitted to 200-numbered courses in Education. For other requirements refer to the statement of prerequisites for graduate courses at the beginning of Part Four of this bulletin.

In addition to these general requirements, 12 units of professional education are required for enrollment in all graduate courses, except Education 201, 223, and Programs; and courses in Counselor Education.

201. The Community College (2)
Overview of philosophy, history, aims, scope, function, outcomes, principles and problems of the community college. Relation of the community college to elementary and secondary schools and to four-year colleges. Fieldwork, including observation and audiovisual experiences, required.

202. Social Foundations (2 or 3)
Prerequisite: Education 131C.
Sociological, historical, and philosophical foundations of American Education and their influences on present-day educational practices.

204. Comparative Education (3)
The contemporary educational ideas and practices of various countries of the world and their impact upon our culture and education.

205. History of Education (3)
Prerequisite: Education 100 or 101.
Advanced study of the history of education with emphasis on educational practices as related to present-day problems.

206. Philosophy of Education (3)
Prerequisite: Education 100 or 101.
Advanced study of philosophical backgrounds of educational thought; a study of comparative philosophies, and an analysis of selected current trends and problems.

207. Educational Sociology (3)
Prerequisite: Education 100 or 101.
A study of the social, economic, political and moral setting in which present-day American education functions.

208. Workshop in Community Influences on Learning and Curriculum Planning (3 or 6)
Prerequisite: Teaching experience.
Advanced study of community influences on learning and child growth and development; student learning, counseling, and administration. To provide community college faculty members with opportunities to explore ways to improve curriculum and instruction in the community college.

211. Procedures of Investigation and Research (3)
Research methods in education. Location, selection, and analysis of professional literature. Methods of investigation, data analysis, and reporting. Required of all applicants for advanced degrees in education. (Formerly Education 290A-290B.)
### Educational Psychology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>220</td>
<td>Advanced Educational Psychology</td>
<td>3</td>
<td>Education 110 or 112.</td>
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</table>

Advanced study of the research and its application to learning and human growth.

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<tbody>
<tr>
<td>221</td>
<td>Seminar in Educational Measurement</td>
<td>3</td>
<td>The following: Education 120, 151, 152.</td>
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</table>

Problems in educational testing. Emphasis upon construction, administration, and validation of teacher-made tests.

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<tbody>
<tr>
<td>223</td>
<td>Educational Psychology: Community College</td>
<td>2</td>
<td>Fieldwork required.</td>
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</table>

Prerequisite: Credit for or concurrent registration in Education 201.

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</thead>
<tbody>
<tr>
<td>224</td>
<td>Advanced Diagnosis in Reading</td>
<td>3</td>
<td>Psychology 204 and Education 157, consent of instructor.</td>
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</tbody>
</table>

Principles and techniques of individual and group diagnosis of reading difficulties. Experience in administration and interpretation of individual and group instruments in diagnosis.

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<th>Prerequisites</th>
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<tbody>
<tr>
<td>225</td>
<td>Advanced Diagnosis and Treatment of Learning Difficulties</td>
<td>3</td>
<td>A teaching credential and Education 151 or 152.</td>
</tr>
</tbody>
</table>

Principles and techniques of diagnosis and treatment of difficulties in learning the school subjects. Supervised experience in working with individual pupils and their parents.

### Counselor Education

<table>
<thead>
<tr>
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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>224A</td>
<td>Administration of Pupil Personnel Services</td>
<td>3</td>
<td>Education 230.</td>
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</tbody>
</table>

The organization and administration of school guidance services, including the use of community resources and a study of laws relating to children and child welfare.

<table>
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<tr>
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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>225A-225B</td>
<td>Determinants of Human Behavior</td>
<td>3-3</td>
<td>Implications of theory and research in behavioral sciences for the understanding of human behavior. Education 225A deals with personality theories and psychological determinants of behavior; 225B with social and cultural determinants.</td>
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<tr>
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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>226</td>
<td>Guidance Services in Public Education</td>
<td>3</td>
<td>Education 110, or Education 111 and 112.</td>
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</table>

Historical, philosophical, and legal bases of the pupil personnel services; staff roles and relationships in a variety of organizational patterns.

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<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>229</td>
<td>Workshop in Counseling</td>
<td>3</td>
<td>Consent of instructor of workshop.</td>
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</table>

Application of principles and procedures to specific situations for improvement of counseling services. Individual problems emphasized.

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<tbody>
<tr>
<td>231</td>
<td>Theory and Process of Appraisal</td>
<td>4</td>
<td>Three lectures and three hours of laboratory.</td>
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</table>

Measurement theory and procedures, including interpretation of test results. Not open to students with credit in Education 237. Offered during summer sessions only in combination with Education 232 as Education 237.

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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>232</td>
<td>Theory and Process of Vocational Choice</td>
<td>4</td>
<td>Three lectures and three hours of laboratory and/or field work.</td>
</tr>
</tbody>
</table>

Vocational choice theory, occupational and educational materials used in career planning. Not open to students with credit in Education 237. Offered during summer sessions only in combination with Education 231 as Education 237.

### Counseling: Individual and Group

<table>
<thead>
<tr>
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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>234</td>
<td>Theory and Process of Counseling</td>
<td>4</td>
<td>Consent of instructor.</td>
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</tbody>
</table>

Counseling theory and techniques for counseling, individual and group. Not open to students with credit in Education 238 or Psychology 233. Offered during summer sessions only in combination with Education 234 as Education 238.

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<tr>
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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>235A-235B-235C</td>
<td>Specialized Areas in Rehabilitation Counseling</td>
<td>2-2-2</td>
<td>Admission to Counselor Education.</td>
</tr>
</tbody>
</table>

Education 235A deals with the psychological aspects of disability, 235B with medical aspects of disability, and 235C with placement of the disabled.

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<th>Prerequisites</th>
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<tbody>
<tr>
<td>237</td>
<td>Appraisal and Vocational Choice</td>
<td>6</td>
<td>Five lectures and three hours of laboratory.</td>
</tr>
</tbody>
</table>

Measurement theory, interpretation of test results, vocational choice theory, occupational and educational information in career planning. Application to take the course must be made early during the preceding semester. Offered only during summer sessions.

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<th>Credits</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>238</td>
<td>Counseling: Individual and Group</td>
<td>6</td>
<td>Five lectures and three hours of laboratory.</td>
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</tbody>
</table>

Counseling theory and techniques, individual and group. Not open to students with credit in Education 234 or 235. Application to take the course must be made early during the preceding semester. Offered only during summer sessions.

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<tr>
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<th>Prerequisites</th>
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<tbody>
<tr>
<td>239A-239B</td>
<td>Professional Seminar in Guidance</td>
<td>3-3</td>
<td>Consent of instructor.</td>
</tr>
</tbody>
</table>

Study of selected areas in counseling and guidance culminating in a written project with emphasis on research and on counseling as a profession.

### Curriculum Construction and Evaluation in Elementary Education

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<th>Credits</th>
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<tbody>
<tr>
<td>240</td>
<td>Curriculum Construction and Evaluation in Elementary Education</td>
<td>3</td>
<td>Consent or concurrent registration in Education 211.</td>
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</table>

Advanced study of the research in curriculum development, construction, and evaluation.

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<tbody>
<tr>
<td>241</td>
<td>Seminar in Arithmetic in Elementary Education</td>
<td>3</td>
<td>Credit or concurrent registration in Education 211.</td>
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A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school arithmetic.

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<tbody>
<tr>
<td>242</td>
<td>Seminar in Reading in Elementary Education</td>
<td>3</td>
<td>Credit or concurrent registration in Education 211.</td>
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</table>

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.

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<tbody>
<tr>
<td>243A</td>
<td>Seminar in Social Studies in Elementary Education</td>
<td>3</td>
<td>Consent or concurrent registration in Education 211.</td>
</tr>
</tbody>
</table>

Problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field. (Formerly numbered Education 243.)
243B. Seminar in Elementary Social Studies Curriculum Development (3)
Prerequisite: Education 131B, and credit or concurrent registration in Education 211.
Current theories of instruction pertaining directly to elementary social studies teaching and curriculum development; critique of current social studies courses of study and guides; experience in elementary social studies curriculum planning at the classroom, school, and district levels.

244. Seminar in Language Arts in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of scientific research in the field.

245. Seminar in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
A study of the methodology of research with particular reference to the basic research in the psychology and teaching of the elementary school subjects.

249. Seminar in Science in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
Advanced study of the problems of teaching science in the elementary school with emphasis on the literature of science education.

249A. Seminar in Art in Elementary Education (3)
Prerequisite: Education 132B, credit or concurrent registration in Education 211.
Curriculum, materials, and techniques of instruction, including supervision.

249B. Seminar in Music in Elementary Education (3)
Prerequisite: Education 132C, credit or concurrent registration in Education 211.
Methods, materials, and curriculum. For elementary classroom teachers.

250. Guidance Problems in Secondary Education (3)
Prerequisites: Education 110 or equivalent, and student teaching or teaching experience.
The theory and practice of guidance emphasizing advanced mental hygiene concepts needed by teachers and counselors.

250. Curricular Problems in Secondary Education (3)
Prerequisite: Student teaching or teaching experience.
Present status and development of the secondary school curriculum with emphasis upon curriculum construction and curriculum evaluation. Opportunities for study of problems submitted by students.

251. Instructional Methods and Materials: Community College (2)
Prerequisites: Education 223 and concurrent registration in Education 316.
The teaching process at the community college level, including lesson planning, utilization of audiovisual and other instructional materials and procedures of evaluation.

252. Seminar for Student Teachers (3)
Prerequisites: Education 110 and 100. To be taken concurrently with Education 180C.
Advanced study in the application of principles and research related to planning instruction, selecting and using materials, evaluating instruction and pupil progress, maintaining class morale; school law and finance for classroom teachers.

253. Supervision of Student Teaching (2)
Open to experienced teachers interested in the teacher education program.
Study of selection, orientation, induction, counseling and evaluation of credential classroom learning, analyze pupils' difficulties and achievement.

254. Advanced Problems in Secondary School Instruction (3)
Prerequisites: Teaching experience and consent of instructor.
An analysis of the scientific research and philosophical principles in secondary school instruction.

255A. Advanced Curriculum and Instruction in Mathematics (3)
Prerequisite: Education 121F and teaching experience.
Factors directing the changing mathematics curriculum; recent trends and current research in the teaching of secondary mathematics.

255B. Advanced Curriculum and Instruction in Social Science (3)
Prerequisite: Education 121M and teaching experience.
Theories of content selection; social pressures which affect curriculum design; current research in curriculum development; trends in teaching techniques and materials.

255C. Advanced Curriculum and Instruction in English Language and Composition (3)
Prerequisites: English 191, 192, 193, Education 121B, and teaching experience.
Problems in the teaching of English language structure and composition skills in secondary schools; recent trends and current research.

255D. Advanced Curriculum and Instruction in Literature (3)
Prerequisites: Education 121B, 12 units of literature, and teaching experience.
Problems of selection, presentation, motivation, and evaluation in the teaching of literature in secondary schools, techniques of reading in the genres; recent trends and current research in the teaching of literature.

256. Recent Trends in Secondary Curriculum (3)
Prerequisites: 12 units in secondary education and consent of the instructor.
Current practices and trends in secondary schools. Extensive individual work on related problems of interest to members of the class.

257. Workshop in Intercultural Education (4)
Enrollment only by application to the Chairman of the Department of Education.
A co-operative workshop sponsored by the college and the San Diego City Schools to study trends in intercultural education in American schools, including units, curricular and instructional materials and techniques.

258. Research in Curricular Problems (1-3)
Admission by consent of the Coordinator of Secondary Education and instructor.
Individual study by graduate students who have demonstrated exceptional ability and a need for such work.

259. Seminar in Secondary School Reading (3)
Prerequisites: Education 122 and 211.
Sources of research on reading, reading and criticism of selected studies; identification of research trends and needs.

260. Principles of School Administration (3)
Federal, state and local school administrative relationships including the financial and legal structure at these three levels.

261. Education Leadership (3)
Prerequisites: Standard Teaching Credential and consent of instructor.
Concepts and techniques of leadership, analysis of the factors and practice in the procedures of group and individual leadership in four areas: (a) the community; (b) the teaching staff; (c) the student personnel; (d) the professional field of educational administration and supervision. (Formerly Education 278.)
262. Legal and Financial Aspects of School District Policies (3)
Prerequisite: Standard Teaching Credential.
Relating the school district to attendance units. The legal basis for policy formulation, the selection and retention of certified personnel, in the admission and assignment of pupils, in the instructional programs and in related budgetary considerations.

263. Curriculum Development and Evaluation (3)
Prerequisites: Standard Teaching Credential and consent of instructor.
Curriculum development in both elementary and secondary schools, with emphasis on interrelationships between these levels, responsibilities of curricular and supervisory personnel, and use of research.

264A-264B-264C. Seminar in Elementary School Administration and Supervision (2-2-2)
Prerequisite: Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.
Analysis of theories and practices in the administration and supervision of the elementary school.

265A-265B-265C. Seminar in Secondary School Administration and Supervision (2-2-2)
Prerequisite: Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.
Analysis of theories and practices in the administration and supervision of the secondary school.

266A-266B-266C. Seminar in Elementary School Administration and Supervision (1-1-1)
Prerequisite: Concurrent registration required in Education 264A, 264B, 264C.
Field experience in the elementary schools. Approval of local school district required in the semester prior to registration.

267A-267B-267C. Seminar in Secondary School Administration and Supervision (1-1-1)
Prerequisite: Concurrent registration required in Education 265A, 265B, 265C.
Field experience in the secondary schools. Approval of local school district required in the semester prior to registration.

282. School District Personnel Management (3)
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
Personnel relationships to include administrative relationships with the Board of Education and the school staff. Central office personnel procedures including recruitment, employment, placement, evaluation, promotional and training procedures.

283. District Curriculum Development, Evaluation and Improvement (3)
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
School District Curriculum development from kindergarten through junior college, relationships of the superintendent and central administrative staff to regular staff and supervisory staff.

284. Advanced Seminar in School Administration and Supervision (3)
Prerequisites: Standard Teaching Credential, Education 280, 281, 282, 283, and consent of instructor.
An intensive study of a selected area in school administration and supervision. May be repeated with new content for additional credit to a maximum of nine units. Typical courses in this area are School Law, School Finance, School Supervision, Personnel Procedures.

285A-285B. Seminar in School Building Construction and Utilization (3-3)
Prerequisite: Possession of Standard Administration or Supervision Credential, or consent of instructor. Completion of or concurrent registration in Education 285A is prerequisite to 285B.
School building construction and utilization: the development of new facilities from the planning stage to complete utilization; remodeling.

292. The Gifted Child (3)
Prerequisites: Education 110, or 111 and 112.
The abilities and characteristics of the intellectually gifted or talented; related problems of curriculum, teaching, administration and guidance.

295A. Seminar (3-3) Planning for the Master of Arts degree
Prerequisites: Education 211 and advancement to candidacy. An intensive study in selected areas of education culminating in a written project. Limited to students following Plan B for the Master of Arts degree in education.

298. Special Study (1-6)
Individual Study. Six units maximum credit. Prerequisite: consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
Student Teaching and Internship

316. Directed Teaching: Community College (4)
Prerequisites: Admission to Teacher Education and approval of the Community College program coordinator. Credit in Education 201 and 221 and concurrent registration in Education 251. Systematic observation, participation, and teaching under supervision in a community college. Any grade below C is unacceptable for a credential. A weekly seminar or conference is required.

330. Internship (2-6)
Supervised internship experience in counseling activities. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable on a master’s degree.

331. Field Work in Counseling (2-6)
Application of concepts and procedures of counseling services in appropriate school of agency setting. Daily observation and practice. Weekly seminar sessions with college staff. Application to take course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable on a master’s degree.

332. Practicum in Counseling (3)
Supervised experience in group and individual counseling and career planning. Application to take the course must be made early during the preceding semester. Maximum credit six units applicable on a master’s degree.

333. Advanced Seminar and Practicum in Counseling (3-6)
Supervised experience in group and individual counseling and study of problems, issues, and research. Application to take the course must be made early during the preceding semester.

360. Internship in School Administration and Supervision (3 to 6)
Prerequisites: Standard Teaching Credential and consent of instructor. Internship for prospective school administrators in the public schools. Released time, permission of school district, and preregistration with Coordinator of Program of Educational Administration previous semester required.

371. Directed Internship—Mentally Retarded (4)
Application to take the course should be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of the mentally retarded.

374. Directed Internship—Speech Correction (4)
Application to take the course should be made during the preceding semester. Extensive daily participation or teaching in public schools and preparation for the teaching of exceptional children in the area of speech correction.

375. Directed Internship for the Instructional Media Specialist (2-6)
Supervised internship in an instructional media center (application must be made during preceding semester.)

Educational Technology and Librarianship

225. Bibliography of the Humanities (2)
Prerequisite: Library Science 110. Survey and evaluation of bibliographical and reference materials in the humanities, with training and practice in their use in solving questions arising in reference service.

226. Bibliography of the Social Sciences (2)
Prerequisite: Library Science 110. Survey and evaluation of bibliographical and reference materials in the subject fields of the social sciences, with study of typical problems arising in reference service in these subjects.

227. Bibliography of the Sciences (2)
Prerequisite: Library Science 110. Survey and evaluation of representative reference sources in the pure and applied sciences. Study of typical problems encountered in providing and servicing scientific reference materials.

231. Literature for Children (3)
Prerequisite: Library Science 118. Survey and evaluation of literature and other library materials particularly suited to the use of the elementary school student. A critical study of standard, classic, and current books for children, together with aids and criteria for selection.

232. Literature for Adolescents (3)
Prerequisite: Library Science 118. Survey and evaluation of literature and other library materials particularly suited to the use of the high school student. A critical study of standard, classic, and current books for the adolescent, together with aids and criteria for selection.

274A. Seminar in Instructional Media Utilization (3)
Prerequisite: Education 140. Review of research in instructional media utilization.

275. Seminar in the Administration of Instructional Media Centers (3)
Prerequisite: Education 140. Organization, supervision, and coordination of instructional media centers.

276. Seminar in Programmed Instruction (3 to 6)
Prerequisite: Education 144. Theories of programmed instruction, with emphasis on construction of programs; application to teaching situations. Analysis and revision of programmed projects.
ENGINEERING

GENERAL INFORMATION

The School of Engineering offers graduate study leading to Master of Science degrees in Aerospace, Civil, Electrical, and Mechanical Engineering. These curriculums 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 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 curriculum in Engineering, with options in aerospace, civil, electrical and electronic, and mechanical engineering, is accredited by the Engineers' Council for Professional Development. Within the region served by San Diego State are to be found many industrial organizations which employ a considerable number of engineers holding the Master of Science degree.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing as described in Part Three of this bulletin, “Admission to the Graduate Division.” 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 any deficiency. Such courses, taken as an unclassified graduate, are in addition to the minimum of 30 units for the master's degree in engineering.

To be recommended for classified graduate standing and to be eligible to enroll in 200-numbered courses the student must further satisfy the special requirements of the appropriate field of engineering as stated below.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this bulletin.

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 bulletin. 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

Classified Graduate Standing: To be recommended for classified graduate standing in the Graduate Division and to be eligible to enroll in graduate (200-numbered) courses, a student must satisfy the general requirements for admission to the Graduate Division.

Specific requirements for the Degree: The student's program prepared in conference with his graduate adviser, must satisfy the following requirements:

(a) Fifteen units of 200-numbered courses in aerospace engineering and/or engineering mechanics including at least nine units in one area of concentration (designated as Group A, Group B, and Group C below) and excluding Engineering 290, 298, and 299.

(b) At least nine additional units of 100- or 200-numbered courses in the School of Engineering or in the departments of mathematics, physics, or astronomy, excluding Engineering 290 (Plan A), if elected.

(c) Six elective units of 100- or 200-numbered courses approved by the graduate adviser.

CIVIL ENGINEERING

Classified Graduate Standing: To be recommended for classified graduate standing in the Graduate Division and to be able to enroll in graduate (200-numbered) courses, a student must satisfy the general requirements for admission to the Graduate Division.

Specific Requirements for the Degree: The student's program, prepared in conference with his graduate adviser, must satisfy the following requirements:

(a) Eighteen units of 200-numbered courses in civil engineering, excluding Engineering 290, 298, and 299.

(b) At least six additional units of 100- or 200-numbered courses in the School of Engineering or in the College of Sciences, including Engineering 299, Plan A, if elected.

(c) Six elective units of 100- or 200-numbered courses approved by the graduate adviser.

ELECTRICAL ENGINEERING

Classified Graduate Standing: To be recommended for classified graduate standing in the Graduate Division and to be able to enroll in graduate (200-numbered) courses, a student must satisfy the general requirements for admission to the Graduate Division.

Specific Requirements for the Degree: The student's program, prepared in conference with his graduate adviser, must satisfy the following requirements:

(a) Eighteen units of 200-numbered courses in electrical engineering. A maximum of 6 units of 200-numbered courses in Mathematics or Physics may be used in partial fulfillment of this 18 unit requirement.

(b) At least six additional units of 100- or 200-numbered courses in the School of Engineering or in the Departments of Mathematics or Physics.

(c) Six elective units of 100- or 200-numbered courses approved by the graduate adviser.

AREAS OF CONCENTRATION IN AEROSPACE ENGINEERING

Group A: Fluid Dynamics

EM 241. Advanced Fluid Mechanics I (3)
EM 244. Advanced Fluid Mechanics II (3)
AE 241. Hydrodynamic Stability (3)
AE 242. Theory and Aerodynamics of Transonic Flight (3)
AE 243. Supersonic Flow Theory (3)
AE 244. Hypersonic Flow Theory (3)
AE 245. Magnetofluidmechanics (3)
AE 246. Rarefied and Real Gas Flows (3)

Group B: Engineering Mechanics

AE 222. Aerothermal Structural Analysis (3)
EM 221. Theory of Elasticity (3)
EM 222. Theory of Anisotropic Elasticity (3)
EM 223. Energy Methods in Mechanics (3)
EM 225. Theory of Plates (3)
EM 226. Theory of Shells (3)
EM 227. Elastic Stability (3)
EM 223. Theory of Plasticity (3)

Group C: Flight Dynamics

AE 202. Aerodynamics (3)
AE 204. Flight Dynamics—Stability and Control (3)
AE 205. Flight Dynamics—Theory of Flight Paths (3)
EM 201. Advanced Dynamics (3)
EM 203. Theory of Vibrations (3)
EM 204. Non-linear Vibrations (3)
EM 205. Theory of Random Vibrations (3)
MECHANICAL ENGINEERING

Classified Graduate Standing: To be recommended for classified graduate standing in the Graduate Division and to be eligible to enroll in graduate (200-numbered) courses, a student must satisfy the general requirements for admission to the Graduate Division.

Specific Requirements for the Degree: The student's program, prepared in conference with his graduate adviser, must satisfy the following requirements:

(a) Fifteen units of 200-numbered courses in mechanical engineering excluding Engineering 290, 296, 299, and Mechanical Engineering 297.

(b) At least nine additional units of 100-or 200-numbered courses in the School of Engineering.

(c) Six elective units of 100- or 200-numbered courses approved by the graduate adviser.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching 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.

FACULTY

Dean, School of Engineering: M. P. Capp, M.S.
Associate Dean, School of Engineering: F. T. Quigg, M.S.
Chairman, Department of Aerospace Engineering and Engineering Mechanics: J. F. Conly
Chairman, Department of Civil Engineering: F. E. Straton
Chairman, Department of Electrical Engineering: V. R. Learned
Chairman, Department of Mechanical Engineering: R. A. Fitz
Graduate Advisers: J. F. Conly, Aerospace Engineering; F. E. Straton, Civil Engineering; V. R. Learned, Electrical Engineering; C. R. Lodge, Electrical Engineering; R. J. Murphy, Mechanical Engineering.


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

UPPER DIVISION COURSES IN ENGINEERING

In order to provide the individual graduate student with a maximum of flexibility in pursuing his advanced studies, a maximum of six units in engineering courses other than those listed below may be elected by the student subject to the approval of his graduate adviser and the department chairman.

Aerospace Engineering Programs

109. Nonmetallic Materials (3)
112. Advanced Network Analysis (3)
114. Analysis and Design of Electronic Circuits (3)
116L. Electronic Circuits Laboratory (1)
114. Communication Circuits (3)
114L. Communication Circuits Laboratory (1)
137. Communication Networks (3)
140. Principles of Heat Transfer (3)
134. Communication Circuits (3)
134L. Communication Circuits Laboratory (1)
139L. Microwave Measurements Laboratory (3)
139. Microwave Measurements (3)
144. Microwave Devices (3)
144B. Advanced Machine Design (3)
147A. Introduction to Mechanical Vibrations (3)
147B. Experimental Vibrations (3)
151B. Intermediate Aerospace Flight Mechanics (3)
155. Matrix Methods in Aerospace Structures (3)
156. Advanced Dynamics (3)
157. Intermediate Fluid Mechanics (3)
158. Aircraft Design and Performance (3)
167. Control Systems Components (3)
167L. Control Systems Components Laboratory (1)
169L. Feedback Control Systems Laboratory (1)
181. Hydrodynamics (3)
187B. Methods of Analysis (3)
188. Digital Solutions of Engineering Problems (3)
189. Automatic Control Systems (3)
190. Advanced Engineering Topics (1-3)

Civil Engineering Programs

113. Stochastic Signals (3)
114. Communication Circuits (3)
114L. Communication Circuits Laboratory (1)
115. Modulation Theory (3)
119. Microwave Communications (3)
120. Microwave Measurements Laboratory (1)
144. Thermal Environmental Engineering (3)
146. Advanced Heating and Cooling (3)
148. Advanced Engineering Topics (1-3)

Electrical Engineering Programs

128. Advanced Engineering Topics (1-3)
131. Communication Circuits (3)
131A. Communication Circuits Laboratory (1)
131B. Advanced Machine Design (3)
147A. Introduction to Mechanical Vibrations (3)
147B. Experimental Vibrations (3)
151B. Intermediate Aerospace Flight Mechanics (3)
155. Matrix Methods in Aerospace Structures (3)
156. Advanced Dynamics (3)
157. Intermediate Fluid Mechanics (3)
158. Aircraft Design and Performance (3)
167. Control Systems Components (3)
167L. Control Systems Components Laboratory (1)
169L. Feedback Control Systems Laboratory (1)
181. Hydrodynamics (3)
187B. Methods of Analysis (3)
188. Digital Solutions of Engineering Problems (3)
189. Automatic Control Systems (3)
190. Advanced Engineering Topics (1-3)

Mechanical Engineering Programs

109. Nonmetallic Materials (3)
112. Advanced Network Analysis (3)
114. Analysis and Design of Electronic Circuits (3)
116L. Electronic Circuits Laboratory (1)
114. Communication Circuits (3)
114L. Communication Circuits Laboratory (1)
137. Communication Networks (3)
140. Principles of Heat Transfer (3)
142. Elements of Energy Conversion (3)
144. Thermal Environmental Engineering (3)
146B. Advanced Machine Design (3)
147A. Introduction to Mechanical Vibrations (3)
147B. Experimental Vibrations (3)
151B. Intermediate Aerospace Flight Mechanics (3)
155. Matrix Methods in Aerospace Structures (3)
156. Advanced Dynamics (3)
157. Intermediate Fluid Mechanics (3)
158. Aircraft Design and Performance (3)
167. Control Systems Components (3)
167L. Control Systems Components Laboratory (1)
169L. Feedback Control Systems Laboratory (1)
181. Hydrodynamics (3)
187B. Methods of Analysis (3)
188. Digital Solutions of Engineering Problems (3)
189. Automatic Control Systems (3)
190. Advanced Engineering Topics (1-3)
GRADUATE COURSES IN AEROSPACE ENGINEERING

AE 200. Seminar (1-3)
Prerequisite: Consent of the graduate adviser and instructor. Intensive study of selected topics in aerospace engineering, topic to be announced in class schedule. Maximum credit 6 units applicable on a master's degree.

AE 202. Aeroelasticity (3)
Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Engineering 187B or Mathematics 138B. Aircraft and missile structures deformed under static and dynamic loads; aeroelastic instability, vibration modes, divergence, loss of control and alteration of lift distribution; introduction to flutter analysis.

AE 204. Flight Dynamics—Stability and Control (3)

AE 205. Flight Dynamics—Theory of Flight Paths (3)
Prerequisite: Engineering 150B. Analysis of trajectories of aircraft, missiles, satellites, and spacecraft subjected to uniform or central gravitational forces, aerodynamic forces, and thrust.

AE 211. Aerodynamic Noise (3)
Prerequisite: EM 243. Jet noise, sonic boom, boundary layer noise, and methods of suppression.

AE 222. Aerothermal Structural Analysis (3)
Prerequisite: Engineering Mechanics 221. Stress analysis of structures at elevated temperatures.

AE 241. Hydrodynamic Stability (3)

AE 242. Theory and Aerodynamics of Transonic Flight (3)
Prerequisite: Aerospace Engineering 243. Application of engineering principles to the analysis of transonic flight.

AE 243. Supersonic Flow Theory (3)
Prerequisite: Engineering 150B. Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady flight, slender-body theory, methods of characteristics.

AE 244. Hypersonic Flow Theory (3)

AE 245. Magnetofluidmechanics (3)
Prerequisite: EM 243. Study of the effects of interaction of an electromagnetic field with an electrically conducting fluid. Stability, boundary layers, shock waves, and other applications.

AE 246. Rarefied and Real Gas Flows (3)
Prerequisite: Engineering 187B. Kinetic theory, the Boltzmann equation, the hydrodynamic equations, Chapman-Enskog Theory. Real gases and chemical reactions. Approximations: applications to shock structure, Analyses of rarefied flows, heat transfer, and hypersonics. Free molecule flow.

AE 250. Principles of Electromagnetic Propulsion (3)
Prerequisite: Engineering 187B. Basic concepts of plasmas and magnetogasdynamics; developing magnetogasdynamic power plants.

AE 253. Seminar on Boundary Layer Topics (3)
Prerequisite: EM 244. Boundary layer control, dissociation in boundary layers, ablation in boundary layers.

AE 296. Advanced Topics in Aerospace Engineering (2 or 3)
Advanced study in the field of aerospace engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

AE 297. Research (1-3)
Prerequisite: Consent of graduate adviser. Research in engineering. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN CIVIL ENGINEERING

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

CE 201. Advanced Theory of Structures (3)
Prerequisites: Engineering 120B and Mathematics 18A. Analysis of statically indeterminate structures based on principles of deflected shapes. Use of structural analysis and design of structures under lateral loads for rigid and shear wall structures. Approximate analysis of structures for ultimate loads. Theory of curved beams. Design of simple structures based on theory of structures.

CE 202. Design of Thin Shell Structures (3)
Prerequisite: Engineering 120B. Analysis and design of typical civil engineering thin shell structures.

CE 203. Plastic Design in Steel (3)
Prerequisite: Engineering 120B. Analysis and design of steel framed structures for ultimate load. Connections, secondary design problems, column stability, and repeated loading.

CE 205. Prestressed Concrete Structures (3)
Prerequisite: Engineering 120B. Analysis and design of prestressed concrete structures. Approximate analysis of structures under lateral loads for rigid and shear wall structures.

CE 206. Matrix Analysis of Structures (3)

CE 207. Dynamics of Structures (3)
Prerequisite: Engineering 120B. Dynamic disturbances, structures with variable degrees of freedom, free vibrations of slender elastic beams; continuous beams, rigid frames, floor systems. Energy methods in structural dynamics.

CE 208. Numerical Methods in Structural Engineering (3)
Prerequisite: Engineering 120B. Moments and deflections in beam systems; elastic and inelastic stability; columns and beams on elastic supports, vibration of structural systems.
CE 209. Computer Analysis of Structures (3)
Prerequisites: Engineering 40 and 120B.
Fundamentals of matrix notation, equilibrium equations, compatibility relations, constitutive equations, joint releases, General algorithm for writing computer programs for space structures, trusses and frames. Use of existing programs such as ICES/STRUDL, NASTRAN, etc., for solving actual problems.

CE 210. Finite Element Analysis of Structures (3)
Prerequisites: Engineering 40 and 120B.
General procedure, various types of finite elements; analysis and design of isotropic and orthotropic plates and shells, deep beams, and shear walls using finite element technique; use of digital computers for solutions. Application to civil engineering structures.

CE 220. Traffic Engineering (3)
Prerequisite: Engineering 127.
Traffic characteristics and studies. Control and regulation of street and highway traffic. Parking facilities, mass transportation, traffic engineering administration.

CE 221. Airport Engineering (3)
Prerequisite: Engineering 127.
Problems in airport planning and design. Site selection, general airport layout; safety, economy and community compatibility. Functional design of buildings. Lighting, navigational aids, approach protection.

CE 222. Mass Transit Engineering (3)
Prerequisite: Engineering 126.
Urban transportation and land use, characteristics of urban travel patterns, estimation of transit usage, planning of transit systems, economic problems of mass transportation. Case studies of existing and proposed systems.

CE 230. Open Channel Hydraulics (3)
Prerequisite: Engineering 123.
Open channel flow theory, analysis, and problems, including studies of critical flow, uniform flow, gradually varied and rapidly varied flow, all as applied to the design of channels, spillways, energy dissipators, and gravity pipelines.

CE 231. Engineering Hydrology (3)
Prerequisite: Engineering 123.
Measurement and interpretation of precipitation, evapotranspiration, stream flow and groundwater flow; hydrologic methodology and applications.

CE 232. Fluvial Hydraulics (3)
Prerequisite: Engineering 123.
Characteristics of rivers; mechanics of sediment transport; hydraulics and design of alluvial channels; channel stability; model studies.

CE 235. Water Quality Engineering (3)
Prerequisites: Engineering 123 and 125.

CE 236. Water Quality Processes I (3)
Two lectures and three hours of laboratory.
Prerequisite: Civil Engineering 235 or concurrent registration with consent of instructor.
Theoretical and laboratory study of the chemical and microbiological processes which govern modern water and wastewater treatment.

CE 240. Advanced Soil Mechanics (3)
Prerequisite: Engineering 122.
Advanced theories of soil mechanics and their applications to design, including physicochemical behavior of soils, theories of compaction, consolidation, stress distribution, shear strength, settlement analyses, lateral pressures, and bearing capacity of soils.
EE 230. Seminar in Digital Systems (1-3)
An intensive study in digital systems. Maximum credit six units applicable on a master's degree.

EE 204. Seminar in Feedback Control Systems (1-3)
An intensive study in feedback control systems. Maximum credit six units applicable on a master's degree.

EE 210. Linear System Analysis (3)
Prerequisites: Engineering 111 and credit or concurrent registration in Engineering 118B or Mathematics 118B.
Loop and nodal system equations based on topological considerations, four-terminal network theory using matrices. Fourier integral transform theory as applied to linear system analysis. Positive real functions and associated testing methods.

EE 211. Linear System Synthesis (3)
Prerequisite: EE 210.
Frequency-domain synthesis of driving point and transfer impedances in passive and active networks. Canonical forms and network equivalents. Time-domain synthesis and considerations of pulsed-data systems.

EE 212. Synthesis of Linear Active Networks (3)
Prerequisite: Electrical Engineering 211.
Synthesis of linear networks using active elements such as controlled sources, negative-impedance converters, gyrators and operational amplifiers.

EE 214. Computer-aided Network Analysis and Design (3)
Prerequisites: EE 210 and Fortran Programming.
Elements of approximation theory, device modeling, topological analysis of networks, applications of general purpose computer programs, design of passive and active filters, circuit optimization and other related topics.

EE 216. Noise in Electrical Devices (3)
Prerequisite: Engineering 162.
Models, types and origins of electrical noise and the effects of noise on system behavior. Emphasis on concepts of noise as a random process, as distinguished from systematic or periodic interference.

EE 220. Feedback Control Systems (3)
Prerequisite: Engineering 168.
Analysis and synthesis of feedback control systems using feedback compensation. Multiple-loop control systems; a-c feedback control systems; optimization.

EE 222. Sampled-Data Systems (3)
Prerequisite: Engineering 168.
Analysis and synthesis of sampled-data and digital control systems; techniques for the design of time-optimal sampled-data control systems; z-transform calculus and response. (Formerly entitled: Non-Linear Systems.)

EE 223. State Space Analysis of Control Systems (3)
Prerequisite: Engineering 168.
State space representation of control systems, state transition flow graphs, methods of solution of the state equation, controllability and observability, and introduction to optimal control systems.

EE 230. Topics in Logic Design (3)
Prerequisite: Engineering 177.
Threshold logic, adaptive logic networks, magnetic core logic synthesis, functional design algorithms by digital computer.

EE 231. Integrated Circuits (3)
Prerequisite: Engineering 174.
Fabrication methods, logic gates, multivibrators, medium- and large-scale integration techniques and devices. Linear integrated circuits and MOS technology. Emphasis on proper application of devices through knowledge of circuit operation and interpretation of manufacturers' specification sheets.

EE 233. Microcomputer Systems (3)
Prerequisite: Engineering 162.
Introduction to microprocessor systems, design of microcomputer systems, microcomputer interfacing, memory design, processor instruction set and application program development.

EE 234. Semiconductor RF Circuit Design (3)
Prerequisite: Engineering 162.
Wideband amplifiers, high frequency circuit design, high speed switching circuits, frequency modulation and demodulation.

EE 235. Electronic Digital Systems (3)
Prerequisites: Engineering 177 and 178.
Design of arithmetic, control and memory units. Detailed comparative analysis of the system organization and operation of several digital computers, with special emphasis on the interdependence of design decisions and their dependence upon the intended system application.

EE 240. Radiation and Propagation (3)
Prerequisite: Engineering 159.
Impedance characteristics and radiation patterns of thin linear antenna elements; far and near-field intensity calculations. Tropospheric and ionospheric propagation; propagation anomalies.

EE 242. Microwave Networks (3)
Prerequisite: Engineering 159.
Equivalent circuits for waveguide discontinuities developed on the basis of mode theory, linearity, reciprocity, and symmetry. Application of general network theory to wave guides, cavity resonators and antennas.

EE 246. Radar Systems (3)
Prerequisite: Engineering 159.
The radar equation; characteristics of CW, FM, MTI, pulse-doppler and tracking radar systems; transmitters, antennas and receivers; detection of signals in noise, extraction of information; propagation effects; system engineering and design.

EE 250. Quantum Electronics (3)
Quantum mechanics for engineers concerned with its application to solid-state devices and optical communication systems.

EE 252. Optical Communications (3)
Prerequisite: EE 250.
Fundamentals of electro-optical technology from ultraviolet to infrared. Characteristics of thermal and laser radiation including generation, transmission, detection, data processing and display.

EE 254. Communication Theory (3)
Prerequisite: EE 250.
Advanced study in the field of electrical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

EE 297. Research (1-3)
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.
EM 226. Theory of Sh II
Prerequisite: EM 225.
Stability of elastic systems; Differential equations of stability by summation of forces and movements, and by the variational method. Applications.

EM 227. Theory of Elastic Stability (3)
Prerequisite: EM 221.
Stability of elastic systems; Differential equations of stability by summation of forces and movements, and by the variational method. Applications.

EM 233. Theory of Plasticity (3)
Prerequisite: Engineering Mechanics 221.
Inelastic stress-strain relations. Solutions to engineering problems with ideally-plastic, strain-hardening, and visco-elastic materials.

EM 243. Advanced Fluid Mechanics I (3)
Prerequisite: Engineering 115 and credit or concurrent registration in Engineering 187B or Mathematics 118B.
Fluid kinematics and kinetics. Conservation of mass, energy, and momentum, applied to Newtonian fluids. Navier-Stokes equations, Conette and Poiseuille flow, Potential flow. Introduction to turbulence and boundary layer theory. Vector and tensor notation will be used.

EM 244. Advanced Fluid Mechanics II (3)
Prerequisite: Engineering Mechanics 243.

EM 296. Advanced Topics in Engineering Mechanics (2 or 3)
Advanced study in the field of engineering mechanics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

EM 297. Research (1-3)
Research in engineering. Maximum credit six units applicable on a master's degree.
ME 206. Seminar in Nuclear Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in nuclear engineering. Maximum credit six units applicable on a master's degree.

ME 220A-220B. Mechanical Vibrations (3-3)
Prerequisites: Engineering 147B, 183, and 187B.
Topics in vibration relating to mechanical design such as non-linear vibrations, distributed mass systems, random vibrations, mobility analysis, isolator design.

ME 211. Stress Analysis (3)
Prerequisites: Engineering 146B and 187B.
Topics in applied elasticity, advanced study of the resistance of materials and experimental stress analysis. Failure theories, energy methods, limit design, theory of plates and shells. Photoclasticity, brittle lacquers, strain gages, and analogs in determining static, dynamic and residual stress distributions.

ME 222A-222B. Synthesis of Machines (3-3)
Prerequisites: Engineering 183 and 187B.
Problems in mechanical design involving synthesis of mechanisms wherein displacement, velocity, acceleration and jerk are paramount considerations.

ME 224. Fluid Power and Control Systems (3)
Prerequisite: Engineering 189.
Analysis of dynamic performance of physical systems such as pneumatic, hydraulic and hot-gas. Transient forces and valve instability. Servo characteristics.

ME 231. Advanced Science of Materials (3)
Prerequisite: Engineering 107.
Structure and physical properties of solids, imperfections in materials and their effect on various properties. Elasticity, plasticity, and fracture of metals related to atomic and crystal structure.

ME 232. Physical Metallurgy for Engineers (3)
(Formerly ME 231B. Advanced Science of Materials II)
Prerequisites: Engineering 107 and 108.
Fundamentals of crystallography, imperfections, alloying and deformation. Composition, temperature, prior thermal and mechanical treatment on structure of metal; relationship of structure to mechanical properties.

ME 233. Mechanical Metallurgy for Engineers (3)
(Formerly ME 233, Reactor Materials)
Prerequisites: Engineering 107 and 108.
Fundamentals of plastic deformation of crystalline solids, elementary theory of statics and dynamics of dislocations, deformation, fracture and metallurgical variables on mechanical properties; environment-failure interactions.

ME 234. High Temperature Materials (3)
Prerequisite: Engineering 107.
Behavior of metals, cermets, and nonmetallic materials at high temperatures. Effect of environment and service conditions on composition, structure, and physical properties.

ME 246. Advanced Topics in Automatic Controls (3)
Prerequisites: Engineering 187A and 189.
Synthesis of linear control systems. Analysis of nonlinear systems by describing techniques and adaptive control.
ME 296. Advanced Topics in Mechanical Engineering (2 or 3)
Advanced study in the field of mechanical engineering, topic to be announced
in the class schedule. Maximum credit six units applicable on a master's degree.

ME 297. Research (1-3)
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN ENGINEERING

E 290. Problem Analysis (3)
Prerequisite: Consent of graduate adviser.
Review of methods for investigation and reporting of data. Consideration of problems in preparation of project or thesis.

E 298. Special Study (1-3)
Individual study. Three units maximum credit.
Prerequisite: Consent of staff, to be arranged with department chairman and instructor.

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

ENGLISH

GENERAL INFORMATION
The Department of English, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in English.

ADMISSION TO THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. Graduates from San Diego State must have completed a minimum of 24 units of upper division English courses in which at least 18 units must be in 200-numbered courses, exclusive of thesis.

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 bulletin, the student must complete a graduate program which includes a major consisting of at least 24 units in English from courses listed below as acceptable on master's degree programs, of which at least 18 units must be in 200-numbered courses, exclusive of thesis.

In addition to the above requirements, the candidate must enroll in English 299, Thesis, and demonstrate a reading knowledge of a relevant foreign language. A student may meet the foreign language requirement by passing the Graduate School Foreign Language Test, by passing a local examination if the language is not served by the above test, or by achieving a grade of "C" or better in a three-unit upper division course in a foreign language of "C" or better in a three-unit upper division course in a foreign language.

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 bulletin.

SPEIICIFIC 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 bulletin, the student must complete a graduate program which includes a major consisting of at least 24 units in English from courses listed below as acceptable on master's degree programs, of which at least 18 units must be in 200-numbered courses, exclusive of thesis.

In addition to the above requirements, the candidate must enroll in English 299, Thesis, and write a thesis under departmental supervision. A student may meet the foreign language requirement by passing the Graduate School Foreign Language Test, by passing a local examination if the language is not served by the above test, or by achieving a grade of "C" or better in a three-unit upper division course in a foreign language.

For the regular program, the required courses are:

English 290, Bibliography and Methods of Literary Research
Any two courses in early English language and literature (English 103, 180, 221, 224, 214), if not previously taken
English 299, Thesis
English electives to make up 24 unit minimum
Other electives (which may be in English) to make up 30 unit Master of Arts requirement

Total

Not more than three units from among English 140, 142, 144, 170, 171, 172, and 260 may count in any program other than the creative writing program described above.
The Creative Writing Section conducts a nation-wide competition in English, the essay, poetry, and drama. Two graduate teaching assistantships are awarded to winners of the competition. Applications and supporting samples of writing are available to a limited number of qualified students. Application blanks are mailed to San Diego State and are continuing work towards a higher degree or credential.

ASSISTANTSHIPS AND SCHOLARSHIPS

Graduate teaching assistantships and graduate non-teaching assistantships in English are available to a limited number of qualified students. Application blanks and additional information may be secured from the Chairman of the Department.

To be advanced to candidacy in the creative writing program, a student must submit a sample of his writing or work in progress for approval as thesis level achievement by a committee of three of the faculty in the creative writing area.

FACULTY

Acting Chairman, Department of English: Lowell Tozer, Ph.D.

Program in creative writing: For a student wishing to submit a thesis of creative writing, the required courses are:
- English 290, Bibliography and Methods of Literary Research
- English seminars
- One course in early English language and literature (English 103, 180, 221, 224, 234), if not previously taken

A minimum of two creative writing courses from English 140, 142, 144, 149, 153, 170, 172, and 260 (not more than nine units from among these eight courses may count as part of the basic 24-unit requirement)

Total

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ENGLISH

UPPER DIVISION COURSES

101. Shakespeare (3)
102. Study of Shakespeare (3)
103. Chaucer (3)
104. Milton (3)
110. The Bible as Literature (3)
111. Renaissance Literature (3)
112. Seventeenth Century Literature (3)
113. Eighteenth Century Literature (3)
114. Nineteenth Century British Poetry (3-3)
115. Nineteenth Century British Prose (3)
116. Modern British Poetry (3)
117. Modern British Fiction (3)
118. Modern British Drama (3)
119. English Fiction (3-3)
121A-121B. English Drama (3-3)
129. Modern Poetry and Fiction (3)
130. Early American Literature (3)
131. The American Renaissance (3)
132. American Realism and Naturalism (3)
134. Modern American Fiction (3)
135. Modern American Poetry (3)
136. American Drama (3)
138. Topics in American Studies (3)
139. Topics in American Literature (3)
140. Poetry (3)
142. Fiction (3)
144. Drama (3)
149. Topics in the Study of Literary Genres (3)
150. The History of Literary Criticism (3)
153. Modern Criticism (3)
170. The Writing of Poetry (3)
171. The Writing of Fiction (3)
172. The Writing of Non-Fiction (3)
175. Advanced Composition (3)
176. Advanced English Literature (3)
180. The English Language (3)
181. The Structure of English (3)
182. American English (3)
183. English Linguistics (3)
184. Phonemics and Morphemics (3)
190. Selected Topics in English (2-3)
198. Comprehensive Reading and Survey (3)

GRADUATE COURSES

220. Indo-European (3)
Prerequisite: Anthropology 120 or English 183. Phono
tology, morphology, and syntax of the Indo-European language community, with special attention to "Centum" and "Satem" relationships.

224. Middle English (3)
Prerequisites: Twelve units of upper division work in English. Elementary grammar and readings in Old English prose and poetry; introduction to Beowulf.

232. Old English (3)
Prerequisites: Twelve units of upper division work in English. Elementary grammar and readings in Old English prose and poetry, exclusive of Beowulf.

234. Modern English (3)
Modern linguistic analyses of the Middle English language; emphasis on the development of historical English dialects.

233. American Literature (3)
Prerequisite: Twelve units of upper division work in English, with courses in American literature strongly recommended. Selected works of an author, period, or subject in American literature. Maximum credit six units applicable on a Master's degree.

234. Literature of the Middle Ages (3)
Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the Middle Ages with emphasis on Middle English prose and poetry exclusive of Chaucer.

235. Renaissance Literature (3)
Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the Renaissance.

236. Restoration and Eighteenth Century Literature (3)
Prerequisite: Twelve units of upper division work in English. Selected works in the literature of the late seventeenth and the eighteenth centuries.
237. Earlier Nineteenth Century Literature (3)
Prerequisite: Twelve units of upper division work in English.
Selected works in the literature of the early nineteenth century.

238. Later Nineteenth Century Literature (3)
Prerequisite: Twelve units of upper division work in English.
Selected works in the literature of the later nineteenth century.

239. Twentieth Century Literature (3)
Prerequisite: Twelve units of upper division work in English.
Selected works in the literature of the twentieth century.

243. Poetry (3)
Prerequisite: Twelve units of upper division work in English.
Poetry as a literary form.

244. Fiction (3)
Prerequisite: Twelve units of upper division work in English.
Fiction as a literary form.

245. Drama (3)
Prerequisite: Twelve units of upper division work in English.
The drama as a literary form.

260. Workshop in Creative Writing (3)
Prerequisite: Consent of instructor and departmental adviser.
Criticism and coaching in the larger forms. Maximum credit six units applicable on a master's degree.

290. Bibliography and Methods of Literary Research (3)
Prerequisite: Twelve units of upper division English.
Basic reference works, scholarly and critical journals; introduction to bibliographical techniques; exercises and problems in methods and exposition of research, including editorial procedures. Recommended for the first semester of graduate work. Prerequisite to graduate seminars.

291. Seminar: A Major Author (3)
Prerequisite: An appropriate upper division or graduate level background course, and English 290.
The critical study of a major author, such as Shakespeare, Dickens, Mark Twain. May be repeated with new content; maximum credit six units applicable on a master's degree.

292. Seminar: A Cultural Period (3)
Prerequisite: An appropriate upper division or graduate level background course, and English 290.
Advanced study, through its literature, of a cultural period such as the Renaissance, the Enlightenment, the Romantic Revolution. May be repeated with new content; maximum credit six units applicable on a master's degree.

293. Seminar: A Literary Problem (3)
Prerequisite: English 290.
Advanced study of a literary problem, such as Regionalism in America, or European influences on American literature. May be repeated with new content; maximum credit six units applicable on a master's degree.

294. Seminar: A Literary Type (3)
Prerequisite: English 290.
Advanced study of a literary type, such as the Personal Essay, Epic, Tragedy. May be repeated with new content; maximum credit six units applicable on a master's degree.

295. Seminar in Linguistics (3)
Prerequisite: Completion of three units of 200-numbered courses in the master's program for Linguistics.
Research in linguistics, course content varying according to instructor. Maximum credit six units applicable to a master's degree.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
FAMILY STUDIES AND CONSUMER SCIENCES

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 THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division as described in Part Three of this bulletin. Undergraduate preparation and the basic requirements for the master's degree as described in Part Three of this bulletin in addition to a bachelor's degree in home economics, or a related field, and meet the prerequisites of the courses selected. If a student's undergraduate preparation is deemed insufficient, he will be required to complete specified courses in addition to the minimum of 30 units required for the master's degree in Home Economics.

ADVANCEMENT TO CANDIDACY
All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this bulletin.

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 bulletin, the student must complete a graduate program of at least 30 units which includes at least 24 units from courses listed below as acceptable on master's degree programs in home economics, of which at least 15 units must be in 200-numbered courses in home economics, including Family Studies and Consumer Sciences 290, 299, Thesis.

ASSISTANTSHIPS
Graduate teaching assistantships and graduate non-teaching 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.

FACULTY
Director, Family Studies and Consumer Sciences: Don W. Thiel, Ph.D.
Graduate Adviser: Don W. Thiel
Credential Adviser: Kathleen J. Martin
Associate Professors: Zoe E. Anderson, Ph.D.; Barbara E. Gunning, Ph.D.; Quentin Lee Price, Ph.D.; Rose M. Somerville, Ed.D.
Assistant Professors: Wilma T. Boggs, M.S.; Shirley O. Breeden, M.S.; Mary E. J. Martin, M.S.; Kaye Hambleton, M.A.; Nancy L. Kwallek, M.S.; Kathleen Ph.D.; Cherie Schupp, Ph.D.

ASSISTANT PROFFESSORS: Wilma E. Anderson, Zoe E. Anderson
ASSOCIATE PROFFESSORS: Zoe E. Anderson, Ph.D.; Barbara E. Gunning, Ph.D.; Quentin Lee Price, Ph.D.; Rose M. Somerville, Ed.D.
ASSISTANT PROFESSORS: Wilma T. Boggs, M.S.; Shirley O. Breeden, M.S.; Mary E. J. Martin, M.S.; Kaye Hambleton, M.A.; Nancy L. Kwallek, M.S.; Kathleen Ph.D.; Cherie Schupp, Ph.D.

ASSISTANT PROFFESSORS: Wilma E. Anderson, Zoe E. Anderson
ASSOCIATE PROFFESSORS: Zoe E. Anderson, Ph.D.; Barbara E. Gunning, Ph.D.; Quentin Lee Price, Ph.D.; Rose M. Somerville, Ed.D.
ASSISTANT PROFESSORS: Wilma T. Boggs, M.S.; Shirley O. Breeden, M.S.; Mary E. J. Martin, M.S.; Kaye Hambleton, M.A.; Nancy L. Kwallek, M.S.; Kathleen Ph.D.; Cherie Schupp, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN HOME ECONOMICS

UPPER DIVISION COURSES

102. Advanced Nutrition (3)
103. Quantity Cookery (3)
194. Institutional Food Organization and Management (3)
105. Experimental Foods (3)
106. Diet Therapy (3)
118. Flat Pattern Design (3)
119. Textile Analysis and Testing (3)
120. Clothing and Human Behavior (3)
121. Clothing Design: Draping (3)
122. Clothing Design: Historical Influences (3)
136. Family Study (3)

GRADUATE COURSES

Foods and Nutrition

200. Seminar: Foods and Nutrition (3)
Prerequisites: Family Studies and Consumer Sciences 100 and 102.
An intensive study of research in technological advances in the fields of foods and nutrition, with emphasis on professional organizations and ethical procedures.

203. Advanced Readings in Food Technology (3)
Prerequisite: Family Studies and Consumer Sciences 100.
Reading and analysis of selected research in food technology.

204. Advanced Readings in Nutrition (3)
Prerequisite: Family Studies and Consumer Sciences 102.
Reading and analysis of selected research in nutrition.

205. Assay for Nutrients in Foodstuffs and Tissues (3)
Two lectures and three hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 100 and 102.
Determinations of energy values, organic nutrients, and minerals in foodstuffs and tissues by chemical, biological, and microbiological methods.

206. Physiological Bases of Diet Therapy (3)
Prerequisite: Family Studies and Consumer Sciences 106. Chemistry 115B or 116B is recommended.
The biochemical and/or physiological lesions in pathological states and the modifications of diet which should accompany medical treatment to prevent or alleviate patient symptoms.

207. Child Nutrition (3)
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 102.
Conditions leading to malnutrition, the prevention and correction of same.

General Home Economics

215. Seminar: Clothing (3)
Prerequisites: Nine units in the area of clothing.
Selected problems in the field of clothing.

216. Seminar: Textiles (3)
Prerequisites: Family Studies and Consumer Sciences 119 and consent of instructor.
Current literature and experimental research in fiber and fabric technology related to consumer use.
299. History of Textiles and Clothing (3)
Prerequisite: Six units in art, anthropology, sociology, or psychology.
Textile and clothing development from ancient times to the present as related to socio-economic and political influences.

251. Seminar: Home Economics Education (3)
Prerequisites: 18 units in Family Studies and Consumer Sciences and consent of instructor.
The study and evaluation of home economics research and philosophical principles which have implications for the secondary homemaking teacher.

282. Current Development in Home Economics Education (3)
Prerequisites: Education 121C or the equivalent, and 18 units in Family Studies and Consumer Sciences.
Current issues and recent developments in home economics education with implications for secondary and post high school programs.

231. Family Life Education (3)
Prerequisite: Three units in Family Relations.
Methods and materials in family life education for schools, colleges, churches, and social agencies.

234. Seminar: Marriage Adjustment (3)
Prerequisite: Family Studies and Consumer Sciences 135.
Individual study, seminar reports, and group discussion of selected topics in marriage adjustment.

240. Seminar in Family Economics (3)
Prerequisite: Upper division course in family finance.
Personal financial practices under changing conditions. Review of literature in family financial management.

251. Seminar in Home Management (3)
Prerequisite: Upper division course in home management and related areas.
Recent research in home management.

270. Seminar in Child Development and Guidance (3)
Prerequisite: Consent of instructor.
Emphasis on personality theories and on research and clinical findings relevant to a systematic study of human development and the guidance of children.

271. Advanced Readings in Human Development (3)
Prerequisites: Family Studies and Consumer Sciences 70 and 179.
Analysis of selected research in human development.

290. Bibliography and Methods of Research (3)
Prerequisite: 12 upper division or graduate units in Family Studies and Consumer Sciences.
Reference materials, bibliography, investigation of current research in home economics, process of thesis topic selection, and techniques of scholarly writing.

298. Special Study (1-3)
Prerequisite: Consent of staff, to be arranged with the Director and instructor.
Individual study. Six units of maximum credit.

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

FRENCH

GENERAL INFORMATION
The Department of French and Italian, 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 THE GRADUATE DIVISION
The student must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. An undergraduate major in French including 24 upper division units must have been completed, at least six units of which must have been in a survey course in French literature.

ADVANCEMENT TO CANDIDACY
In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, students may be required to pass a qualifying examination in French given by the Department of French and Italian.

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 bulletin, the student must complete a graduate program of at least 30 units which includes French 299, Thesis; or Plan B, which includes a comprehensive examination in lieu of the thesis.

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.

FACULTY
Chairman, Department of French and Italian: Janis M. Glasgow, Ph.D.
Credential Adviser: N. C. Altamura
Graduate Adviser: Elizabeth R. Hanchett
Professors: S. L. Max, Ph.D.; L. N. Messier, Ph.D.; Guerard Piffard, Ph.D.; Gianangelo Vergani, Dottorato in Lettere
Associate Professors: Janis M. Glasgow, Ph.D.; Hilda Nelson, Ph.D.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN FRENCH

UPPER DIVISION COURSES

105. Nineteenth Century French Theatre (3)
107A-107B. Eighteenth Century French Literature (3-3)
110A-110B. Nineteenth Century French Novel (3-3)
111A-111B. Seventeenth Century French Literature (3-3)
112A-112B. French Poetry (3-3)
114. Twentieth Century French Novel Theatre (3)
115. Twentieth Century French Theatre (3)
117. Renaissance and Baroque Literature (3)
148. Introduction to French Philology (3)
150. Advanced Phonetics and Diction (3)

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

201. History of the French Language (3)
Prerequisite: 18 units of upper division French.
The history of the French language from the beginnings through the sixteenth century.

202. Medieval French Literature (3)
Prerequisite: 18 units of upper division French and French 201.
Readings in the principal monuments, trends and genres of medieval French literature from the beginnings through François Villon.

203. Literature of the French Renaissance (3)
Prerequisites: 18 units of upper division French and French 201.
Literature and thought of the 16th century as represented in the works of Rabelais, Montaigne, Ronsard, Du Bellay, etc.

220. Explication de Textes (3)
Prerequisite: 18 units of upper division French.
An introduction to the analytical French approach to the detailed study of literature. Demonstrations by instructor and students. This course aims to give teachers of French a greater mastery of French language and literature.

230. Methods of Literary Criticism (3)
Prerequisite: 18 units of upper division French.
Theory and practice of various traditional and modern critical approaches to specific literary texts.

250. Seminar in Seventeenth-Century Literature (3)
Prerequisite: 18 units of upper division French.
Directed research in the works of a representative author, or in a genre or movement.
Maximum credit six units applicable on a master's degree.

260. Seminar in Eighteenth-Century Literature (3)
Prerequisite: 18 units of upper division French.
Directed research in the works of a representative author, or in a genre or movement.
Maximum credit six units applicable on a master's degree.

270. Seminar in Nineteenth-Century Literature (3)
Directed research in the works of a representative author, or in a genre or movement.
Maximum credit six units applicable on a master's degree.

280. Seminar in Twentieth-Century French Literature (3)
Prerequisite: 18 units of upper division French.
Directed research in the works of a representative author, genre or movement.
Maximum credit six units applicable on a master's degree.

284. Topics in French Literature (3)
Prerequisite: 18 units of upper division French.
Study of a movement, genre, theme, myth or individual author. May be repeated with new content. Maximum credit six units applicable on a master's degree.

290. Research and Bibliography (3)
Prerequisite: 18 units of upper division French.
Purpose and methods of research in the fields of the language and literature, the collection and collation of bibliographic material, and the proper presentation of the results of such investigation.

298. Special Study (1-3)
Prerequisite: 18 units of upper division French and consent of staff; to be arranged with department chairman and instructor.
Individual study. Maximum credit three units applicable on a master's degree.

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

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. An emphasis in conservation of environmental quality within the geography degree program is also available. For graduate study in connection with the Master of Arts degree in Social Science, refer to the section of this bulletin under Social Science.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified standing as described in Part Three of this bulletin under Admission to the Graduate Division. In addition, candidates whose preparation is deemed insufficient by the 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 students must satisfy the general requirements for advancement to candidacy, as stated in Part Three of this bulletin.

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 bulletin, 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.

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 200-numbered courses, including Geography 205 and 210.

The requirements for students electing an emphasis in conservation of environmental quality are as follows:

(1) A minimum of 10 units, including 24 units of 200-numbered courses.
(2) Geography 205, Geographic Research and Techniques of Presentation (3)
(3) At least twelve units to be taken from the courses listed below:
   - Geography 200A, Seminar in Advanced Physical Climatology (3)
   - Geography 250, Seminar in Systematic Geography (3)
   - Geography 255, Seminar in Urban and Settlement Geography (3)
   - Geography 270, Seminar in Theory of Resource Use (3)
   - Geography 272, Seminar in Environmental Quality (3)
   - Geography 275, Seminar in Recreational Geography (3)
(4) At least nine units to be taken from one of the following sequences:
   (a) Biology 240, Seminar in Terrestrial Ecology (2)
   Biology 241, Seminar in Aquatic Ecology (2)
   Biology 242, Population and Community Ecology (3)
   Biology 243, Physiological Ecology (3)
   Biology 244, Physical Aspects of Ecology (3)
   Biology 245, Aquatic Ecology (3)
   Biology 246, Behavioral Ecology (3)
   Biology 250, Biogeography (3)
   Biology 261, Seminar in Environmental Radiation (2)
   (b) Economics 105, Welfare Economics (3)
   Economics 208, Development Planning (3)
   Economics 231, Seminar in Public Finance (3)
   Economics 238, Seminar in Urban and Regional Economics (3)
   Economics 272, Seminar in Utilities and Water Resources (3)
   (c) Public Administration 201, Scope and Method of Public Administration (3)
   Public Administration 243, Science Technology and Public Policy (3)
   Public Administration 250, Management of Urban Governments (3)
   Public Administration 255, The Metropolitan Area (3)
   Public Administration 260, Administration and Public Policy Development (3)
   (d) Sociology 151, Research Methods in Demography (3)
   Sociology 155, Urban Sociology (3)
   Sociology 250, Seminar in the Community (3)
   Sociology 270, Seminar in Population and Demography (3)
   Sociology 275, Directed Readings in Population and Demography (3)
(5) Three units to be selected from:
   Geography 298, Special Study (3)
   Biology 298, Special Study (3)
   Economics 298, Special Study (3)
   Public Administration 298, Special Study (3)
   Sociology 298, Special Study (3)
(6) Three units in Geography 299, Thesis (Plan A), or Geography 297, Research (Plan B)

Students in either 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 the direction of a thesis advisor and the thesis committee. If Plan B is elected, the student must complete two research papers, a minimum of 3 units in Geography, and pass a comprehensive written examination in lieu of the thesis. For either plan, a comprehensive oral examination is required after the student is advanced to candidacy.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching 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.

FACULTY

Chairman, Department of Geography: J. D. Blick, Ph.D.
Graduate Adviser: E. A. Keen
Assistant Professors: A. A. Colombo, M.A.; L. R. Ford, Ph.D.; I. E. Quastler, Ph.D.; F. P. Scultz, Ph.D.; J. L. van Beek, M.S.
COURSES ACCEPTABLE ON MASTER OF ARTS DEGREE
PROGRAMS IN GEOGRAPHY

UPPER DIVISION COURSES
10A. Physical Climatology (3) 153. Location Analysis and Geographic Theory (3)
10B. Regional Climatology (3) 154. Urban Location and Settlement Geography (3)
101. Climatic Physiography (3) 155. Internal Spatial Structure of Cities (3)
102. Structural Physiography (3) 156. Quantitative Methods of Urban Analysis (3)
103. Fluvial and Eolian Physiography (3) 157. Transportation Geography (3)
104. Coastal and Submarine Physiography (3) 158. Urban Transportation Geography (3)
105. Geography of Soils (3) 159. Advanced Transportation Geography (3)
106. Geography of Soils Laboratory (1) 160. Conservation of Natural Resources (3)
107. Geography of Natural Vegetation (3) 171. Geography as Human Ecology (3)
110. Historical Geography (3) 173. Urban Transportation Geography (3)
119. Geography of San Diego County (3) 174. Water Resources (3)
120. California (3) 175. Geography of Recreational Land Use (3)
121. United States (3) 176. Geography of Marine Resources (3)
122. Canada and Alaska (3) 178. Field Geography (3)
123. Middle America (3) 181A. Maps and Graphic Methods (3)
124. South America (3) 181B. Advanced Cartography (3)
125. North Africa and the Near East (3) 181C. Automated Cartography (3)
126. Europe (3) 182. Use and Interpretation of Aerial Photographs (3)
127. Soviet Union (3) 183. Map Investigation (3)
129. Central and Southern Africa (3) 184. Field Geography of the Arid Southwestern United States (3)
131. Eastern Asia (3) 185. Quantitative Methods in Geographic Research (3)
133. Southeastern Asia (3) 188. Advanced Remote Sensing of the Environment (3)
134. Southern Asia (3) 189. Field Geography (3)
135. Political Geography (3) 190. Regional Geography (3)
151. Economic Geography: Primary Production (3) 191. Historical Geography (3)
152. Industrial Geography (3) 192. Urban Geography (3)

GRADUATE COURSES
200A. Seminar in Advanced Physical Climatology (3) Prerequisites: Geography 100A and approval of the departmental advisory committee. Characteristics of climatic elements for a selected area or climatic type, and a statistical analysis of the elements studied. Maximum credit six units applicable on a master's degree.
200B. Seminar in Advanced Regional Climatology (3) Prerequisites: Geography 100B and approval of the departmental advisory committee. Selected regions, an interpretation of regional variations of world climatic patterns. Maximum credit six units applicable on a master's degree.
205. Geographic Research and Techniques of Presentation (3) Prerequisite: Approval of departmental graduate advisory committee. Seminar in the use of research materials in the different aspects of geography and the effective presentation of research findings in written and oral form. (Formerly numbered Geography 295.)
210. History of Geography (3) Prerequisite: Approval of graduate advisor. The evolution of concepts concerning the nature, scope, and methodology of geography.

220. Seminar in Regional Geography (3) Prerequisite: Approval of departmental graduate advisory committee. Intensive study of a major world region, such as South America, Southeast Asia and Northern Europe. Maximum credit six units applicable on a master's degree.
250. Seminar in Systematic Geography (3) Prerequisite: Approval of departmental graduate advisory committee. Intensive study of an aspect of systematic geography, such as climatology, economic geography, and graphic presentation. Maximum credit six units applicable on a master's degree.
255. Seminar in Urban and Settlement Geography (3) Prerequisite: Geography 155 or 156 and approval of the departmental advisory committee. Selected topics in urban geography. Field reconnaissance in the local urban "laboratory" is essential part of the research undertaken.
256. Seminar in Location of Urban Activities (3) Prerequisites: Geography 156 and approval of the departmental advisory committee. Systematic analysis of the locations and linkages of activities in urban areas.
258. Seminar in Urban Transportation (3) Prerequisite: Geography 158. Directed study and research on selected topics in transportation geography.
259. Seminar in Urban Transportation (3) Prerequisite: Geography 159 and approval of the departmental advisory committee. Intensive study and research on topics in urban transportation geography. Emphasis on transport innovations and their impact on urban spatial patterns.
260. Seminar in Spatial Structure of Transport Systems (3) Prerequisites: Geography 158 and approval of the departmental advisory committee. Transportation systems and networks, optimum route patterns and commodity flows.
270. Seminar in Theory of Resource Use (3) Prerequisites: Geography 7 and three units of upper division geography, or 170, or 171, and the approval of the departmental advisory committee.
272. Seminar in Environmental Quality (3) Prerequisites: Geography 7 and three units of upper division geography, or 170, or 171, and the approval of the departmental advisory committee.
275. Seminar in Recreational Geography (3) Prerequisites: Geography 175 and consent of departmental advisory committee. Geography 7 or 170 and 171 are recommended.
280. Techniques of Field Research (3) Prerequisites: Geography 180 and approval of departmental graduate advisory committee. Detailed and reconnaissance field work including classification of natural and cultural features and preparation of geographical reports and maps based on field data. Maximum credit six units applicable on a master's degree.
285. Seminar in the Use of Quantitative Methods (3)
Prerequisites: Mathematics 18 or a higher numbered course in mathematics, Geography 185 or any upper division course in mathematics, Geography 185 or any upper division course in statistics, and approval of departmental advisory committee.
Application of quantitative methods to problems in human and physical geography. Maximum credit six units applicable on a master's degree.

288. Seminar in Remote Sensing of the Environment (3)
The use of remote sensing techniques in the study of man's cultural and biophysical environment.

296. Geographic Internship (3)
Prerequisite: Approval of the departmental graduate advisory committee, and consent of the instructor.
Students will be assigned to various government agencies and industry and will work under the joint supervision of agency heads and the course instructor. Maximum credit six units; three units applicable on a master's degree.

297. Research (1-3)
Research in one of the fields of geography. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

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

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GEOLOGY

GENERAL INFORMATION

The Department of Geology, in the College of Sciences, offers graduate study leading to the Master of Science degree in Geology. The curriculum provides a wide variety of advanced 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-around field work, place San Diego State in a highly favorable location for graduate work in the geological sciences.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Three of this bulletin under Admission to the Graduate Division. 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.

ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, 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 bulletin. 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 200-numbered courses in geology to include 208 (3 units), 297 (3 units), and 299, Thesis, and six units of upper division or graduate electives approved by his departmental adviser or, if Plan B is elected, 18 units of 200-numbered courses and 12 units of upper division or graduate electives. Geology 108B, Field Geology (3), or its equivalent as approved by the graduate adviser, is required as a part of the program if it was not a part of the student's undergraduate work.

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 Chairman of the Department.

FACULTY

Chairman, Department of Geology: R. L. Threet, Ph.D.
Graduate Adviser: A. D. Price
Associate Professors: N. O. Fredericksen, Ph.D.; Daniel Krummenacher, Ph.D.; R. B. McEuen, Ph.D.; A. D. Price, Ph.D.
Assistant Professors: P. L. Abbott, M.A.; J. P. Kern, Ph.D.
### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN GEOLOGY

#### UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>102.</td>
<td>Geology of North America</td>
<td>3</td>
</tr>
<tr>
<td>105.</td>
<td>Photogeology</td>
<td></td>
</tr>
<tr>
<td>106.</td>
<td>Paleontology</td>
<td>4</td>
</tr>
<tr>
<td>107.</td>
<td>Stratigraphy</td>
<td></td>
</tr>
<tr>
<td>108.B.</td>
<td>Field Geology</td>
<td></td>
</tr>
<tr>
<td>110.</td>
<td>Petroleum Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>112.</td>
<td>Mining Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>116.</td>
<td>Micropaleontology</td>
<td>3</td>
</tr>
<tr>
<td>120.</td>
<td>Ore Deposits</td>
<td>3</td>
</tr>
<tr>
<td>121.</td>
<td>Petroleum Geology</td>
<td></td>
</tr>
</tbody>
</table>

#### GRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>200.</td>
<td>Seminar</td>
<td>1-3</td>
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<tr>
<td>208.</td>
<td>Graduate Field Geology</td>
<td>3</td>
</tr>
<tr>
<td>209.</td>
<td>Igneous Petrology</td>
<td>3</td>
</tr>
<tr>
<td>211.</td>
<td>Metamorphic Petrology</td>
<td>3</td>
</tr>
<tr>
<td>212.</td>
<td>Sedimentary Petrology</td>
<td>3</td>
</tr>
<tr>
<td>220.</td>
<td>Biostratigraphy</td>
<td>3</td>
</tr>
<tr>
<td>225.</td>
<td>Paleoecology</td>
<td>3</td>
</tr>
<tr>
<td>229.</td>
<td>Seminar: Advanced Studies in Stratigraphy</td>
<td>3</td>
</tr>
<tr>
<td>235.</td>
<td>Marine Processes</td>
<td>3</td>
</tr>
<tr>
<td>240.</td>
<td>Geotectonics</td>
<td>3</td>
</tr>
<tr>
<td>245.</td>
<td>Advanced Structural Geology</td>
<td>3</td>
</tr>
<tr>
<td>250.</td>
<td>Seminar: Physical Properties of Earth Materials</td>
<td>3</td>
</tr>
<tr>
<td>260.</td>
<td>Isotope Geology</td>
<td>3</td>
</tr>
<tr>
<td>270.</td>
<td>Pleistocene Geology</td>
<td>3</td>
</tr>
<tr>
<td>280.</td>
<td>Sedimentary Geochemistry</td>
<td>3</td>
</tr>
<tr>
<td>285.</td>
<td>Genesis of Ore Deposits</td>
<td>3</td>
</tr>
<tr>
<td>297.</td>
<td>Research</td>
<td>1-3</td>
</tr>
<tr>
<td>298.</td>
<td>Special Study</td>
<td>1-3</td>
</tr>
<tr>
<td>299.</td>
<td>Thesis</td>
<td>3</td>
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</tbody>
</table>

**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.

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235. Marine Processes (3)  
Prerequisite: Geology 126.  
Marine erosion, transportation and deposition and their geologic consequences.

240. Geotectonics (3)  
Prerequisite: Geology 100.  
A consideration of topics on continental genesis and evolution, orogeny, geosynclinal theory, and a survey of classic geologic provinces.

245. Advanced Structural Geology (3)  
Prerequisite: Geology 100.  
Topics in advanced structural geology in the light of petrographic, geophysical, and experimental data, combined with classic field observations.

250. Seminar: Physical Properties of Earth Materials (3)  
Prerequisite: Geology 110 or 112.  
Theoretical principles and instrumental techniques used to remotely determine the physical properties of earth materials.

260. Isotope Geology (3)  
Two lectures and three hours of laboratory.  
A survey of isotopic and geochronologic topics with individual projects in isotopic analysis.

270. Pleistocene Geology (3)  
Three lectures and field trips.  
Topics in Pleistocene geology; glaciation, Pleistocene lakes and drainage, relation of geology to early man, including field investigations.

280. Sedimentary Geochemistry (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Geology 130.  
Problems in low temperature geochemistry, including clay mineralogy and diagenesis.

285. Genesis of Ore Deposits (3)  
Two lectures and three hours of laboratory.  
Prerequisites: Geology 120, 125, and Geology 130 or four units of physical chemistry.  
Application of mineralogy, petrography, and chemistry to an understanding of the origin of ore deposits.

297. Research (1-3)  
Prerequisite: Consent of the Department.  
Supervised research in an area of geology. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)  
Individual study. Six units maximum credit.  
Prerequisite: Consent of staff; to be arranged with departmental chairman and instructor.

299. Thesis (3)  
Prerequisites: An officially appointed thesis committee and advancement to candidacy.  
Preparation of a thesis for the master's degree.
GERMAN

GENERAL INFORMATION
The Department of German and Russian, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in German.

The staff in charge of the graduate program in German is composed of professors whose native tongue is German, or who are familiar with Germany through travel or intensive studies, enabling them to present authoritatively the German language and culture. Library facilities include resources in German literature and linguistics, consisting of books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

ADMISSION TO THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. 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 bulletin, students may be required to pass a qualifying examination in German given by the Department of German and Russian.

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 bulletin, 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 200-numbered courses including German 201, 290, and 299, and six units selected from German 204, 205, 206, 207, 208, and 210. If Plan B is followed, the student must pass a comprehensive examination in lieu of German 299.

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.

FACULTY
Chairman, Department of German and Russian: H. W. Paulin, Ph.D.
Graduate Adviser: R. H. Lawson
 Credential Adviser: J. H. Wulbern
Assistant Professors: Christa M. Cross, M.A.; H. H. Herrmann, M.A.

GRADUATE COURSES IN GERMAN

201. History of the German Language (3)
Prerequisite: 12 units of upper division German.
The historical development of the German language, with source readings from the Gothic Bible to Luther's translation of the Bible.

202. Middle High German Literature (3)
Prerequisite: German 152.
Reading and analysis of Middle High German literature.

203. The German Novelle (3)
Prerequisite: 12 units of upper division German.
The development of the Novelle as a literary form from Goethe to the present.

204. The German Novel in the Twentieth Century (3)
Prerequisite: 12 units of upper division German.
Selected German novels of the 20th century.

205. German Lyric Poetry From Holderlin to Rilke (3)
Prerequisite: 12 units of upper division German.
The major German lyric poets from the beginnings of Romanticism to Rilke.

206. The German Drama of the 19th Century (3)
Prerequisite: 12 units of upper division German.
Representative works of German dramatic literature from Kleist to Hauptmann.

207. Renaissance and Baroque Literature (3)
Prerequisite: 12 units of upper division German.
German literature of the 16th and 17th centuries.

208. Goethe (3)
Prerequisite: 12 units of upper division German.
Goethe's lyric, epic, and dramatic poetry excluding Faust.

210. Schiller (3)
Prerequisite: 12 units of upper division German.
Schiller as poet, dramatist, critic and philosopher, with emphasis on his classical period.

251. Seminar in Eighteenth-Century Literature (3)
Prerequisite: 18 units of upper division German.
Directed research in the works of an important author or in a problem, type, or movement of German literature of the eighteenth century. Maximum credit six units applicable on a master's degree.
255. Seminar in Nineteenth-Century Literature (3)
Prerequisite: 18 units of upper division German.
Directed research in the works of an important author or in a problem, type, or
movement of German literature of the nineteenth century. Maximum credit six
units applicable on a master's degree.

260. Seminar in Twentieth-Century Literature (3)
Prerequisite: 18 units of upper division German.
Directed research in the works of an important author or in a problem, type, or
movement of German literature of the twentieth century. Maximum six units
applicable on a master's degree.

265. Seminar in Germanic Linguistics (3)
Prerequisite: 18 units of upper division German.
Directed research in a specialized area of Germanic linguistics or philology.
Maximum credit six units applicable to a master's degree.

290. Research and Criticism (3)
Prerequisite: 12 units of upper division German.
Purposes and methods of research in the language and in the literature; theories
and practice of literary criticism. Recommended for the first semester of graduate
study.

297. Research (3)
Prerequisite: Advancement to candidacy.
Individual research in a specialized subject in German literature or linguistics.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisites: 18 units of upper division German and consent of staff; to be
arranged with department chairman and instructor.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to can-
didacy.
Preparation of a project or thesis for the master's degree.

HEALTH SCIENCE AND SAFETY

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.

ADMISSION TO THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate
Division, as described in Part Three of this bulletin under Admission to the Graduate Division.

ADVANCEMENT TO CANDIDACY
All students must satisfy the general requirements for advancement to candidacy,
which are described in Part Three of this bulletin.

SPECFIC 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 bulletin. The minimum 30-unit program includes
at least 21 units in Health Science and Safety selected from those listed as appli-
cable on master's degree programs, 15 of which must be in 200-numbered courses,
including 299, Thesis. In addition, all programs must include Education 211.

ASSISTANTSHIPS
Graduate teaching assistantships and graduate non-teaching assistantships in health
science and safety are available to a limited number of qualified students. Appliance
blanks and additional information may be secured from the Chairman of the
Department.

FACULTY
Chairman, Department of Health Science and Safety: W. C. Burgess, Ed.D.
Credential Adviser: R. N. Collins
Graduate Adviser: A. C. McTaggart
A. C. McTaggart, Ph.D.
Associate Professors: A. C. Barnes, Jr., H.S.D.; W. D. Boskin, Ed.D.; Stanford
Fellers, Ed.D.; W. D. Sorochan, Ed.D.
Assistant Professors: S. J. Bender, H.S.D.; R. N. Collins, Ed.D.; R. H. Grant,

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN HEALTH SCIENCE

UPPER DIVISION COURSES

145. Safety Education and Accident Prevention (3)
146. Health Education for Secondary Teachers (2)
151. Health Education for Secondary Teachers (2)
152. Administration of the School Health Program (3)
153. Workshop in Health Science and Safety (1-3)
154. Workshop in Health Science and Safety (1-3)
155. Sex Education in the Schools (3)
160. Introduction to Public Health (3)
162. World Health (1)
172. Habit Forming Substances (1)
175. Health in Later Maturity (3)
176. Health and Medical Care (3)
197. Supervised Field Experience (1-3)
200. Seminar (3)
Prerequisite: Fifteen units completed in Health Science and Safety.
An intensive study of advanced problems in health education. Maximum credit six units applicable on a master's degree.

201. Interdisciplinary Factors in Health Education (3)
Prerequisite: Fifteen units completed in Health Science and Safety.
Synthesis of basic scientific and cultural principles which contribute to an understanding of human well-being and how it is deliberately influenced.

204. Program Planning and Evaluation in Community Health Education (3)
Prerequisite: Health Science and Safety 160.
Program planning and evaluation theories, systems and techniques in community health education.

240. Administration of Traffic Safety Education (3)
Prerequisites: Health Science and Safety 145 and 147.
Research and trends in traffic safety education with emphasis on the problems of organization and administration.

245. School Safety Programs and Procedures (3)
Prerequisite: Health Science and Safety 145.
Advanced consideration of school safety programs including legal bases and requirements, personnel responsibilities, liability, instruction, maintenance, and school transportation.

270. Problems in Disease Control (3)
Prerequisite: Health Science and Safety 165.
New concepts in the community management of disease. Individual investigation and discussion.

271. Drug Abuse Education (3)
Prerequisite: Health Science and Safety 172.
Drug abuse education in the school and community.

291. Health Science and Safety Research (3)
Prerequisite: Health Science and Safety 196.
Methods and techniques of research appropriate to health science, the process by which potential problems in health science are analyzed, and the standards for the writing of research papers and theses.

292. Analysis of Professional Literature (3)
Prerequisite: Health Science and Safety 196.
Investigation and study of literature in the fields which have an important bearing on health science and safety programs in the school and community.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department special study adviser and instructor.
Individual study. Six units maximum credit.

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

Chairman, Department of History: D. E. Berge, Ph.D.

Graduate Adviser: D. J. Weber (Coordinator); A. P. Nasatir, R. T. Smith, Jr.; J. L. Stoddart

Credential Adviser: D. S. Milne


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN HISTORY

UPPER DIVISION COURSES

101A-101B. The Contemporary World in Historical Perspective (3-3)
102. Great Historians and Historical Literature (3)
105A-105B. The Quest for Peace (3-3)
106A-106B. War and Civilization (3-3)
107A-107B. Science in Western Civilization (1-1)
111A-111B. European History (3-3)
112A-112B. Europe in the Middle Ages (3-3)
113. The British Empire (3)
113A-113B. Renaissance and Reformation (3-3)
113A-113B. Europe in the 17th and 18th Centuries (3-3)
113A-113B. Europe in the 19th Century (3-3)
116A-116B. Intellectual History of Europe in the 19th Century (3-3)
117A-117B. Europe in the 20th Century (3-3)
118A-118B. Diplomatic History of Modern Europe (3-3)
114A-114B. History of Scandinavia (3-3)
114A-114B. The French Revolution and Napoleonic Era (3)
114B. Modern France (3)
114B-114B. The Iberian Peninsula (3-3)
145A-145B. Central and Eastern Europe (3-3)
146A-146B. Germany and Central Europe (3-3)
147A-147B. Russia and the Soviet Union (3-3)
149. Modern Italy (3-3)
151A-151B. England (3-3)
152A-152B. Constitutional History of England (3-3)
153A-153B. England and Stuart England (3-3)
154A-154B. Modern Britain (3-3)
155A-155B. History of the British Empire and Commonwealth (3-3)
156A-156B. History of the Near East from the 7th Century to World War I (3-3)
157. The Near East in the Twentieth Century (1914-Present) (3-3)
158A-158B. Africa (3-3)
160A-160B. Latin America (3-3)
161A-161B. Mexico (3-3)
162A-162B. Brazil (3-3)
163A-163B. the Caribbean Area (3-3)
164. The Pacific Coast Nations of South America (3)
165A-165B. Economic, Social, and Intellectual Development of Latin America (3-3)
166A-166B. Diplomatic History of Latin America (3-3)
167A-167B. Diplomatic History of Latin America (3-3)
168. The Platine Nations (3)
171A-171B. Rise of the American Nation (3-3)
172A-172B. Development of the Federal Union (3-3)
173A-173B. Civil War and Reconstruction: The United States from Jackson to Grant (3)
174. The Rise of Modern America, 1808-1900 (3)
175A-175B. The United States, 1901-1945 (3-3)
175C. The United States in the Nuclear Age (3-3)
176A-176B. American Foreign Policy (3-3)
177A-177B. Constitutional History of the United States (3-3)
178A-178B. The Development of American Capitalism (3-3)
179A-179B. Intellectual History of the United States People (3-3)
180. Selected Studies in History (3)
181A-181B. The Westward Movement (3-3)
182A-182B. The Spanish Borders and the American Southwest (3-3)
183A-183B. Black American Civilization (3-3)
185. Conservation History of the United States (3)
189A-189B. California (3-3)
190A-190B. Southeast Asia (3-3)
191A-191B. The Far East (3-3)
192. Chinese Civilization (3)
193. China in Modern Times (3)
194. Japanese Civilization (3)
195. Rise of Japan as a Modern State (3-3)
196A-196B. The Indian Sub-Continent (3)
197A-197B. Intellectual History of Modern Asia (3-3)

GRADUATE COURSES

All graduate courses in the Department of History have a prerequisite of 12 units of upper division courses in history, or consent of the instructor.

201. Seminar in Historical Method (3)
202. Seminar in Historiography (3)

240. Directed Reading in Selected Topics (3)
Prerequisite: Permission of the instructor.

241. Directed Reading in United States History (3)
Prerequisite: Six upper division units in United States history.

242. Directed Reading in European History (3)
Prerequisite: Six upper division units in European history.

243. Directed Reading in Asian History (3)
Prerequisite: Six upper division units in Asian history.

244. Directed Reading in Latin American History (3)
Prerequisite: Six upper division units in Latin American history.

245. Directed Reading in African and Middle Eastern History (3)
Prerequisite: Six upper division units in African or Middle Eastern history.
246. Directed Reading in Ancient and Medieval History (3)
Prerequisite: Six upper division units in Ancient or Medieval history.
Selected readings in source materials and historical literature in a designated area of Ancient or Medieval history. Maximum of six units applicable to a master's degree.

250. Seminar in the Philosophy of History (3)
The major philosophies of history and directed research on topics selected from various philosophers of history such as Babbage, Collingwood, Croce, Freud, Hegel, Marx, Pareto, Sorokin, Spengler, and Toynbee.

251. Seminar in United States History (3)
Prerequisite: Six upper division units in United States history.
Directed research on topics selected from a designated area of United States history. Maximum credit six units applicable to a master's degree.

252. Seminar in European History (3)
Prerequisite: Six upper division units in European history.
Directed research on topics selected from a designated area of European history. Maximum credit six units applicable to a master's degree.

253. Seminar in Asian History (3)
Prerequisite: Six upper division units in Asian history.
Directed research on topics selected from a designated area of Asian history. Maximum credit six units applicable to a master's degree.

254. Seminar in Latin American History (3)
Prerequisite: Six upper division units in Latin American history.
Directed research on topics selected from a designated area of Latin American history. Maximum credit six units applicable to a master's degree.

255. Seminar in African and Middle Eastern History (3)
Prerequisite: Six upper division units in African or Middle Eastern history.
Directed research of topics selected from a designated area of African or Middle Eastern history. Maximum of six units applicable to a master's degree. (Formerly Seminar in African History.)

256. Seminar in Ancient and Medieval History (3)
Prerequisite: Six upper division units in Ancient or Medieval history.
Directed research on topics selected from a designated area of Ancient or Medieval history. Maximum of six units applicable to a master's degree.

258. Area Studies in History (1-3)
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examinations in the major and minor fields of history for those students taking the M.A. under Plan B. Maximum credit six units applicable to a master's degree.

297. Research (3)
Prerequisite: Advancement to candidacy and written approval of the History Department graduate coordinator.
Independent research in a specialized subject in history.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

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

INDUSTRIAL ARTS

GENERAL INFORMATION
The Department of Industrial Arts, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Industrial Arts. The Department of Industrial Arts 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, comprehensive industrial arts and industrial crafts.

ADMISSION TO THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division.

ADVANCEMENT TO CANDIDACY
All students must meet the general requirements for advancement to candidacy, as described in Part Three of this bulletin.

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 bulletin, 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 courses listed below as acceptable on the master's degree in Industrial Arts must contain at least 24 units of 200-numbered courses, including Industrial Arts 295, 296, 297, 298, 299, nine units selected from Industrial Arts 221, 222, 223, and 224, and 220 and 290, nine units selected from Industrial Arts 299 (Plan A) or 295 (Plan B). Students electing Plan B must pass a comprehensive examination upon completion of Industrial Arts 295 and in lieu of the thesis.

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.

FACULTY
Chairman, Department of Industrial Arts: G. D. Bailey, Ed.D.
Graduate Adviser: F. J. Irgang
Credential Adviser: F. J. Irgang

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN INDUSTRIAL ARTS

UPPER DIVISION COURSES

103. Advanced Industrial Crafts (3)
112. Organization of Comprehensive Industrial Arts (3)
117. Thermoset Plastics (3)
123. Industrial Arts Drawing (3)
131. Industrial Arts Metalworking (3)
140. Photography for Teachers (3)
153. Woodworking for Teachers (3)
164. Basic Digital Computers (3)
173. Industrial Arts (3)
181. Industrial Arts Graphic Arts (3)
190. Experimental Industrial Arts (1 or 2)
194. Recent Trends in Industrial Arts Education (2)

200. Seminar (3)
An intensive study in industrial arts, topic to be announced in the class schedule.

201. Advanced Teaching Problems (3)
Prerequisites: Teaching experience in area selected and consent of instructor.
Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-radio; (e) transportation; (f) graphic arts; (g) photography; (h) comprehensive industrial arts. Series on project design and visual materials. Maximum credit six units applicable on a master's degree.

202. Industrial Arts Problems in Graphies and Design (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 121.
The theories and procedures of industrial drafting, including nomographs, descriptive geometry, and graphic solutions. Emphasis on special applications to industrial arts.

203. Industrial Arts Problems in Metalworking (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 133.
Problems involved in industrial arts metalworking. Individual research project dealing with instructional materials or processes.

204. Problems in Photography (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 142, 143, or 144.
Advanced problems in photography in industry and photography in education. Individual research project dealing with instructional materials or industrial processes.

205. Industrial Arts Problems in Woodworking (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 153.
Intensive study in selected areas of the woodworking industry as it relates to materials, production, and construction. Presentation of research findings.

206. Problems in Electronics (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 163.
Recent developments in the electronics areas. Special research projects and resource materials.

207. Research in Vehicular Power Systems for Industrial Arts (3)
Prerequisite: Industrial Arts 173.
Research in selected areas of the vehicular power systems and effective presentation of findings in oral and written form.

208. Industrial Arts Problems in Graphic Arts (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 188.
Selected areas of the graphic arts industry related to materials, production methods, and allied pursuits. Techniques of presentation of findings in effective written and oral form.

210. Problems in Industrial Crafts (3)
Prerequisite: Industrial Arts 193.
Research in selected areas of industrial crafts with emphasis on instructional materials and techniques. Specifically designed for teachers, recreation workers, and therapists.

215. Problems in Plastics (3)
One lecture and six hours laboratory.
Prerequisite: Industrial Arts 117.
Research with selected plastics processes and materials. Development of projects, aids, resource materials, oral and written presentations.

220. History and Philosophy of Industrial Education (3)
A study of the philosophical foundations and development of industrial education and its continuing role in American culture. Contemporary practices and trends will be given consideration.

221. Curriculum Construction in Industrial Arts Education (3)
Selection of teaching content for school situations in compliance with the best known procedures regarding analysis, objectives, methods and learning, and development of instructional devices related directly to course content.

222. Instructional Resources for Industrial Arts Education (3)
Survey, selection, and compilation of materials used in the development of resource units for instruction in industrial education, involving publications, organized talks, field trips, visual materials, technical literature and related materials. Organization and evaluation of such materials.

223. Evaluation in Industrial Arts Education (3)
Principles, methods, and criteria of evaluation including the special problems of measuring growth, achievement, and performance in various phases of industrial education.

224. Organization, Administration and Supervision of Industrial Education Programs (3)
The principles, objectives, methods and techniques employed in the supervision of industrial education programs. Emphasis on organizing and administering programs at all levels in industry and education.

227. 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.

229. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis in industrial arts for the master's degree.
LATIN AMERICAN STUDIES

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, Economics, Geography, History, Political Science, and Spanish and Portugese. 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 THE GRADUATE DIVISION

In addition to meeting the requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division, the student must present the Bachelor of Arts degree with not less than 18 units of courses of Latin American content in three areas. The student must demonstrate an adequate reading knowledge of Spanish for admission to the program, through either course work or examination, as determined by the Latin American Studies Committee. A reading knowledge of Portuguese is recommended. 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 bulletin.

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 bulletin, 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:

<table>
<thead>
<tr>
<th>Department A</th>
<th>200-numbered Courses</th>
<th>Upper Division Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 units</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department B</td>
<td></td>
<td>6 units</td>
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<tr>
<td>3 units</td>
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<tr>
<td>Department C</td>
<td></td>
<td>3 units</td>
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<tr>
<td>3 units</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>12 units</td>
</tr>
</tbody>
</table>

The total program shall include a minimum of 18 units in 200-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 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.

COMMITTEE ON LATIN AMERICAN STUDIES

| P. F. Flemion, Chairman | Peter Jacobson |
| E. M. Barrea            | Arturo Jimenez-Vera |
| J. D. Blick             | J. B. Kelley |
| T. E. Case              | A. P. Nasatir |
| N. C. Clement           | L. V. Padgett |
| D. M. Dexter            | G. V. Segade |
| R. L. Cuniff            | P. J. Vanderwood |
| E. M. Davies, Jr.       | D. J. Weber |
| W. A. Finch, Jr.        | Raymond Weeter |
| Victor Goldkind         | H. H. Windsor, III |
| G. L. Head              | R. C. Young |
| N. C. Hollander         | |

FACULTY

Graduate Coordinator: J. D. Blick

Graduate Advisers:

Anthropology: A. J. O. Anderson
Economics: N. C. Clement
Geography: W. A. Finch, Jr.

History: A. P. Nasatir
Political Science: L. V. Padgett
Spanish: Raymond Weeter

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

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN LATIN AMERICAN STUDIES

UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>Meso-American Ethnology (3)</td>
</tr>
<tr>
<td>162</td>
<td>Cultures of South America (3)</td>
</tr>
<tr>
<td>163</td>
<td>Contemporary Latin America (3)</td>
</tr>
<tr>
<td>169-S</td>
<td>Backgrounds of Mexican Civilization (3)</td>
</tr>
<tr>
<td>180</td>
<td>Preclassical Cultures of Meso-America (3)</td>
</tr>
<tr>
<td>181</td>
<td>Classic Pre-Columbian Civilizations of Middle America (3)</td>
</tr>
<tr>
<td>182</td>
<td>Post-Conquest Cultures of Middle America (3)</td>
</tr>
<tr>
<td>194</td>
<td>Economics Problems of Latin America (3)</td>
</tr>
<tr>
<td>195</td>
<td>Economics of Underdeveloped Areas (3)</td>
</tr>
<tr>
<td>198</td>
<td>Directed Readings in Geographic Literature (3)</td>
</tr>
<tr>
<td>199</td>
<td>History</td>
</tr>
<tr>
<td>160A-160B</td>
<td>Latin America (3-3)</td>
</tr>
<tr>
<td>161A-161B</td>
<td>Mexico (3-3)</td>
</tr>
<tr>
<td>162A-162B</td>
<td>History of Brazil (3-3)</td>
</tr>
<tr>
<td>163A-163B</td>
<td>The Caribbean Area (3-3)</td>
</tr>
<tr>
<td>164</td>
<td>The Pacific Coast Nations of South America (3)</td>
</tr>
<tr>
<td>165A-165B</td>
<td>Economic, Social, and Intellectual Development of Latin America (3-3)</td>
</tr>
<tr>
<td>167A-167B</td>
<td>Diplomatic History of Latin America (3-3)</td>
</tr>
<tr>
<td>168</td>
<td>The Plurinationality of Latin America (3)</td>
</tr>
<tr>
<td>175</td>
<td>International Relations of the Latin American States (3)</td>
</tr>
<tr>
<td>178</td>
<td>Political Change in Latin America (3)</td>
</tr>
<tr>
<td>195</td>
<td>Political System of Latin America (3)</td>
</tr>
<tr>
<td>196</td>
<td>Portuguese</td>
</tr>
<tr>
<td>135</td>
<td>Brazilian Literature (3)</td>
</tr>
<tr>
<td>104A-104B</td>
<td>Spanish-American Literature (3-3)</td>
</tr>
<tr>
<td>106A-106B</td>
<td>Mexican Literature (3-3)</td>
</tr>
<tr>
<td>107</td>
<td>Caribbean Area Countries (3)</td>
</tr>
<tr>
<td>108</td>
<td>Andean Countries Literature (3)</td>
</tr>
<tr>
<td>109</td>
<td>River Plate Literature (3)</td>
</tr>
<tr>
<td>170</td>
<td>Spanish-American Poetry (3)</td>
</tr>
<tr>
<td>171</td>
<td>Spanish-American Short Story (3)</td>
</tr>
<tr>
<td>172</td>
<td>Spanish-American Theatre (3)</td>
</tr>
</tbody>
</table>
APPLICABLE GRADUATE COURSES

Refer to graduate course descriptions in the sections of this Bulletin under the Departments of Anthropology, Economics, Geography, History, Political Science, and Spanish and Portuguese.

**Anthropology**

200. Seminar (when of Latin American content) (3)

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

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

257. Classical Nahuatl (3)

**Economics**

292. Seminar in International Economics (when Latin America included) (3)

295. Seminar in the Economics of Underdeveloped Countries (3)

**Geography**

200. Seminar in Regional Geography (when topic is Latin America) (3)

**History**

244. Directed Reading in Latin American History (3)

254. Seminar in Latin American History (3)

**Political Science**

280. Seminar in Comparative Government (when Latin America included) (3)

281. Seminar in Latin American Political Systems (3)

**Linguistics**

The Master of Arts degree in Linguistics is an interdisciplinary degree offered by designated faculty members of the Departments of Anthropology, English, French, German and Russian, Philosophy, and Spanish and Portuguese. It is administered by the Linguistics Committee.

The program is designed to provide systematic advanced training in the field of linguistics, which is increasingly relevant to our humanistic-scientific culture. It is not intended as a complete vocational preparation.

**ADMISSION TO THE GRADUATE DIVISION**

In addition to meeting the requirements for admission to the Graduate Division, as described in Part Three of this bulletin, the student must present the Bachelor of Arts degree in Liberal Arts and Sciences at San Diego State or its equivalent. A student whose preparation is deemed insufficient by his graduate adviser or by the Linguistics Committee 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 bulletin. 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 bulletin, the student must complete at least 30 units of upper division and graduate course work to include:

a. Required courses:

Three units chosen from Anthropology 120, Introduction to Anthropological Linguistics, Anthropology 124, Descriptive Linguistics, English 184, Phonemics and Morphemics;

Three units chosen from English 182, American English, English 180, The English Language, General Language 196, General Linguistics, Philosophy 131, Philosophy of Language;

English 183, English Linguistics, three units;

Three units of graduate seminar; English 295, Seminar in Linguistics, plus three more units chosen from English 295, 220, or German 265, Seminar in Germanic Linguistics;


English 299, Thesis, three units.

b. Six units of electives, three units of which must be in 200-numbered courses approved by the student's adviser.

All programs will be approved by the Linguistics Committee, or by the graduate adviser(s) designated by the Committee.

**LINGUISTICS COMMITTEE**

O. D. Seright, Chairman
R. L. Cooper
T. S. Donahue
G. F. Drake

L. H. Frey
R. H. Lawson
Yoshio Tanaka
J. N. Tidwell
FACULTY
Coordinator of Graduate Programs in Linguistics: O. D. Seright
Faculty members in the departments participating in this degree program are listed in the appropriate sections of this Bulletin.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN LINGUISTICS
UPPER DIVISION COURSES

**Anthropology**
- 120. Introduction to Anthropological Linguistics (3)
- 122. Language in Culture (3)
- 124. Descriptive Linguistics (3)

**General Language**
- 196. General Linguistics (3)

**English**
- 180. The English Language (3)
- 181. The Structure of English (3)
- 182. American English (3)
- 183. English Linguistics (3)
- 184. Phonemics and Morphemics (3)

**French**
- 150. Advanced Phonetics and Diction (1)

**German**
- 150. German Phonology (3)
- 152. Middle High German (3)

**Philosophy**
- 131. Philosophy of Language (3)

**Russian**
- 131. Russian Phonology and Morphology (2)

**Spanish**
- 149. Spanish Linguistics (3)
- 150. Phonetics and Phonemics (3)

APPLICABLE GRADUATE COURSES

Refer to graduate course descriptions in the sections of this bulletin under the Departments of Anthropology, English, French, German and Russian, Philosophy, and Spanish and Portuguese.

**Anthropology**
- 204. Seminar in Linguistics (3)
- 222. Historical Linguistics (3)

**English**
- 220. Indo-European (3)
- 221. Old English (3)
- 224. Middle English (3)
- 295. Seminar in Linguistics (3)
- 299. Thesis (3)

**French**
- 201. History of the French Language (3)

**German**
- 201. History of the German Language (3)
- 202. Middle High German Literature (3)

**Philosophy**
- 265. Seminar in Germanic Linguistics (3)

**Russian**
- 201. History of the Russian Language (3)
- 202A-202B. Old Church Slavic (3-3)
- 203. Slavic Linguistics (3)

**Spanish**
- 201. History of the Spanish Language (3)
- 270. Applied Spanish Linguistics for Teachers (3)

MASS COMMUNICATIONS

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 seek careers in secondary or junior college teaching; or (3) who seek a broad background for careers in the mass media, business, or government service.

ADMISSION TO THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. In addition, the student must present evidence of background in journalism, radio-television, advertising, communications, or physics, or psychology. A student whose preparation is deemed insufficient by the Mass Communications 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 bulletin.

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 bulletin, the student must complete a minimum of 30 units from courses listed below acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on master's degree programs, of which units from courses listed below as acceptable on mass communications, a bachelor's degree in journalism, radio-television, advertising, communications, or physics, or psychology. A student whose preparation is deemed insufficient by the Mass Communications Committee will be required to complete specified courses in addition to the minimum of 30 units required for the degree.

The Program is designed to offer systematic training for students:

1. **Candidates may elect to follow Plan A, which requires a thesis, or Plan B, which requires a comprehensive examination agreed on by the Mass Communications Committee in lieu of a thesis.**

All programs will be approved by the Mass Communications Committee.

**MASS COMMUNICATIONS COMMITTEE**

- G. W. Sorensen, Chairman
- H. L. Anderson
- R. L. Benjamin
- M. M. E. El-Assal

**FACULTY**

Coordinator of Graduate Programs in Mass Communications: G. W. Sorensen

**Department of Journalism**

Professor: J. L. Julian, Ph.D.
Associate Professors: J. K. Buckalew, Ph.D.; F. S. Holowach, M.A.; E. M. Oden- dahl, Ph.D.; G. W. Sorensen, Ph.D.
Assistant Professors: Jack Haberstroh, Ph.D.; F. C. Whitney, Ph.D.

Faculty members in other departments participating in the degree program are listed in the appropriate sections of this bulletin.
## COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MASS COMMUNICATIONS

### UPPER DIVISION COURSES

**Journalism**

102. Law of Mass Communication (3)
107. History of Mass Communications (3)
108. The Foreign Press (3)
119. Current Problems in Mass Communications (3)
122. Public Opinion Measurement (3)
144. Reporting of Public Affairs (3)
151. Newspaper Advertising (3)
155. Advanced Editing Techniques (3)
162. Mass Communication and Society (3)
177. Research Methods in Mass Communications (3)
183. Problems in Public Relations (3)
197. Investigation and Report (3)

**Psychology**

100. Selected Topics in Psychology (1-3)
112. Experimental Psychology: Social (4)
120. Consumer Psychology (3)
121. Personnel and Industrial Psychology (3)
122. Public Opinion Measurement (3)
123. Organizational Psychology (3)
145. Sociology of Mass Communication (3)

**Sociology**

124. Social Stratification (3)
137. Political Sociology (3)
140. Social-Psychology: Sociological Approaches (3)

**Telecommunications and Film**

101. Broadcast Management (3)
105. Regulation of Broadcasting (3)
106. International Broadcasting (3)
110. Writing and Producing for Broadcasting and Film (3)
130. Radio Programming (3)
163. International Cinema (3)
170. Educational Broadcasting (3)
183. Advanced Programming and Development for Television (3)

**Upper Division Courses**

- **Psychology**
  - 100. Selected Topics in Psychology (1-3)
  - 112. Experimental Psychology: Social (4)
  - 120. Consumer Psychology (3)
  - 121. Personnel and Industrial Psychology (3)
  - 122. Public Opinion Measurement (3)
  - 123. Organizational Psychology (3)
  - 145. Sociology of Mass Communication (3)

- **Sociology**
  - 124. Social Stratification (3)
  - 137. Political Sociology (3)
  - 140. Social-Psychology: Sociological Approaches (3)

- **Telecommunications and Film**
  - 101. Broadcast Management (3)
  - 105. Regulation of Broadcasting (3)
  - 106. International Broadcasting (3)
  - 110. Writing and Producing for Broadcasting and Film (3)
  - 130. Radio Programming (3)
  - 163. International Cinema (3)
  - 170. Educational Broadcasting (3)
  - 183. Advanced Programming and Development for Television (3)

### APPLICABLE GRADUATE COURSES

**Journalism**

200. Scope and Method of Mass Communications (3)
210. Seminar in International Journalism (3)
219. Seminar in Personnel Psychology (3)
220. Seminar in Organizational Psychology (3)
221. Seminar in Problems in Social Psychology (3)
226. Seminar in Political Psychology (3)
298. Special Study (1-3)
299. Thesis (3)

**Psychology**

201. Seminar in Social Disorganization (3)
221. Seminar in Social Organization (3)
240. Seminar in Social Psychology: Sociological Approaches (3)
260. Seminar in Research Methods (3)
290. Bibliography (1)
297. Research (1)
298. Special Study (1-3)
299. Thesis (3)

**Sociology**

210. Seminar in Social Disorganization (3)
221. Seminar in Social Organization (3)
240. Seminar in Social Psychology: Sociological Approaches (3)
260. Seminar in Research Methods (3)
298. Special Study (1-3)
299. Thesis (3)

**Speech Communication**

235. Seminar in Communication Theory (3)
240. Seminar in Mass Communication Theory (3)
250. Seminar in Broadcasting (3)
272. Seminar in Mass Communication Message Design (3)
284. Seminar in Programming and Production (3)
298. Special Study (1-3)
299. Thesis (3)

**Upper Division Courses**

- **Psychology**
  - 200. Scope and Method of Mass Communications (3)
  - 210. Seminar in International Journalism (3)
  - 219. Seminar in Personnel Psychology (3)
  - 220. Seminar in Organizational Psychology (3)
  - 221. Seminar in Problems in Social Psychology (3)
  - 226. Seminar in Political Psychology (3)
  - 298. Special Study (1-3)
  - 299. Thesis (3)

- **Sociology**
  - 210. Seminar in Social Disorganization (3)
  - 221. Seminar in Social Organization (3)
  - 240. Seminar in Social Psychology: Sociological Approaches (3)
  - 260. Seminar in Research Methods (3)
  - 298. Special Study (1-3)
  - 299. Thesis (3)

- **Speech Communication**
  - 235. Seminar in Communication Theory (3)
  - 240. Seminar in Mass Communication Theory (3)
  - 250. Seminar in Broadcasting (3)
  - 272. Seminar in Mass Communication Message Design (3)
  - 284. Seminar in Programming and Production (3)
  - 298. Special Study (1-3)
  - 299. Thesis (3)
MATHMATICS

GENERAL INFORMATION
The Department of Mathematics, 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, and to the Master of Science degree in Statistics.

The Master of Arts degree in Mathematics is considered to be the basic academic degree in Mathematics. A candidate for a Master of Science degree is expected to concentrate his efforts in a technical area of mathematics such as applied mathematics, computer science, or to statistics for the Master of Science degree in Statistics. Within these limitations either degree can be considered as a stepping-stone to a more advanced degree, if the student so desires.

ADMISSION TO THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. 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 bulletin, 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. At least 15 units must be in 200-numbered courses in mathematics, exclusive of Mathematics 202, 203, 204A, 204B, and 299.

To satisfy the foreign language requirement either the student may present evidence that he has completed French 3, German 3, Russian 3, or Spanish 3 or 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.

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 bulletin, the student must complete a graduate program which includes a concentration consisting of at least 21 units in mathematics selected from courses listed below. At least 15 units must be in 200-numbered courses of which at least 12 units must be in 200-numbered courses in mathematics. The student is required to pass the departmental comprehensive examinations in mathematics. With the approval of the department, the student may select Plan A. In other cases, Plan B will be followed.

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 bulletin, the student must meet the following departmental requirements:
(a) Complete 18 units of 200-numbered mathematics courses including:
(1) Mathematics 240A and 240B.
(2) Six units selected from Mathematics 241, 242, 243, 244, 245, 246, and 247;
(3) Six units of other 200-numbered mathematics courses, except that Mathematics 202, 204A, 204B, and 299 may not be used to fulfill these units required.
(b) Complete 6 additional units of graduate level or approved upper division mathematics courses, not including Mathematics 299.
(c) Complete 6 units of approved electives.
(d) 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.

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.

FACULTY
Chairman, Department of Mathematics: P. W. Shaw, Ph.D.
Graduate Advisers: Master of Arts in Mathematics: E. J. Howard; Master of Arts (Teaching): G. D. Prichett; Master of Science in Mathematics: R. A. Hager; Master of Science in Statistics, D. W. Macky
Credentiai Adviser: J. E. Eagle
## Courses Acceptable on Master's Degree Programs in Mathematics and Statistics

### Graduate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>Introduction to the Foundations of Geometry</td>
<td>3</td>
</tr>
<tr>
<td>106</td>
<td>Projective Geometry</td>
<td>3</td>
</tr>
<tr>
<td>107</td>
<td>Non-Euclidean Geometry</td>
<td>3</td>
</tr>
<tr>
<td>108</td>
<td>Differential Geometry</td>
<td>3</td>
</tr>
<tr>
<td>109</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>121A-121B</td>
<td>Advanced Calculus</td>
<td>(3-3)</td>
</tr>
<tr>
<td>122</td>
<td>Vector Analysis</td>
<td>3</td>
</tr>
<tr>
<td>134</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>135A-135B</td>
<td>Numerical Analysis and Computation</td>
<td>(3-3)</td>
</tr>
<tr>
<td>136</td>
<td>Data Structures</td>
<td>(3)</td>
</tr>
<tr>
<td>137</td>
<td>Combinatorial Principles for Digital Computers</td>
<td>(3)</td>
</tr>
<tr>
<td>139</td>
<td>Programming Languages</td>
<td>(3)</td>
</tr>
<tr>
<td>140A-140B</td>
<td>Mathematical Statistics</td>
<td>(3)</td>
</tr>
<tr>
<td>141</td>
<td>Statistics, Theory and Applications</td>
<td>(3)</td>
</tr>
<tr>
<td>143</td>
<td>Stochastic Processes</td>
<td>(3)</td>
</tr>
<tr>
<td>149</td>
<td>Linear Algebra</td>
<td>(5)</td>
</tr>
<tr>
<td>*</td>
<td>* For National Science Foundation students only except with consent of instructor.</td>
<td></td>
</tr>
</tbody>
</table>

### Upper Division Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>150A-150B</td>
<td>Modern Algebra</td>
<td>(1-3)</td>
</tr>
<tr>
<td>152</td>
<td>Number Theory</td>
<td>(3)</td>
</tr>
<tr>
<td>155</td>
<td>Mathematical Logic</td>
<td>(3)</td>
</tr>
<tr>
<td>156</td>
<td>Logical Foundations of Mathematics</td>
<td>(3)</td>
</tr>
<tr>
<td>157</td>
<td>Theory of Recursive Functions</td>
<td>(3)</td>
</tr>
<tr>
<td>158</td>
<td>Automata Theory</td>
<td>(3)</td>
</tr>
<tr>
<td>160</td>
<td>Introduction to Topology</td>
<td>(3)</td>
</tr>
<tr>
<td>170</td>
<td>Partial Differential Equations</td>
<td>(3)</td>
</tr>
<tr>
<td>175</td>
<td>Functions of a Complex Variable</td>
<td>(3)</td>
</tr>
<tr>
<td>*181</td>
<td>Selected Topics of Secondary Mathematics</td>
<td>(3)</td>
</tr>
<tr>
<td>196</td>
<td>Advanced Topics in Mathematics</td>
<td>(1-4)</td>
</tr>
</tbody>
</table>

### 220A-220B. Topology (3-3)
Prerequisite: Mathematics 160. Mathematics 220A is prerequisite to 220B.

### 222A. Functional Analysis (3-3)
Prerequisite: Mathematics 149 and 160. Mathematics 222A is prerequisite to 222B.

### 224A-224B. Functions of a Complex Variable (3-3)
Prerequisite: Mathematics 221B and 175. Mathematics 224A is prerequisite to Mathematics 224B.

### 226A-226B. Functions of a Real Variable (3-3)
Prerequisite: Mathematics 211B. Mathematics 226A is prerequisite to Mathematics 226B.

### 227. Fourier Analysis (3)
Prerequisites: Mathematics 121A, 140, and 150.

### 228. Generalized Functions (3)
Prerequisites: Mathematics 121A, 140, and 150A.

### 229. Theory of Groups (3)
Prerequisite: Mathematics 150B.

### 230. Rings and Ideals (3)
Prerequisite: Mathematics 150B.

### 232. Theory of Fields (3)
Prerequisite: Mathematics 150B.

### 233. Linear Algebra and Matrix Theory (3)
Prerequisite: Mathematics 149.

### 240A-240B. Advanced Mathematical Statistics (3-3)
Prerequisite: Mathematics 140B and 121A. Mathematics 240A is prerequisite to Mathematics 240B.

### 241. Advanced Probability (3)
Prerequisites: Mathematics 121A and 134.

### 242. Non-parametric Statistics (3)
Prerequisite: Mathematics 140B.

*For National Science Foundation students only except with consent of instructor.*
243. Advanced Hypothesis Testing (3)
Prerequisite: Mathematics 140B.
Sequential probability ratio tests, confidence intervals, minimax and invariance
principles.

244. Multivariate Analysis (3)
Prerequisites: Mathematics 140B and 149.
Multivariate normal distributions; multivariate analysis of variance, factor analysis,
canonical correlation.

245. Linear Statistical Hypothesis Testing (3)
Prerequisites: Mathematics 140A and 149.
The Multivariate Normal distribution; distribution of quadratic forms; linear
and curvilinear models; general linear hypotheses of full rank, regression models.

246. Statistical Decision Theory and Applications (3)
Prerequisites: Mathematics 121A and 140B.
Sequential and nonsequential decision methods; complete classes of decision
functions; admissible decision functions, adaptive control systems, stochastic sta-

tility and control.

247. Design of Experiments (3)
Prerequisites: Mathematics 140A and 149.
Experimental design models, a basic approach as well as a matrix algebra ap-

proach.

260A-260B. Theory of Computability (3-3)
Prerequisites: Mathematics 137 and 158.
Models of computation.

265A-265B. Formal Languages and Syntactic Analysis (3-3)
Prerequisites: Mathematics 116 and 139.
Definition of formal grammars; Arithmetic expressions and precedence grammars,
context-free and finite-state grammars. Algorithms for syntactic analysis. Relation-
ship between formal languages and automata.

268A-268B. Applications of Digital Computation (3-3)
Selected topics for information retrieval, artificial intelligence, theorem proving
by computer, simulation, computer graphics, learning theory, computer-assisted
instruction.

270A-270B. Advanced Numerical Analysis (3-3)
Prerequisites: Mathematics 121A and 135B.
Iterative methods for the solution of linear equations and application to partial
equations. Extra-polation to the limit. Ordinary boundary value

problems.

277. Research (1-3)
Prerequisite: Six units of graduate level mathematics.
Research in one of the fields of mathematics. Maximum credit six units appli-
cable on a master's degree.

295. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and
instructor.
Individual study. Six units maximum credit.

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

MICROBIOLOGY

GENERAL INFORMATION

The Department of Microbiology, in the College of Sciences, offers graduate
study leading to the Master of Science degree in Microbiology. Facilities are
available for research in all areas of microbiology including ecology, electron
microscopy, genetics, immunology, marine microbiology, pathogenic bacteria and
fungi, physiology, and virology.

After completing his course of study, the student may continue further aca-
demic study or obtain employment as a bioanaly, research technician, community
college teacher, or supervisory medical technologist.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate
Division with classified graduate standing, as described in Part Three of this bul-
letin. To qualify for admission to classified graduate standing in the Department
of Microbiology the student must also:

(a) have completed the minimum requirements for a baccalaureate degree in
microbiology at San Diego State.
(b) have an undergraduate grade point average of 2.75, or demonstrate the
ability to do superior graduate work, and
(c) have been accepted by an adviser in microbiology and have planned an
acceptable official program of study.

ADVANCEMENT TO CANDIDACY

In addition to satisfying the general requirements for advancement to candidacy
as stated in Part Three of this bulletin, the student must also pass a comprehensive
oral qualifying examination in the Department of Microbiology before the end
of the first semester as a classified graduate student.

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
bulletin, the student must complete a graduate program of at least thirty units of
credit. The student must complete a program of at least thirty units of
credit.

The student must also pass a comprehensive
oral qualifying examination in the Department of
Microbiology before the end of the first semester as a classified graduate student.

Among the courses selected with the approval of the graduate
counselor, the student's program must include courses
in the broad fields of microbiology is required.

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.

FACULTY

Chairman, Department of Microbiology: H. A. Walch, Ph.D.
Graduate Adviser: Beatrice L. Kelly
Professors: W. L. Baxter, Ph.D.; H. B. Moore, Ph.D.; H. A. Walch, Ph.D.
Associate Professors: Beatrice L. Kelly, Ph.D.; L. N. Phelps, Ph.D.
Assistant Professors: E. A. Anderes, Ph.D.; Alice C. Jokela, Ph.D.; J. F. Steen-
bergen, Ph.D.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MICROBIOLOGY

UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Biology</th>
<th>Advanced General Microbiology (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>101. Cellular Physiology (4)</td>
<td>108. General Virology Laboratory (2)</td>
</tr>
<tr>
<td>103. General Cytology (4)</td>
<td>109. Hematology (4)</td>
</tr>
<tr>
<td>110. Ecology (4)</td>
<td>111A-111B. Epidemiology (2-2)</td>
</tr>
<tr>
<td>111. Aquatic Biology (3)</td>
<td>114. Bacterial and Viral Genetics (2)</td>
</tr>
<tr>
<td>115. Radiation Biology (3)</td>
<td>115. Advanced General Microbiology (4)</td>
</tr>
<tr>
<td>116. Marine Microbiology (3)</td>
<td>116. Marine Microbiology (4)</td>
</tr>
<tr>
<td>117. Aquatic Biology (3)</td>
<td>120. Animal Viruses (4)</td>
</tr>
<tr>
<td>118. General Virology Laboratory (2)</td>
<td>130. Experimental Immunology (4)</td>
</tr>
<tr>
<td>121. General Entomology (4)</td>
<td>140. History of Microbiology (2)</td>
</tr>
<tr>
<td>122. Medical Entomology (3)</td>
<td>150. Radiation Biology Laboratory (2)</td>
</tr>
<tr>
<td>123. Medical Entomology (2)</td>
<td>155. Cell Genetics (4)</td>
</tr>
<tr>
<td>124. Medical Entomology (2)</td>
<td>181. Advanced Cellular Physiology (1)</td>
</tr>
<tr>
<td>125. Medical Entomology (1)</td>
<td>131. Advanced General Microbiology (4)</td>
</tr>
</tbody>
</table>

BOTANY

<table>
<thead>
<tr>
<th>Botany</th>
<th>Zoology</th>
</tr>
</thead>
<tbody>
<tr>
<td>101. Phycology (4)</td>
<td>108. Histology (4)</td>
</tr>
<tr>
<td>102. Mycology (4)</td>
<td>121. General Entomology (4)</td>
</tr>
<tr>
<td>103. General Botany</td>
<td>122. Advanced Entomology (4)</td>
</tr>
<tr>
<td>104. Medical Mycology (4)</td>
<td>126. Medical Entomology (3)</td>
</tr>
<tr>
<td>105. General Virology (2)</td>
<td>128. Parasitology (4)</td>
</tr>
</tbody>
</table>

GRADUATE COURSES

<table>
<thead>
<tr>
<th>Microbiology</th>
<th>Advanced Pathogenic Bacteriology (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200. Seminar (2 or 3)</td>
<td>210. Seminar in Industrial and Agricultural Microbiology (2)</td>
</tr>
<tr>
<td>205. Seminar in Microbial Physiology (2)</td>
<td>215. Seminar in Bacterial and Viral Genetics (2)</td>
</tr>
<tr>
<td>210. Seminar in Pathogenic Bacteriology (2)</td>
<td>220. Seminar in Industrial and Agricultural Microbiology (2)</td>
</tr>
<tr>
<td>215. Seminar in Bacterial and Viral Genetics (2)</td>
<td>240. Seminar in General Microbiology (2)</td>
</tr>
<tr>
<td>220. Seminar in Industrial and Agricultural Microbiology (2)</td>
<td>245. Seminar in Aquatic Microbiology (2)</td>
</tr>
</tbody>
</table>

Refer to the Biological Sciences section of this Bulletin for the descriptions of degree programs in microbiology applicable to the Master of Science degree program in Microbiology. (See same section for titles and descriptions of Science degree in Microbiology.)

MUSIC

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
- Theory

ADMISSION TO THE GRADUATE DIVISION

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

(a) Have completed a bachelor's degree with a major in music including full preparation in theory, literature, and performance.

(b) Satisfactorily complete placement examinations in theory, music history and literature, and performance. Details may be obtained from the Department of Music.

(c) Be accepted in the emphasis of his 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 bulletin.

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 Bulletin, 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 200-numbered courses including Music 299. 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 299, Thesis, and to pass a final oral examination on the thesis. Students electing the composition emphasis will be required to enroll in Music 299 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.

SCHOLARSHIPS

Information on music scholarships may be obtained by writing to the Chairman, Music Scholarship Committee, Music Department, San Diego State.
FACULTY

Chairman, Department of Music: J. D. Smith, M.M.
Graduate Adviser: Master of Arts, J. D. Smith
Credentialed Advisers: Edith Savage; J. D. Smith

M.M.; M. S. Snider, M.A.; David Ward-Steinman, D.M.A.

Associate Professors: F. W. Almond, Ph.D.; Conrad Bruderer, D.M.; T. R.

Assistant Professors: Howard Hill, M.M.; J. D. Logan, M.M.; D. M. Loomis, M.M.;
Daniele Mitchell, M.S.; Jean Moe, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN MUSIC

UPPER DIVISION COURSES

105. Modern Harmonic Practice (3)
106. Sixteenth Century Counterpoint (3)
107. Composition Laboratory (1)
109A-109B. Instrumentation and Arranging (2-2)
121S. Workshop in Instrumental Techniques and Chamber Music for Strings, Woodwind, and Brass Instruments (2)
141A-141B. Performance Studies Pedagogy (3-3-3)

GRADUATE COURSES

209. Advanced Orchestration (2)
Prerequisite: Music 109B.

210. Electronic Music (3)
Prerequisite: Undergraduate concentration in composition.

211. Analytical Studies of Music (3)
Prerequisite: Music 108.

212. Advanced Counterpoint Techniques (3)
Prerequisites: Music 59B and 106.

213. Seminar: Music Theory (3)
Prerequisites: Music 109B and 106.

246A. Advanced Choral Conducting (2)
Prerequisite: Music 146B.

246B. Advanced Instrumental Conducting (2)
Prerequisite: Music 146B.

250. Advanced Performance Studies (2)
Fifteen one-hour private lessons.
Prerequisite: Audition before music faculty.

251. Comparative Music Education (3)
Advanced studies in technical, stylistic, and aesthetic elements of artistic performance culminating in a graduate recital.

252. Seminar in Music History (3)
Prerequisites: Music 152B and consent of instructor.

253. Musicology (3)
Prerequisites: Music 152A and 152B.

255. Seminar: A Major Composer (3)
Prerequisite: Music 152B. Completion of a seminar in Music 252 is recommended. The life, milieu, and works of a major composer, such as Bach, Mozart, or Schubert, will be studied. Maximum credit six units applicable on a master's degree.

260. Seminar in the Notation of Polyphonic Music (3)
Prerequisite: Music 152B. Completion of Music 252A is recommended. Problems related to the notation of Medieval, Renaissance, and Baroque music. Examples will be transcribed into modern notation.

A. Notation of Soloistic Music: Scores and Tablatures.
B. Notation of Ensemble Music: White Manuscript Notation.
C. Notation of Ensemble Music: Black Notation to the End of Franco-Cantus.
D. Notation of Ensemble Music: French, Italian, Mixed and Mannered Notation.

270. Seminar: Interpretation of Early Music (3)
Prerequisites: Completion of Music 252A and 252B is recommended. Performance practice in Medieval, Renaissance, and Baroque music; projects in music editing, reports; performance on historical instruments. Participation in the Collegium Musicum required.

290. Research Procedures in Music (3)
Reference materials, bibliography, investigation of current research in music, processes of thesis topic selection, and techniques of scholarly writing.

296. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor. Individual study. Six units maximum credit.

298. Thesis or Project (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

PHILOSOPHY

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 THE GRADUATE DIVISION
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. In addition, they must have completed an undergraduate major with a minimum of 24 upper division units in philosophy including courses in Ancient, Medieval, and Modern History of Philosophy. A grade point average of 3.0 (B) is required in all upper division work in philosophy.

ADVANCEMENT TO CANDIDACY
All students must meet the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Three of this bulletin.

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 bulletin, the student must meet the following:

1. A minimum of 24 units in philosophy from courses listed below as acceptable on master's degree programs. At least 12 of these units must be in 200-numbered courses, and 15 of these units must be in 300-numbered courses. Philosophy 299, Thesis, Philosophy 298 may not be used to fulfill this 15-unit requirement. The remaining elective (6 units) must be selected from philosophy, in related disciplines, with the approval of the adviser from courses in philosophy, in related disciplines, or in courses required for the community college credential.

2. Demonstrate a reading knowledge of French or German.

FACULTY

Chairman, Department of Philosophy: W. H. Koppelman, Ph.D.
Graduate Adviser: Peter O'Reilly
Associate Professors: M. J. Carella, Ph.D.; W. H. Koppelman, Ph.D.; Rosemary Z. Lauer, Ph.D.
Assistant Professors: A. L. Feenberg, M.A.; E. A. Truxell, Ph.D., Leon Rosenstein, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHILOSOPHY

UPPER DIVISION COURSES

102. History of Philosophy II (3) 127. Values and Social Sciences (3)
104. History of Philosophy IV (3) 128. Theory of Ethics (3)
105A-105B. Twentieth Century Philosophy (3-3) 131. Philosophy of Language (3)
105C. Philosophy of Education (3) 132. Philosophy of History (3)
108. Recent Existentialism (1) 133. Philosophy of Religion (3)
109. Ordinary Language Analysis (3) 135. Metaphysics (3)
110. Philosophy of Law (3) 136. Philosophy of Art (3)
121. Deductive Logic (3) 142. American Philosophy (3)
122. Inductive Logic (3) 143. A Major Philosopher (3)
123. Theory of Knowledge (3) 159. Selected Topics (3)
125. Metaphysics (3)
GRADUATE COURSES

201. Seminar in Ancient Philosophy (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 101.
Directed research in a major author (e.g., Plato or Aristotle), or a school (e.g., the Pythagoreans or the Stoics), or a problem (e.g., causation or the state). Maximum credit six units applicable on a master's degree.

202. Seminar in Medieval Philosophy (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 102.
Directed research in a major author (e.g., Augustine or Aquinas), or a school (e.g., neo-Aristotelianism), or a problem (e.g., political philosophy or reason and authority). Maximum credit six units applicable on a master's degree.

203. Seminar in Modern Philosophy (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 103.
Directed research in a major author (e.g., Hume or Kant), or a school (e.g., the continental rationalists or the British empiricists), or a problem (e.g., the nature of substance). Maximum credit six units applicable on a master's degree.

205. Seminar in Contemporary Philosophy (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 105.
Directed research in a major author (e.g., Dewey or Wittgenstein), or a school (e.g., the pragmatists or the language analysts), or a problem (e.g., perception or personhood). Maximum credit six units applicable on a master's degree.

211. Seminar in Legal Philosophy (3)
Prerequisite: 12 upper division units in philosophy.
Directed research in recurrent themes of philosophical significance in jurisprudential literature.

212. Seminar in Political Philosophy (3)
Prerequisite: Twelve units of upper division work in philosophy.
Directed research in a major problem in political philosophy or the work of a major political philosopher.

221. Seminar in Deductive Logic (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 121.
A comparison of deductive systems in logic. Problems of definability, consistency, and completeness. The role of logic in the foundations of mathematics.

223. Seminar in Epistemology (3)
Prerequisite: 12 units of upper division work in philosophy.
Basic problems concerning meaning, perception and knowledge.

225. Seminar in Metaphysics (3)
Prerequisite: 12 units of upper division work in philosophy.
An inquiry into the search for significant quantities of reality.

228. Seminar in Ethics (3)
Prerequisite: 12 units of upper division work in philosophy.
Contemporary ethical issues. Critical analysis of the works of some leading theorists, such as Moore, Dewey, Stevenson, and Toulmin.

231. Seminar in Semantics and Logical Theory (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 121 and 131.
Contemporary issues in the foundations of logic and theories of language.

235. Seminar in Philosophy of Religion (3)
Prerequisite: 12 upper division units in philosophy including Philosophy 135.
A philosophical investigation of the nature of religious thought: its structure, growth, and significance.

236. Seminar in Philosophy of Art (3)
Prerequisite: 12 units of upper division work in philosophy.
An analysis, criticism, and comparative study of selected philosophies of art.

237. Seminar in Philosophy of Science (3)
Prerequisites: 12 upper division units in philosophy including Philosophy 122 and 137.
The methodology of the empirical sciences. The logical structure of science.

250. Seminar in Philosophy of Religion (3)
Prerequisite: 12 units of upper division work in philosophy.
Directed research in a major problem or movement in philosophy. Maximum credit six units applicable on a master's degree.

258. Special Study (1-3)
Individual study. Maximum credit six units.
Prerequisites: 12 units of upper division work in philosophy and consent of staff; to be arranged with department chairman and instructor.

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

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 THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin.

ADUANCE TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this bulletin.

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 bulletin. 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 200-numbered courses. Physical Education 291, Research Techniques, and either Physical Education 295, Thesis (Plan A), or Physical Education 295, Seminar (Plan B), are required. Students electing Plan II 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 advisor.

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.

FACULTY

Chairman, Department of Physical Education: A. W. Olsen, Ed.D.
Graduate Adviser: Paul Governali

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHYSICAL EDUCATION

UPPER DIVISION COURSES

153A-153B. Problems in Dance (2-2)
157A-157B. Choreography in Contemporary Dance (Men and Women) (3-3)
160. Mechanics of Body Movement (Women) (3)
161. The Psychological Bases of Physical Education (3)
162. Measurement and Evaluation in Physical Education (3)
163. Physical Education (3)
164. Athletic Injuries (Sports Medicine) (2)
166. Applied Anatomy and Kinesiology (3)
168. Physiology of Exercise (3)
169. Adapted Activities (2)
181. History and Philosophy of Dance (2)
200. Seminar (3)
An intensive study in advanced physical education, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.
201. Curriculum in Physical Education (3)
Prerequisite: Major or minor in physical education, or equivalent.
Curricula in physical education. Special emphasis on curriculum construction and evaluation.
202. Administration of Physical Education in the Secondary Schools (3)
Prerequisite: Major or minor in physical education, or equivalent.
Topics include personnel problems, selection and maintenance of equipment and facilities, program organization and evaluation, budget, and related items.
203. History of Physical Education (3)
Historical forces guiding the development of physical education from ancient to modern times.
204. Problems in Recreation (2)
Same course as Recreation 204.
Current problems facing the recreation profession, through a review of literature, analysis and evaluation of actual problems. Written reports required.
205. Current Trends and Issues in Physical Education (3)
A critical appraisal of contemporary trends and issues. Investigation and analysis of professional literature.
206. Seminar in Competitive Athletics (3)
Prerequisite: Major or minor in physical education or recreation.
In-depth study of the skills, techniques, and teaching methods involved with the coaching of athletics; the study of possible solutions to problems associated with the program of competitive school athletics.
207. Advanced Kinesiology and Biomechanics (3)
Prerequisites: Zoology 8, 22, and Physical Education 167.
Principles of mechanics applied to the analysis of human motion. Physical Education 167 and 168.
208. Advanced Physiology of Exercise (3)
Prerequisites: Zoology 8 and 22, Physical Education 167 and 168.
209. Advanced Adapted Activities (3)
Prerequisites: Zoology 8 and 22, Physical Education 167 and 168.
Individual exercise programs, Preventive and corrective exercises, special programs. Individual exercise programs, Preventive and corrective exercises, Physical Education 167 and 168.
210. Seminar in Facilities for Physical Education (3)
Prerequisite: Major or minor in physical education or recreation.
Individual study of problems related to the planning, development and maintenance of physical education and athletics facilities.
211. Advanced Evaluation in Physical Education (3)
Prerequisite: Physical Education 162.
Methods, statistical techniques, and apparatus used in testing physical performance. Sources of error, limitations on application and interpretation. Practice in construction and use of tests.
213. Problems in Physical Education (3)
Prerequisite: Major or minor in physical education.
A study of selected areas of the physical education program.

214. Seminar in Dance Programs (3)
Prerequisite: Major or minor in dance or physical education.
Procedures and evaluation of all forms of educational dance with implications for curriculum planning. Lectures and research. Completion of written project.

215. Philosophical Foundations for Physical Education (3)
Major philosophies and their application in physical education.

220. Principles of Neuromuscular Tension (3)
Prerequisite: Physical Education 167.
Theories underlying the causes of muscular hypertension and the application of hypokinetic principles in daily living.

221. Exercise Electrocardiography (3)
Prerequisites: Physical Education 161.
Principles of resting and exercise electrocardiography with emphasis on ergometric methods and application to exercise physiology.

223. Advanced Exercise Physiology Laboratory (3)
Nine hours of laboratory.
Prerequisites: Physical Education 169.
A laboratory course designed to develop competency in respiratory metabolism, pulmonary function, gas analysis, blood chemistry and ergometry. Experience in the application of exercise procedures with human subjects and analysis and interpretation of results.

227. Fitness of Adults (3)
One lecture and six hours of laboratory.
Prerequisite: Physical Education 169.
Evaluation, exercise prescription, and training of adults. An understanding of the underlying hypokinetic diseases of adults and the procedures used in coping with the associated health problems of an automated environment.

261. Seminar in Motor Learning and Motor Performance (3)
Prerequisite: Physical Education 161.
A review of research in physical education and related fields plus experimental laboratory experiences in motor learning.

291. Research Techniques (3)
Prerequisites: Major in Physical Education, and Physical Education 162.
Principles and methods of planning and carrying out the investigation of problems related to physical education. The development of research designs and practice in formulating and testing hypotheses as well as the interpretation of results. (Prerequisite to thesis.)

295. Seminar in Physical Education (3)
Prerequisites: Physical Education 291 and advancement to candidacy for the master's degree in physical education.
Selected subjects in physical education culminating in written projects. Limited to students following Plan B for the Master of Arts Degree in Physical Education.

298. Special Study (1-3)
Prerequisite: Consent of special study adviser.
Individual study. Six units maximum credit.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN THE PHYSICAL SCIENCES

With the approval of the department Graduate Committee, 100- or 200-numbered courses offered in the College of Sciences and in the School of Engineering may be used to satisfy the requirements for the degree.

GRADUATE COURSES

Physical Science 300. Seminar (3 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.

Physical Science 298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

Physical Science 299. Thesis or Project (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a thesis or project in one of the physical sciences for the master's degree.

PHYSICS

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 primarily for those students who anticipate additional work leading to the doctorate degree in 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, industry, and public health services, organizations operating nuclear power reactors, military installations, and the Atomic Energy Commission.

MASTER OF ARTS AND MASTER OF SCIENCE DEGREES IN PHYSICS

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin 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.

Attention is called to the status of an unclassified graduate student as described in Part Three of this bulletin under Admission to the College for Graduate Study. "An unclassified graduate student is not eligible to enroll in 200-numbered courses. Except with permission of the instructor and concurrence of the Dean of Graduate Studies. All credit earned by an unclassified graduate student is subject to evaluation as to its acceptance for graduate credit in a master's degree curriculum."

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 bulletin.

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 bulletin, the student must complete a graduate program which includes the following courses in physics: Physics 210A, 297, 297A, 275A, 299, and 299A. 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 bulletin, the student must complete a graduate program which includes the following courses in physics: Physics 210A, 297A, 270A, 297, 299, and three additional courses in physics. Physics 210A, 270A, 297, 299, and three additional units chosen from Physics 205, 219, 260, and 275A. The remaining fifteen 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 THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin, 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 towards 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 bulletin.

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 bulletin, the student must complete a graduate program of at least 30 units which includes the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 140, Principles of Human Physiology</td>
<td>3</td>
</tr>
<tr>
<td>Biology 150, Radiation Biology</td>
<td>3</td>
</tr>
<tr>
<td>Physics 220, Radiation Physics</td>
<td>2</td>
</tr>
<tr>
<td>Physics 221, Radiological Physics</td>
<td>2</td>
</tr>
<tr>
<td>Physics 222, Health Physics</td>
<td>2</td>
</tr>
<tr>
<td>Physics 297, Research</td>
<td>3</td>
</tr>
<tr>
<td>Physics 299, Thesis</td>
<td>3</td>
</tr>
<tr>
<td>Approved 200-numbered courses</td>
<td></td>
</tr>
<tr>
<td>Total units</td>
<td>23</td>
</tr>
</tbody>
</table>

The remaining 7 units of the minimum 30 units required for the degree must be selected from upper division or 200-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.

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.

FACULTY

Chairman, Department of Physics: J. D. Templin, Ph.D.
Graduate Adviser: J. G. Teasdale
Credential Adviser: L. E. Smith, Jr.
Associate Professors: D. M. Cotrell, Ph.D.; P. F. Nichols, Ph.D.; R. J. Piscerchio, Ph.D.; D. E. Rehfuss, Ph.D.; S. B. W. Roeder, Ph.D.
Assistant Professors: R. L. Craig, M.S.; R. A. Lilly, Ph.D.; Jack Sarfatt, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHYSICS

UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>114. Acoustics (3)</td>
<td></td>
</tr>
<tr>
<td>122. Senior Physics Laboratory (2)</td>
<td></td>
</tr>
<tr>
<td>148. Nuclear Physics Laboratory (3)</td>
<td></td>
</tr>
<tr>
<td>151. Nuclear Physics (2)</td>
<td></td>
</tr>
<tr>
<td>153. Analog Computers (3)</td>
<td></td>
</tr>
<tr>
<td>156. Digital Computers (3)</td>
<td></td>
</tr>
<tr>
<td>167B. Semiconductor Devices (3)</td>
<td></td>
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<tr>
<td>173B. Physical Electronics (3)</td>
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</tbody>
</table>

GRADUATE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>200. Seminar (2 or 3)</td>
<td></td>
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<tr>
<td>Prerequisite: Consent of instructor.</td>
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<tr>
<td>An intensive study in advanced physics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.</td>
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<tr>
<td>205. Theoretical Mechanics (3)</td>
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<tr>
<td>210A-210B. Mathematics of Physics (3-3)</td>
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<tr>
<td>Prerequisites: Mathematics 118B, Physics 210A is prerequisite to Physics 210B. Topics from matrix theory, vector and tensor analysis, orthogonal function theory, calculus of variations and probability theory with particular emphasis on applications to physical theory.</td>
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</tr>
<tr>
<td>214. Advanced Acoustics (2)</td>
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<tr>
<td>Prerequisite: Physics 114. The acoustic wave equation in two and three dimensions. Propagation of sound in bounded media and enclosures. Radiation and scattering. Electrical-mechanical-acoustical elements and circuits.</td>
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</tr>
<tr>
<td>219. Statistical Mechanics (3)</td>
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<tr>
<td>Prerequisites: Physics 175 and 190. Classical and quantum statistics, kinetic theory, low pressure phenomena, Boltzmann transport equation, irreversible processes.</td>
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<tr>
<td>220. Radiation Physics (2)</td>
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<tr>
<td>Prerequisites: Physics 148 and 151. Topics in nuclear radiation phenomena, including interaction of radiation with matter; radiation detectors.</td>
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<tr>
<td>221. Radiological Physics (2)</td>
<td></td>
</tr>
<tr>
<td>Prerequisites: Physics 148 and 151. Topics in nuclear radiation phenomena, including interaction of radiation with matter; radiation detectors.</td>
<td></td>
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<tr>
<td>222. Health Physics (2)</td>
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<tr>
<td>Prerequisites: Physics 148 and 151. Topics and problems in health physics.</td>
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<tr>
<td>248. Advanced Nuclear Physics Laboratory (3)</td>
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<tr>
<td>One lecture and six hours of laboratory. Prerequisite: Physics 148. Experimental work involving sub-critical reactor assembly, neutron generator, whole-body counter, etc.</td>
<td></td>
</tr>
</tbody>
</table>

198: 199
251. Nuclear Physics (3)
Prerequisites: Physics 151, 175, and 190.
Theory of nuclear forces, nuclear reactions, interaction of radiation with matter, radioactivity, nuclear structure and high energy physics.

260. Advanced Electronics (3)
Prerequisite: Physics 173B.
Advanced topics in contemporary electronics.

270A-270B. Electromagnetic Theory (3-3)
Prerequisite: Physics 170. 270A is prerequisite to 270B.
Boundary value problems; time varying electric and magnetic fields; propagation of radiation; antennas, wave guides.

275A-275B. Quantum Mechanics (3-3)
Prerequisites: Physics 151, 175. 275A is prerequisite to 275B.
Quantum theory of radiation, molecular and nuclear systems. Approximation methods.

280. Theory of the Solid State (3)
Prerequisites: Physics 175, 180, and 190.
The band theory of solids, with applications to the electrical and optical properties of dielectrics, semi-conductors, and metals.

286. Advanced Optics (3)
Prerequisite: Physics 186.
Selected topics in advanced optics such as rigorous diffraction theory, optical spectra, lasers, non-linear optics, and applications of Fourier analysis to optical systems and information processing.

297. Research (1-3)
Prerequisite: Consent of department chairman.
Research in one of the fields of physics. Maximum credit six units applicable on a master's degree.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

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

POLITICAL SCIENCE

GENERAL INFORMATION

The Department of Political Science, in the School 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 bulletin under Social Science. Research facilities provided by the Department of Political Science include the Public Affairs Institute, the Methodology Laboratory, and the International Relations Center. The Department of Political Science is an associate member of the Inter-University Consortium for Political Science.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to San Diego State with unclassified graduate standing, and to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Political Science must have completed at least 12 upper division units in political science including at least 12 units of social science and must have earned an undergraduate grade point average of not less than 3.0 in the major field.

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as stated in Part Three of this bulletin.

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 bulletin, 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 of which at least 15 units must be in 200-numbered courses in advanced Political Science 101, The Scope and Method of Political Science, and including Political Science 299, Thesis. A final oral examination on the general field of the thesis is also required.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching 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 Graduate Division.

FACULTY

Chairman, Department of Political Science: R. C. Gripp, Ph.D.
Graduate Adviser: R. C. Gripp
M. D. Generales, Degree in Law and Political Science, University of Athens;
L. V. Padgett, Ph.D.
W. A. Schultze, Ph.D.; L. M. E. W. Miles, Ph.D.; Betty A. Nevold, Ph.D.;
Terrell, Ph.D.
<table>
<thead>
<tr>
<th>COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN POLITICAL SCIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UPPER DIVISION COURSES</strong></td>
</tr>
<tr>
<td>100A-100B. Research Methods in Political Science (3-3)</td>
</tr>
<tr>
<td>105. American Political Thought (3)</td>
</tr>
<tr>
<td>106B. Socialist Political Thought (3)</td>
</tr>
<tr>
<td>111A-111B. Theory of the State (3-3)</td>
</tr>
<tr>
<td>112. Modern Political Thought (3)</td>
</tr>
<tr>
<td>113. The Theory of Political Inquiry (3)</td>
</tr>
<tr>
<td>114. Problems in Political Theory (3)</td>
</tr>
<tr>
<td>115. American National Government (3)</td>
</tr>
<tr>
<td>118. Urban Politics (3)</td>
</tr>
<tr>
<td>119. Community Political Behavior (3)</td>
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<tr>
<td>121. Political Parties (3)</td>
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<tr>
<td>121. Political Behavior (3)</td>
</tr>
<tr>
<td>122. Political Communication (3)</td>
</tr>
<tr>
<td>123S. Contemporary American Politics (3)</td>
</tr>
<tr>
<td>124. The American Presidency (3)</td>
</tr>
<tr>
<td>126. Political Groups and Movements (3)</td>
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<tr>
<td>129. The Politics of Bureaucracy (3)</td>
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<tr>
<td>130. Government and Public Policy (3)</td>
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<tr>
<td>135. The Supreme Court and Contemporary Issues (3)</td>
</tr>
<tr>
<td>138. Law and the Political System (3)</td>
</tr>
<tr>
<td>139A-139B. American Constitutional Law (1-3)</td>
</tr>
<tr>
<td>165. Dynamics of Modern International Relations (3-3)</td>
</tr>
<tr>
<td>170A-170B. International Relations (3-3)</td>
</tr>
<tr>
<td>171. The Conduct of American Foreign Relations (3)</td>
</tr>
<tr>
<td>172. International Organization (3)</td>
</tr>
<tr>
<td>173. Principles of International Law (3)</td>
</tr>
<tr>
<td>174. National Security Policy (3)</td>
</tr>
<tr>
<td>175. International Relations of the Latin American States (3)</td>
</tr>
<tr>
<td>176. International Relations of the Developing Nations (3)</td>
</tr>
<tr>
<td>177. Comparative Foreign Policies (3)</td>
</tr>
<tr>
<td>180. Government of England (3)</td>
</tr>
<tr>
<td>181. Government of the Soviet Union (3)</td>
</tr>
<tr>
<td>183. Governments and Politics of South and Southeast Asia (3)</td>
</tr>
<tr>
<td>184. The Mexican Political System (3)</td>
</tr>
<tr>
<td>185. Governments of Continental Europe (3)</td>
</tr>
<tr>
<td>186. Comparative Communist Governments (3)</td>
</tr>
<tr>
<td>187. Governments and Politics of the Far East (3)</td>
</tr>
<tr>
<td>188. Governments and Politics of the African States (3)</td>
</tr>
<tr>
<td>189. Government and Politics of the Middle East (3)</td>
</tr>
<tr>
<td>190. Comparative Political Systems (3)</td>
</tr>
<tr>
<td>191. Government and Politics of the Developing Areas (3)</td>
</tr>
<tr>
<td>192. Political Change in Contemporary Africa (3)</td>
</tr>
<tr>
<td>193. Proseminar in Cross-National Studies (3)</td>
</tr>
<tr>
<td>194. Political Change in Latin America (3)</td>
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<tr>
<td>195. Political Systems of Latin America (3)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>GRADUATE COURSES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>200. Seminar in the Scope and Method of Political Science (3)</td>
</tr>
<tr>
<td>The discipline of political science and systematic training in its methodology. Required of all applicants for advanced degrees in political science.</td>
</tr>
<tr>
<td>210. Seminar in Political Theory (3)</td>
</tr>
<tr>
<td>Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>215. Seminar in American National Government (3)</td>
</tr>
<tr>
<td>Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>220. Seminar in Politics (3)</td>
</tr>
<tr>
<td>Prerequisite: Six units of upper division political science, three of which must come from Political Science courses 114 through 134. Process by which individuals and groups make demands upon political decision-makers, emphasis on the styles, structures, channels, and consequences of interest articulation. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>221. Seminar in Political Participation (3)</td>
</tr>
<tr>
<td>Prerequisite: Six units of upper division political science, three of which must be from Political Science courses 114 through 134. American political culture and subculture groupings as related to various dimensions of political behavior.</td>
</tr>
</tbody>
</table>

225. Seminar in the Legislative Process (3)                           |
Prerequisite: Six units of upper division political science. Emphasis on U.S., national, state, and local legislatures. |

226. Seminar in Political Psychology (3)                              |
(Same course as Psychology 226.) Prerequisites: Six units selected from Psychology 110, 112, 145; Political Science 100A-100B, 121, 122, 190. Theoretical analysis of the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus, and participation. |

230. Seminar in Public Law (3)                                        |
Maximum credit six units applicable on a master's degree. |

255. Seminar in Metropolitan Government and Politics (3)              |
Prerequisite: Political Science 117 or 118 or 119. Government and politics in the world's major metropolitan areas. Maximum credit six units applicable on a master's degree. |

272. Seminar in International Organization (3)                        |
Prerequisite: Political Science 172. Analysis of selected problems of international organization with special reference to those of the United Nations. Oral and written reports. |

280. Seminar in General Comparative Political Systems (3)             |
Prerequisite: Political Science 190 or 191, and three additional units of upper division political science. The field of comparative politics, including historical developments, major theoretical approaches, substantive concerns, and the impacts of the comparative method, methodological innovations in the study of foreign political systems. |

281. Seminar in Western Political Systems (3)                        |
Prerequisite: Six units of upper division political science. Conditions Comparative study of European and other modern political systems. The responsibility for the attainment and maintenance of democratic government. The relationship between social modernity and the functioning of Western democratic political institutions. |

282. Seminar in the Political Systems of the Developing Nations (3)   |
Prerequisite: Six units of upper division political science. Theoretical analysis of political development, modernization, and industrialization. Search for valid generalizations about the non-Western nations. |
284. Seminar in Communist Political Systems (3)
Prerequisite: Six units of upper division political science.
The differences and similarities among Communist nations in Europe and Asia, with particular reference to instruments of power and ideology. A comparison of Communist ruling techniques and processes.

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

291. Problem Analysis (2)

297. Research in Political Science (3)
Prerequisite: Consent of the department chairman.
Research in political theory, political parties, comparative government, international relations, public law, or American government.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
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 24 units of approved graduate courses in psychology, including Psychology 202A, 202B, 222, 223, and 299. Psychology 270, 275, and 277 are 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 requirements set forth above, the Master of Science degree may be obtained with the following three concentrations:

1. Clinical Psychology: At least 36 units of approved upper division or graduate courses in psychology, including Psychology 202A, 202B, 204, 205, 211 or 212, 233, 296, and 299. Psychology 270 is also required for this program if similar content has not been completed as an undergraduate. Registration for 6 units of Psychology 296, Directed Field Experience, is contingent upon prior cooperative arrangement by the student and the field agency in consultation with the Department of Psychology Practicum Committee.

2. Industrial-Personnel Psychology: At least 30 units of approved upper division or graduate courses in psychology, including Psychology 202A, 202B, 219, 220, 221, 235, 297, and 299. Psychology 270 is required for this program if similar content has not been completed as an undergraduate.

3. General Psychology with the Community College Teaching Credential: At least 28 units of approved upper division or graduate courses in psychology including Psychology 202A, 202B, 225, 296, and 299. Psychology 270, 275, and 277 are required for this program if similar content has not been completed as an undergraduate. Registration for Psychology 296 is contingent upon prior cooperative arrangements as set forth above under Clinical Psychology. Other requirements for the credential include the completion of Education 201, 251, and 316. Education 201 may be included among the 30 units required for the master's degree. Education 223, normally required in the credential program, is routinely waived for Community College Teaching Credential candidates in the Department of Psychology, but completion of the course has proved to be advantageous to individual students. The combined Master of Science in Psychology—Community College Teaching Credential program requires a minimum of 36 semester units.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching assistantships in psychology are available to a limited number of qualified students. Application blanks and further information may be obtained from the Chairman of the Department.

FACULTY

Chairman, Department of Psychology: Robert Penn, Ph.D.

Graduate Advisor: W. A. Hurwich

Credentisl Adviser: W. D. Kimzon


SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to the general requirements set forth above, the Master of Arts program requires completion of at least 24 units of approved graduate courses in psychology, including Psychology 202A, 202B, 222, 223, and 299. Psychology 270, 275, and 277 are required for this program if similar content has not been completed as an undergraduate. Registration for 6 units of Psychology 296, Directed Field Experience, is contingent upon prior cooperative arrangement by the student and the field agency in consultation with the Department of Psychology Practicum Committee.

1. Clinical Psychology: At least 36 units of approved upper division or graduate courses in psychology, including Psychology 202A, 202B, 204, 205, 211 or 212, 233, 296, and 299. Psychology 270 is also required for this program if similar content has not been completed as an undergraduate. Registration for 6 units of Psychology 296, Directed Field Experience, is contingent upon prior cooperative arrangement by the student and the field agency in consultation with the Department of Psychology Practicum Committee.

2. Industrial-Personnel Psychology: At least 30 units of approved upper division or graduate courses in psychology, including Psychology 202A, 202B, 219, 220, 221, 235, 297, and 299. Psychology 270 is required for this program if similar content has not been completed as an undergraduate.

3. General Psychology with the Community College Teaching Credential: At least 28 units of approved upper division or graduate courses in psychology including Psychology 202A, 202B, 225, 296, and 299. Psychology 270, 275, and 277 are required for this program if similar content has not been completed as an undergraduate. Registration for Psychology 296 is contingent upon prior cooperative arrangements as set forth above under Clinical Psychology. Other requirements for the credential include the completion of Education 201, 251, and 316. Education 201 may be included among the 30 units required for the master's degree. Education 223, normally required in the credential program, is routinely waived for Community College Teaching Credential candidates in the Department of Psychology, but completion of the course has proved to be advantageous to individual students. The combined Master of Science in Psychology—Community College Teaching Credential program requires a minimum of 36 semester units.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching assistantships in psychology are available to a limited number of qualified students. Application blanks and further information may be obtained from the Chairman of the Department.

FACULTY

Chairman, Department of Psychology: Robert Penn, Ph.D.

Graduate Advisor: W. A. Hurwich

Credentisl Adviser: W. D. Kimzon


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS

UPPER DIVISION COURSES IN PSYCHOLOGY

108. Advanced Developmental Psychology (3)
109. Mental Deficiency (3)
111. Experimental Psychology: Perception (4)
112. Experimental Psychology: Social (4)
113. Experimental Psychology: Psychological (4)
114. Experimental Psychology: Comparative (4)
115. Experimental Psychology: Personality and Social (4)
116. Experimental Psychology: Learning (4)
117. Experimental Psychology: Private Behavior (4)
118. Experimental Psychology: Child Development (4)
121. Personnel and Industrial Psychology (3)

GRADUATE COURSES

200. Seminar (3)
Prerequisite: 24 upper division units of psychology or consent of instructor.
An intensive study in advanced psychology, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

201. Seminar (3)
Prerequisite: 24 units in psychology, which may include educational psychology courses in the School of Education.
A review, integration, and supplementation of the student's knowledge of psychology.

202A-202B. Contemporary Psychology (3-3)
Prerequisite: Bachelor's degree in psychology.
A comprehensive survey of contemporary literature in psychology, dealing with recent developments in the areas of learning and motivation, perception, psychotherapy, personality and psychodynamics, social behavior, and experimental inference.

204. Psychological Assessment I (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 105, 150, 178, and consent of the Graduate Adviser.
Theory and practice in assessment of intelligence and special abilities.

205. Psychological Assessment II (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 151, 204, and consent of the Graduate Adviser.
Theory and practice in assessment of personality and behavior disorders.

211. Seminar in Behavior Disorders of Childhood and Adolescence (3)
Prerequisite: Psychology 105, 150, 178, and consent of the Graduate Adviser.
A comprehensive survey of contemporary literature in psychology, dealing with recent developments in the areas of learning and motivation, perception, psychotherapy, personality and psychodynamics, social behavior, and experimental inference.
212. Seminar in Behavior Disorders of Adults (3)  
Prerequisites: Psychology 150, 151, and consent of the Graduate Adviser.  
Contemporary approaches to emotional and behavioral problems of adults. Considers developmental, cognitive and social variables as well as theory and treatment.

219. Seminar in Personnel Psychology (3)  
Prerequisites: Psychology 121, and consent of the Graduate Adviser.  
Problems and procedures in selection, classification, and performance appraisal, focusing on testing in industry, the interview, and other selection and assessment devices. Criterion development and measurement methods.

220. Seminar in Organizational Psychology (3)  
Prerequisites: Psychology 123 or Business Administration 145, and consent of the Graduate Adviser.  
Applications of psychological principles and methods of investigation to problems of industrial relations and motivation of employees; factors influencing morale and employee productivity; criteria of job proficiency; psychological aspects of worker-management relationships and leadership.

221. Seminar in Problems in Social Psychology (3)  
Prerequisites: Psychology 110, 145, 175, and consent of the Graduate Adviser.  
Factors influencing the formation of attitudes, opinions, and stereotypes; the establishment of roles during socialization of the individual; social crises, change, and resistance to change; the causes and alleviation of interpersonal conflict.

222. Seminar in Theoretical Psychology (3)  
Prerequisites: Psychology 175, 178, and consent of the Graduate Adviser.  
Basic concepts and principles integrating information in the areas of learning, emotion, motivation, personality, and social interaction. Relationships of scientific methods to the formation and testing of hypotheses and other conceptualizations.

223. Experimental Design (3)  
Prerequisites: Psychology 110, 170, and consent of the Graduate Adviser.  
Principles and methods of planning and carrying out systematic investigations to answer questions concerning human behavior with stress on the interdependence of experimental design and statistical evaluation of results. Practice in formulation of testable hypotheses, techniques of equating groups, solution of sampling problems, and interpretation of results.

224. Advanced Experimental (3)  
One lecture and six hours of laboratory.  
Prerequisite: Psychology 223, and consent of the Graduate Adviser.  
Methods, techniques, and apparatus applicable to questions of various types. Special attention is given to sources of error, limitations on interpretations, and psychophysical methods. Students will design and carry out experiments in preparation for original independent investigations.

225. Principles of Test Construction (3)  
Prerequisites: Psychology 105, 170, and consent of the Graduate Adviser.  
Detailed consideration of adequate sampling techniques, item construction, item analysis, determination and enhancement of reliability and validity of tests.

226. Seminar in Political Psychology (3)  
Prerequisites: Six units selected from: Psychology 110, 112, 145, Political Science 100A–100B, 121, 122, 105, and consent of the Graduate Adviser.  
Psychological factors on the individual's political behavior; psychological theory as it applies to political variables such as: ideology, conflict, consensus, and participation. (Same course as Political Science 226.)

227. Seminar in Physiological Correlates of Behavior (3)  
Prerequisites: Psychology 50, 113 or 142, or nine units of biology; and consent of the Graduate Adviser.  
An exploration of current research and theory in physiological psychology with emphasis on behavioral correlates and psychophysiology.
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 Urban Planning degree. Research facilities are provided including the Institute of Public and Urban Affairs and the Public Administration Center. The San Diego metropolitan community offers 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. Also, it is a participant in the NASPAA Urban Administration Fellows Program.

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 related areas.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to San Diego State with unclassified graduate standing, and to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. The student must also satisfy the following requirements: (1) have had an adequate preparation in the social sciences as evaluated by the department (students with unclassified graduate standing may remove deficiencies in this requirement by taking courses which are in addition to the 30-unit minimum for the degree); and (2) have maintained an undergraduate grade point average of not less than 3.0 (B) in the major field.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, as described in Part Three of this bulletin.

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 bulletin. The student must also complete a part of his program: (1) at least eighteen units of 200-numbered courses, including Public Administration 201; (2) a minimum of twelve units of upper division or graduate courses in public administration or related fields selected under advisement. Public Administration 299, 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 graduate adviser. The student's program must include a minimum of nine units in one of the fields of concentration, formation, and administration of public policy; urban administration; organizational behavior and development; recreation administration; or fiscal policy and administration. The student must include in his program at least six units in Public Administration 296, Internship in Public Administration, unless this requirement is waived by the graduate adviser on the basis that he has had satisfactory qualifying experience. 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 THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to San Diego State with unclassified graduate standing, and to the Graduate Division with classified standing, as described in Part Three of this bulletin. The student must also satisfy the following requirements: (1) possess a bachelor's or higher degree in a field that is related to urban planning, or have a bachelor's degree in another field and have completed 24 units of urban planning courses; (2) have a minimum of 6 units in political science, 6 units in philosophy, 6 units in economics, 6 units in geography, and 6 units in anthropology. (Students with degrees other than those listed may be allowed to enter the program under appropriate conditions); (3) be admitted to the program only after passing a comprehensive examination. The student must also be admitted to the program on the basis of his past record, and other qualifications as described in Part Three of this bulletin.

ADVANCEMENT TO CANDIDACY

To be eligible for advancement to candidacy, the student must, in addition to holding classified standing, have completed at least 24 units of the course work listed on the graduate standing requirements for the program it is not sufficient merely to file the general college requirements for the degree. Students are admitted to the program only if they have had a minimum of 6 units in political science, 6 units in philosophy, 6 units in economics, 6 units in geography, and 6 units in anthropology, as described in Part Three of this bulletin.

SPECIFIC REQUIREMENTS FOR THE MASTER OF CITY PLANNING DEGREE

In addition to meeting the requirements for classified graduate standing in the Graduate Division for the purpose of pursuing the Master of City Planning degree, the student must complete an approved program of studies consisting of at least 60 units of graduate courses and research. The student must complete an approved program of studies consisting of at least 24 units of work leading to the Master of City Planning degree. The student must be approved by the program director. Detailed instructions concerning application procedures for the program must be sent to the applicant along with all necessary forms. As there are specific forms for the graduate division, the student must, in addition to holding classified standing, have completed at least 24 units of the course work listed on the graduate standing requirements for the program it is not sufficient merely to file the general college requirements for the degree. Students are admitted to the program only if they have had a minimum of 6 units in political science, 6 units in philosophy, 6 units in economics, 6 units in geography, and 6 units in anthropology as described in Part Three of this bulletin.

SPECIFIC REQUIREMENTS FOR THE MASTER OF CITY PLANNING DEGREE

a. City Planning 261, Urban Design and Land Use Planning Studio (6);

b. City Planning 266A, Seminar in Urban Planning (3);

c. Nine units of 200-numbered courses in planning administration, history, readings, and research.

d. City Planning 296C, Seminar in Urban Planning Implementation (3);

e. Electives to complete the program will be selected with the assistance of the advisor.

At least 30 units must be completed in residence at San Diego State, and at least 24 of the program courses shall be enrolled in and complete after advancement to candidacy. Not more than a total of 9 units in courses 297 and 298 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 THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to San Diego State with unclassified graduate standing, and to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. 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 college admission forms. After the student has received notification of tentative admission to the program from the Director, he must file an application for admission to San Diego State with the Dean of Admissions, and an application for admission to the Graduate Division with the Dean of Graduate Studies.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this bulletin.

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 bulletin and must have made up any deficiencies in his undergraduate program. The student must also complete as part of his graduate program the following: (1) at least 18 units of 200-numbered courses, including Public Administration 201, 245, and 291 or 197; and Criminal Justice Administration 210 and 216; (2) a minimum of 12 units of upper division or graduate courses in elective courses selected with the approval of the graduate adviser. Public Administration 299. 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 graduate adviser. If Plan B is selected, the student must select areas of concentration with the approval of the Director of the Criminal Justice Administration program.

Public Administration 140 and Criminal Justice Administration 146 are required in addition to the minimum 30 units unless completed as an undergraduate.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching 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.

FACULTY

Director, Public Administration and Urban Studies: J. D. Kitchen, Ph.D.
Director, City Planning Program: J. A. Clapp, Ph.D.
Director, Criminal Justice Administration Program: G. T. Gitchoff, D.Crim.


Assistant Professors: R. L. Boostrom, M.Crim.; J. A. Gazell, Ph.D.; R. A. Hamilton, Ph.D.; M. G. Walshok, M.A.

Lecturer: G. C. Erikson, M.S.
245. Readings in Public Administration (3)
Prerequisite: Public Administration 201, or six graduate units of political science.
Selected readings in the literature of public administration.

249. Seminar in Comparative Administration (3)
Prerequisite: Public Administration 140.
Selected problems in administration, organization, and processes of foreign and international governments. Maximum credit six units applicable on a master's degree.

250. Management of Urban Governments (3)
Selected problems in the management of urban governments. Maximum credit six units applicable on a master's degree.

255. The Metropolitan Area (3)
Prerequisites: Public Administration 143, 148, or 150.
Selected problems in the government and administration of the world's major metropolitan areas.

260. Administration and Public Policy Development (3)
Prerequisite: 12 upper division units in social science.
Social, political, and administrative problems involved in governmental program development and change.

291. Problem Analysis (3)
Analytical treatment of selected problems in Public Administration. Review of methods for investigation and reporting of data. Consideration of problems in preparation of projects or theses.

296. Internship in Public Administration (1-6)
Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences. Admission by consent of instructor.

297. Research in Public Administration (3)
Prerequisite: Consent of Director, Public Administration and Urban Studies.
Research in one of the areas of public administration.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisite: Consent of staff, to be arranged with the Director and instructor.

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

GRADUATE COURSES IN CITY PLANNING

CP 261. Urban Design and Land Use Planning Studio (6)
Two lectures and eight hours of laboratory.
Prerequisites: City Planning 266A and 266B.
Laboratory course concerned with graphic expression, principles of land use planning, land development, and urban design. Project integrating principles.
(Formerly numbered Public Administration 261A-261B.)

CP 262. History of Urban Planning (3)
History or urban development and of the field of urban planning.

CP 265. Seminar in Planning Administration (3)
The administration of the planning function in urban government. Relationships between the planner and public and private agencies, governmental departments and elected officials. Case studies and problems.
RUSSIAN

GENERAL INFORMATION

The Department of German and Russian, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Russian.

The staff in charge of the graduate program in Russian is composed of professors whose native tongue is Russian, or who are familiar with Russia through travel or intensive studies, enabling them to present authoritatively the Russian language and culture. Library facilities include resources in Russian literature and linguistics, consisting of books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin.

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this bulletin, students may be required to pass a qualifying examination in Russian given by the Department of German and Russian.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

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 200-numbered courses, including Russian 299, Thesis. If Plan B is followed, the student must pass a comprehensive examination in lieu of Russian 299.

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.

FACULTY

Chairman, Department of German and Russian: H. W. Paulin, Ph.D.
Graduate Adviser: Vyta Dukas
Credential Adviser: Vyta Dukas
Professors: Vyta Dukas, Ph.D.; L. A. Kozlik, Ph.D.
Associate Professor: L. A. Fetzer, Ph.D.
Assistant Professor: Renate Bialy, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN RUSSIAN

UPPER DIVISION COURSES

103. Old Russian Literature (3)
104. Russian Literature of the 18th Century (3)
105A-105B. The Russian Short Story, Drama, and Poetry of the 19th Century (3-3)
110A-110B. The Russian Novel of the 19th Century (3-3)
111. Russian Literature of the 20th Century (3)
130. Russian Syntax and Stylistics (3)
131. Russian Phonology and Morphology (3)

GRADUATE COURSES

201. History of the Russian Language (3)
Prerequisite: 12 units of upper division Russian.
The historical development of the Russian language.

202A-202B. Old Church Slavic (3-3)
Prerequisite: 12 units of upper division Russian.
Structure of Old Church Slavic with readings and analysis of medieval Slavic texts.

203. Slavic Linguistics (3)
Prerequisite: 12 units of upper division Russian.
Selected topics in historical and comparative Slavic linguistics.

204A-204B. The Soviet Novel and Short Story (3-3)
Prerequisite: 12 units of upper division Russian.
Intensive study of major writers of Soviet prose fiction.

205. Russian Poetry from Pushkin to the Present (3)
Prerequisite: 12 units of upper division Russian.
The major Russian poets of the nineteenth and twentieth centuries.

253. Russian Literary Criticism (3)
Prerequisite: 12 units of upper division Russian.
Literary criticism from the early 18th century to the present.

255. Seminar: A Major Author or Movement (3)
Prerequisite: Russian 290.
A major author or movement. Maximum credit six units applicable to a master's degree.

290. Research and Bibliography (3)
Prerequisite: 12 units of upper division Russian.
Purposes and methods of research in Russian literature and Slavic linguistics.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisite: 18 units of upper division Russian and consent of staff; to be arranged with department chairman and instructor.

299. Thesis (3)
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
SOCIAL SCIENCE

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 bulletin.)

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division. 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 6 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 197, Investigation and Report; and at least 15 upper division units including courses in archaeology, ethnology, physical anthropology, and social anthropology.

Economics: Economics 100A-I00B or 104A-I04B.

Geography: Geography 1 and 2, and 15 units of upper division courses in geography, including three units from each of the following blocks of courses: 100-109, Systematic-Physical Geography; 110 or 111, Theoretical Geography; 119-139, Regional Geography; 150-179, Systematic-Cultural Geography; 180-189, 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 Catalogue.

Sociology: Sociology 1, 10, and 101.

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy which are described in Part Three of this bulletin.

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 bulletin, the student must include in his graduate program a concentration in the social sciences defined as follows:

1. A minimum of 24 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 200-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 fifteen units in one area on the master's degree program including at least nine units of 200-numbered courses in the social sciences.

3. Six units in each of two additional fields of social science, including at least three units of 200-numbered courses in each.

4. Course 299, 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:

   Economics: Economics 205, Geographic Research and Techniques of Presentation (3).

   Political Science: Political Science 200, The Scope and Method of Political Science (3).
SOCIAL WORK

GENERAL INFORMATION

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 Colleges in May, 1963. The curriculum was developed in close cooperation with the Council on Social Work Education and was fully accredited by the Accreditation Commission in June, 1966.

The School of Social Work also offers a program of professional education which commences in the undergraduate curriculum and continues through a four-year period effective in September, 1970, by the Accreditation Commission of the Council on Social Work Education. Only students completing the undergraduate major in social welfare at San Diego State or its equivalent can be considered for this program.

The objectives of the School of Social Work at San Diego State are to equip students with the essential knowledge, philosophy and basic skills for their responsible entry into the profession of social work. In order to achieve these objectives, the School will assist students: to develop a philosophy which recognizes individual human welfare as the purpose and goal of social policy; to acquire attitudes which will permit the development and maintenance of professional relationships and professional standards; to develop the discipline and self-awareness essential to the professional social worker; to attain a level of competence necessary for beginning professional practice; 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.

To meet these objectives, the graduate curriculum in the School of Social Work offers a program of classroom and field instruction which includes course content in the following four major areas:

1. Social Welfare Policy and Services. Social welfare policy and services; their development, organization and operation; the purpose and status of current programs; the influence of social, economic and political factors; the role of the social worker in evaluation and improvement of existing programs with reference to the philosophy of social work; and the assessment of unmet needs and their resolution.

2. Human Behavior and the Social Environment. Normal growth and development of the individual from childhood through old age within the social contexts of the family, group relationships, occupational settings, and community structures; the nature and causes of impaired social and emotional functioning; the nature and changing character of social and cultural structures with attention to the interaction between the individual and his social environment and the reciprocal effects of the interaction.

3. Social Work Practice. Objectives, general theory, basic principles and values and ethics of the profession of social work; the first-year sequence is the same for all students and covers the fundamentals of practice; in the second year, there may be a concentration on intervention with individuals, families, and groups, or intervention with organizations and communities; appropriate attention to the enabling methods of research and administration.

4. Field Instruction. Practice carried on in field settings under educational direction, the objectives of which include: a beginning mastery of professional social work practice; the disciplined use of "self" to give professional service; the integrated use of knowledge, attitudes, and skills in achieving social work goals; broadening and deepening knowledge of the function and application of social work practice in a variety of fields and circumstances; and an understanding of and an involvement with the problems of concern to social work.

5. Research. Research methodology, its processes and decision-making; developing a research proposal, data collection and analysis and writing a report based on individual or group project; course objectives include a beginning mastery of research on social work issues or social problems and familiarity with systematic approaches to the study and analysis of practice.

APPLICATION FOR ADMISSION

In seeking tentative admission to the program leading to the Master of Social Work degree or the Master of Science in Social Work degree, the student should write directly to the Dean of the School of Social Work 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 of the School of Social Work not later than March 31.

After the student has received notification of eligibility to the School of Social Work from the Dean of the School of Social Work, he must file an application for admission to San Diego State with the Dean of Admissions and an application for admission to the Graduate Division with the Dean of Graduate Studies as indicated below.

ADMISSION TO THE COLLEGE AND THE GRADUATE DIVISION

A student seeking admission to the curriculum leading to the Master of Social Work or the Master of Science in Social Work degree must:

1. Be admitted to San Diego State as an unclassified graduate student by the Office of Admissions of the College. (See procedures listed in Part Three of this bulletin on Admission of Graduate Students.)

2. Be admitted to the Graduate Division of San Diego State and to the School of Social Work. Requirements for admission to the Graduate Division (which include the completion of the Graduate Record Examination Aptitude Test and the filing of an official program) are stated in Part Three of this bulletin on admission of Graduate Students to the Graduate Division. Requirements for admission to the School of Social Work are listed below.

SPECIFIC REQUIREMENTS FOR ADMISSION TO THE SCHOOL OF SOCIAL WORK

In addition to satisfying the requirements for admission to the Graduate Division of San Diego State, 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 socio-humanistic 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 a personality judged suitable for the profession.

5. Arrange for a personal 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. Knowledge of the function and application of social work practice in a variety of fields and circumstances, and an understanding of and an involvement with the problems of concern to social work.

1. Have earned a 3.0 (B) grade point average on all courses required in the first year of his program.

2. Be recommended by the faculty of the School of Social Work.

3. Be approved for advancement by the Graduate Council of the Graduate Division.
### 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 twenty-four must be completed in residence at San Diego State.
   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. 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 fifty-six (56) units required for the MSW degree, those units designated as Seminar 291 may be fulfilled, with permission of the Dean of the School of Social Work, by substituting relevant 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 are not acceptable and all work for the degree must be completed within seven years of the date when all requirements for the degree are completed. In special circumstances, students may be permitted to validate credits earned outside this time limits by passing satisfactorily comprehensive examinations on the outdated course or courses.

3. A maximum of 9 units of combined credit in courses 297A-297B and 298 may be included on a student's official program for the Master of Social Work degree.

4. All candidates for the degree must pass satisfactorily a comprehensive examination in lieu of a thesis under the provisions of Plan B as described elsewhere in this bulletin.

5. 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 bulletin.

6. Second year electives must include at least one course from each of Type A and Type B courses.

### COURSE REQUIREMENTS

The program of study normally required for all beginning first-year graduate students in the Master of Social Work degree program is as follows:

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Semester</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Total units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Work Practice (includes Field)</td>
<td>SW236 (4)</td>
<td>SW237 (4)</td>
<td>SW238 (8)</td>
<td>(14-16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>SW297A (3)</td>
<td>SW297B (3)</td>
<td>3-6 units*</td>
<td>(10-12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total units</td>
<td>(12-13)</td>
<td>(12-13)</td>
<td>(6-8)</td>
<td>(20-34)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* To be chosen on individual student basis, but must include courses from both Type A and Type B groupings.

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### SPECIFIC REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE

1. A minimum of thirty units of graduate work within the curriculum of the School of Social Work are required for the degree. Of these units:
   a. At least twenty-four must be completed in residence at San Diego State.
   b. Of the minimum thirty (30) units required for the Master of Science degree, those units designated by the course Social Work 291, Seminar, may be fulfilled, with permission of the Dean of the School of Social Work, by substituting relevant 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 are not acceptable and all work for the degree must be completed within seven years of the date when all requirements for the degree are completed. In special circumstances, students may be permitted to validate credits earned outside these time limits by passing satisfactorily comprehensive examinations on the outdated course or courses.

3. A maximum of 6 units of combined credit in courses 297A-297B and 298 may be included on a student's official program for the Master of Science in Social Work degree.

4. All candidates for the degree must pass satisfactorily a comprehensive examination in lieu of a thesis under the provisions of Plan B as described elsewhere in this bulletin.

5. 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 bulletin.

6. Electives must include at least one course from each of Type A and Type B courses.

7. Student may use all M.S.W. course listings in making up program of study.

The completion of the Master of Science in Social Work degree normally requires two full semesters' work followed by the completion of 8 units during the Summer Session.

### COURSE REQUIREMENTS

The program of study normally required for all students in the Master of Science in Social Work degree program is as follows:

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Semester</th>
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<th>II</th>
<th>Summer (12 weeks)</th>
<th>Total units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Work Practice (includes Field)</td>
<td>SW236 (4)</td>
<td>SW237 (4)</td>
<td>SW238 (6-8)</td>
<td>(14-16)</td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>SW297A (3)</td>
<td>SW297B (3)</td>
<td>3-6 units*</td>
<td>(10-12)</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total units</td>
<td>(12-13)</td>
<td>(12-13)</td>
<td>(6-8)</td>
<td>(20-34)</td>
<td></td>
</tr>
</tbody>
</table>

* To be chosen on individual student basis, but must include courses from both Type A and Type B course groupings.
ADDITIONAL INFORMATION

WITHDRAWALS

Students in the School of Social Work are governed by the general regulations of San Diego State and the Graduate Division. For regulations governing withdrawals from courses, unofficial withdrawals, and probation and disqualification from San Diego State, see the section entitled "Regulations of the Graduate Division" in Part Three of this bulletin.

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. The standing of students so withdrawn will change from classified to unclassified.

PROBATIONARY ADMISSION

Students admitted to San Diego State with unclassified graduate standing and 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 probationary unclassified standing. At the end of the first semester's work, the faculty of the School of Social Work shall recommend to the Dean of Graduate Studies that the student:

1. Be disqualified from further participation in the curriculum, or
2. Be continued in probationary unclassified 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 consideration for waivers of non-resident tuition fees and the other forms of financial assistance as described in Part Three of this bulletin.

The School of Social Work has a substantial number of 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 COLLEGE 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.

FACULTY

Dean, School of Social Work: Kurt Reichert, Ph.D.
Associate Dean, School of Social Work: J. B. Kelley, D.S.W.

Professors: Gideon Horowitz, Ph.D.; J. B. Kelley, D.S.W.; W. F. Lee, D.S.W.;
Jean M. Maxwell, M.S.S.; Ruth H. Morgan, D.S.W.; Robert Onton, D.S.W.;
D. M. Pilcher, M.S.W.; Kurt Reichert, Ph.D.; Jack Stumpf, Ph.D.; L. B. Tebor, Ph.D.; P. E. Weinberger, D.S.W.

Associate Professors: E. F. Anderson, M.S.W.; Grace Andresen, M.S.W.; R. W. Griffin, Ph.D.; G. O. Haworth, D.S.W.; Joanne Haworth, M.S.W.; W. H. Ishikawa, D.S.W.; Marion J. Kainth, M.S.; R. W. Kessel, D.S.W.; Ann H. Pilcher, M.S.W.

Assistant Professors: J. A. Ajemian, Ph.D.; M. Anderson, M.S.W.; Kamila Bally, M.S.W.; Virginia L. Clary, M.S.W.; L. M. Cohen, M.S.W.; William Fletcher, M.S.W.; Martha Fort, M.S.W.; Winona Gilbert, M.S.W.; Rosalind Guindry, Ph.D.; Elsie Herman, M.A.; E. D. Holland, Ph.D.; P. H. Raymer, M.A.; Maria A. Sardinas, M.S.W.; Jane M. Totman, D.S.W.; Catherine M. Watson, M.S.W.; Elizabeth V. Watson, M.S.; L. A. Weissman, M.A.

Lecturers: Inez Aikens, M.M.; Joseph Andriola, Ph.D.; Ruby L. Hubert, M.S.W.; R. W. Peer, M.S.W.; Yvonne Seargeant, M.S.W.; Maria E. Zuniga, M.S.W.

Appointments Under Grants from Outside Funds:

Lecturers: J. L. Brewster, M.S.W.; C. E. Hudson, M.S.W.; Ruth M. Kukkonen, M.S.W.; S. P. Manos, M.S.W.; M. L. Murphy, M.A.; Mark Schreinin, M.S.W.; Barbara E. Shenker, M.S.S.; C. J. Smith, M.S.W.; P. S. Troske, M.S.W.

REQUIRED COURSES IN M.S.W. OR M.S.S.W. PROGRAMS

Social Work 200, 201, 220, 221, 230, 231, 236, 237, 238, 250, 251, 252 or 253, 256, 290A, 290B, 297A, 297B

Electives:

Type A—Social Work Roles
Social Work 205, 222, 233, 234, 235, Selected sections of 291 and 298

Type B—Substantive Content Areas
Social Work 202, 203, 222, 270, 291, 298

GRADUATE COURSES

Prerequisite for enrollment in all graduate courses: admission to the School of Social Work.

200. Social Welfare Policy and Services I (3)
Social welfare as a societal institution; philosophical, historical, and comparative analysis of the welfare functions, issues, and problems, with special focus on personal and social deprivation.

201. Social Welfare Policy and Services II (3)
Prerequisite: Social Work 200
Conceptual analysis of social welfare programs related to income maintenance and other social service areas, including social insurance, child welfare, and community development.

202. Social Welfare Policy and Services III (3)
Prerequisite: Social Work 201
Problems and issues in emerging social welfare programs, including analysis of the structure of social services and of social work as a profession.

203. Social Welfare Policy and Services IV (3)
Prerequisite: Social Work 201
Analysis of existing or projected social welfare programs or service.

205. Social Work Administration I (3)
Prerequisite: Social Work 201
Administration as an aspect of all social work practice. Nature of social work administration involving board and staff participation in determining goals and in administration; organization and management operations to achieve goals; administrative planning, programming, and management operations to achieve goals; Administrative organization; interagency policy and control, management processes.
220. Human Behavior and Social Environment I (3)
Theoretical perspectives on man in the changing world. View based on biological, psychological, interpersonal, and social structure assumptions over the life-cycle, for application to social work practice.

221. Human Behavior and Social Environment II (3)
Prerequisite: Social Work 220. Examination of deviant behavior from relative frameworks of a medical model and a career process model. Selected social problem areas are used as illustrations.

222. Human Behavior and Social Environment III (3)
Prerequisite: Social Work 221. Theories of natural and induced change in human behavior which have utility for social work practice.

230. Social Work Practice I (2)
Prerequisite: Concurrent registration in Social Work 250. Principles of social work practice with individuals, families, groups, and communities. Attention is given to social work objectives, principles and skills.

231. Social Work Practice II (2)
Prerequisites: Social Work 210 and concurrent registration in Social Work 251. Principles of social work practice with individuals, families, groups, and communities with emphasis on refinement of skills of social study and social problem analysis. Attention to interactional and small group processes in determination of goals and change.

232. Social Work Practice III (3)
Prerequisites: Social Work 211 and concurrent requirement in field work. Social work intervention with families and groups toward personal, social, organizational, and institutional change and problem solving. Emphasis on social, ethnic, and economic interaction contexts.

233. Social Work Practice IV (3)
Prerequisites: Social Work 212 and concurrent requirement in field work. Designed to offer opportunity for integration and application of the student's knowledge of an array of approaches to practice. Specific content relevant to selected models of social problems experienced by individuals, families, and groups in interaction with their social environment.

234. Social Work Practice V (3)
Prerequisites: Social Work 213 and concurrent requirement in field work. Applications of major theories of social change to improve the social environment and ameliorate social problems of individuals, families and groups. Model problems in social welfare planning, mobilization of resources, analysis of issues and resistances, designing programs and structures; and reassessment.

235. Social Work Practice VI (3)
Prerequisites: Social Work 214 and concurrent requirement in field work. Exploration of collaborative social work roles with other professional roles in planned change. Differential applications of values, strategies and power in social welfare and host settings, by and on behalf of various population groupings.

236. Social Work Practice VII (4)
Laboratory field instruction enabling the student to integrate social work theory, knowledge and concepts in developing interventive skills with individuals, families, groups, organizations and communities.

237. Social Work Practice VIII (4)
Prerequisite: Social Work 236. Continuation of Social Work Practice VII with emphasis on refinements of skills in intervention with individuals, families, groups, organizations and communities.

238. Social Work Practice IX (6-8)
Prerequisite: Social Work 237. Emphasis on the further development of skills with individuals, families, groups, and communities. Enrollment limited to students admitted to organizations, and communities. M.S.S.W. program.

250. Field Instruction I (4)
Prerequisite: Concurrent registration in Social Work 230. Field instruction in a public or voluntary social work setting. Experiences are drawn upon in relation to classroom learning to emphasize application of social work objectives, principles and skills to services to individuals, families, groups, and communities.

251. Field Instruction II (4)
Prerequisite: Social Work 230 and concurrent registration in Social Work 231. Continuation of field instruction initiated in Social Work 230. Opportunities are provided for the application of social study and social problem analysis to experiences with interactional and small group processes.

252. Field Instruction III: Individuals, Families and Groups (4.5)
Prerequisites: Social Work 231 and concurrent registration in Social Work 232. Field instruction in a social work setting providing a concentration on social work practice aimed at achieving change in or on behalf of individuals, families, and groups. Practice under educational direction at an advanced level.

253. Field Instruction IV: Individuals, Families and Groups (4.5)
Prerequisites: Social Work 232 and concurrent registration in Social Work 233. Continuation of Field Instruction III at an advanced level. Emphasis is placed on the use of diverse problem-solving strategies and resources in social work.

255. Field Instruction V: Organizations and Communities (4.5)
Prerequisites: Social Work 234 and concurrent registration in Social Work 234. Field instruction in a social work setting providing a concentration on social work practice aimed at achieving changes in social policies, organizations, and communities. Practice under educational direction at an advanced level.

256. Field Instruction VI: Organizations and Communities (4.5)
Prerequisites: Social Work 235 and concurrent registration in Social Work 235. Continuation of Field Instruction V at an advanced level. Emphasis is placed on the use of diverse social work strategies and resources in social planning or community development.

270. Seminar. Social Work Analysis (1-4)
Discussion of student experience in field instruction and its broader implications. Maximum credit four units applicable on a master's degree.

290A-290B. Social Work Research Methods and Analysis (2-2)
Definition and purpose of research in social work: Techniques and methods used in collecting, organizing, and interpreting social welfare and related data; steps involved in planning a research project and selecting a research design.

291. Seminar (2-3)
Selected topics in social work and/or social welfare. Topics to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

297A-297B. Research (3-3)
Prerequisite: Social Work 290. Research in the field of social work and completion of a research project. Individual or group project.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with Dean and instructor. Individual study. Six units maximum credit.
SOCIOLOGY

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 bulletin 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 THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Sociology must have completed 18 upper division units in sociology including Sociology 101, Modern Social Theory, Sociology 140, Social-Psychological Foundations of Society, and one course from each of the following fields: (1) Social Disorganization; (2) Social Institutions or Social Organization; and (3) Urban Sociology-Demography.

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy as described in Part Three of this bulletin. Students majoring in sociology must also have completed Sociology 164, Methods of Social Research, either at the undergraduate or graduate level.

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 bulletin, the student must include in his graduate program a minimum of 24 units from courses in sociology listed below as acceptable on master's degree programs, of which at least 15 units must be in 200-numbered courses including Sociology 299. Thesis. A final comprehensive examination also required.

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching 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.

FACULTY

Chairman, Department of Sociology: T. L. Gillette, Ph.D.
Graduate Adviser: A. J. Daniels
Associate Professors: Shelly E. Chandler, Ph.D.; Joann S. DeLora, Ph.D.; M. M. El-Assal, Ph.D.; R. H. K. Schulze, Ph.D.

COURSES ACCEPTABLE ON MASTER’S DEGREE PROGRAMS IN SOCIOLOGY

UPPER DIVISION COURSES

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<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>History of Social Thought</td>
<td>3</td>
</tr>
<tr>
<td>103</td>
<td>Contemporary Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>110</td>
<td>Social Disorganization</td>
<td>3</td>
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<tr>
<td>111</td>
<td>Current Social Issues</td>
<td>3</td>
</tr>
<tr>
<td>112</td>
<td>Sociology of Conflict</td>
<td>3</td>
</tr>
<tr>
<td>113</td>
<td>Criminology and Penology</td>
<td>3</td>
</tr>
<tr>
<td>114</td>
<td>Juvenile Delinquency</td>
<td>3</td>
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<tr>
<td>120</td>
<td>Industrial Sociology</td>
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<tr>
<td>121</td>
<td>Sociology of Occupations and Professions</td>
<td>3</td>
</tr>
<tr>
<td>123</td>
<td>Sociology of Mental Illness</td>
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<td>124</td>
<td>Social Stratification</td>
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</tr>
<tr>
<td>125</td>
<td>Minority Group Relations</td>
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<td>126</td>
<td>Medical Sociology</td>
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<tr>
<td>132</td>
<td>Formal Organization</td>
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<tr>
<td>136</td>
<td>Sociology of the Family</td>
<td>3</td>
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<tr>
<td>137</td>
<td>Political Sociology</td>
<td>3</td>
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<tr>
<td>138</td>
<td>Sociology of Religion</td>
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<td>Sociology of Education</td>
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<td>140</td>
<td>Sociology of Mass Communication</td>
<td>3</td>
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<td>146</td>
<td>Collective Behavior</td>
<td>3</td>
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<td>147</td>
<td>Sociology of Social Movements</td>
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<td>148</td>
<td>Small Groups</td>
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<td>Population Problems</td>
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<td>151</td>
<td>Research Methods in Demography</td>
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<td>157</td>
<td>Urban Sociology</td>
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<td>160</td>
<td>Quantitative Methods in Social Research</td>
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<td>164</td>
<td>Methods of Social Research</td>
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<tr>
<td>197</td>
<td>Investigation and Report</td>
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GRADUATE COURSES

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<th>Course Number</th>
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<th>Credits</th>
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<td>200</td>
<td>Seminar in Social Theory</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 101 and 164. Classics of sociology, American sociological theory, theory construction, application of theory to research, theoretical models, sociology of knowledge, special topics. See class schedule for specific content. Maximum credit six units applicable to a master's degree.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>205</td>
<td>Directed Readings in Social Theory</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 101 and 164. Selected readings providing comprehensive coverage of the field of social theory.</td>
<td></td>
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<tr>
<td>210</td>
<td>Seminar in Social Disorganization</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 110 and 164. Theories of social disorganization, anomie and alienation, deviance, crime, delinquency, personal pathology, institutional malfunction, social conflict, disaster, special topics. See class schedule for specific content. Maximum credit six units applicable to a master's degree.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>Directed Readings in Social Disorganization</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 110 and 164. Selected readings providing comprehensive coverage of the field of social disorganization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>220</td>
<td>Seminar in Social Organization</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 122 and 164. Social organization, formal organization, organizational change, authority and leadership, special topics. See class schedule for specific content. Maximum credit six units applicable to a master's degree.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>225</td>
<td>Directed Readings in Social Organization</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 122 and 164. Selected readings providing comprehensive coverage of the field of social organization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>Seminar in Social Institutions</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 122 and 164. The family and kinship, political organization, economic organization, religion, education, industry, occupations and professions, social stratification, special topics. See class schedule for specific content. Maximum credit six units applicable to a master's degree.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>235</td>
<td>Directed Readings in Social Institutions</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: Sociology 122 and 164. Selected readings providing comprehensive coverage of the field of social institutions.</td>
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</tr>
</tbody>
</table>
240. Seminar in Social Psychology: Sociological Approaches (3)
Prerequisites: Sociology 140 and 164.
Socialization, role theory, motivation, perception, self, social context of personality, attitude theory, interaction, language and symbolic process, social types, collective behavior, small groups, special topics. See class schedule for specific content. Maximum credit six units applicable to a master's degree.

245. Directed Readings in Social Psychology: Sociological Approaches (3)
Prerequisites: Sociology 140 and 164.
Selected readings providing comprehensive coverage of the field of social psychology.

250. Seminar in the Community (3)
Prerequisites: Sociology 157 and 164.
Ecological structure and process; community institutions and structure; community deterioration, planning and renewal; urbanization; suburbia; megalopolis; special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

255. Directed Readings in the Community (3)
Prerequisites: Sociology 157 and 164.
Selected readings providing comprehensive coverage of the sociological study of human communities.

260. Seminar in Research Methods (3)
Prerequisites: Sociology 101 and 164.
Analysis of methods used in current sociological research, including evaluation of reported findings. Discussion of research designs appropriate to particular types of projects. Evaluation of research in progress by members of the seminar. May be repeated with new content for additional credit. Six units maximum credit applicable on a master's degree.

265. Directed Readings in Research Methods (3)
Prerequisite: Sociology 164.
Selected readings providing comprehensive coverage of sociological research methods.

270. Seminar in Population and Demography (3)
Prerequisites: Sociology 164 and 150 or 151.
Demographic theories, fertility, mortality, migration, construction and application of demographic indices, demographic prediction, world population trends, special topics. See class schedule for specific content. Maximum credit six units applicable on a master's degree.

275. Directed Readings in Population and Demography (3)
Prerequisites: Sociology 164 and 150 or 151.
Selected readings providing comprehensive coverage of population and demography.

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

297. Research (3)
Prerequisite: Sociology 164.
Independent investigation of special topics.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
<table>
<thead>
<tr>
<th>COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPANISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPPER DIVISION COURSES</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Spanish</th>
<th>Portuguese</th>
</tr>
</thead>
<tbody>
<tr>
<td>104A-104B. Spanish-American Literature (3)</td>
<td>134. Portuguese Literature (3)</td>
</tr>
<tr>
<td>105A-105B. Modern Spanish Drama (3-3)</td>
<td>155. Brazilian Literature (1)</td>
</tr>
<tr>
<td>106A-106B. Mexican Literature (3-3)</td>
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<tr>
<td>107. Caribbean Area Countries Literature (3)</td>
<td></td>
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<tr>
<td>108. Andean Countries Literature (3)</td>
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<tr>
<td>109. River Plate Literature (3)</td>
<td></td>
</tr>
<tr>
<td>110. Nineteenth-Century Spanish Novel and Short Story (3)</td>
<td>111. Twentieth-Century Spanish Novel and Short Story (3)</td>
</tr>
<tr>
<td>112. Contemporary Spanish Novel (3)</td>
<td>113. Spanish-American Theatre (3)</td>
</tr>
<tr>
<td>130. Poetry of the Spanish Golden Age (3)</td>
<td>114. Spanish-American Essay (3)</td>
</tr>
<tr>
<td>131. Prose of the Spanish Golden Age (3)</td>
<td>115. Modern Spanish Poetry (3)</td>
</tr>
<tr>
<td>132. Drama of the Spanish Golden Age (3)</td>
<td></td>
</tr>
<tr>
<td>149. Spanish Linguistics (3)</td>
<td></td>
</tr>
<tr>
<td>150. Phonetics and Phonemics (3)</td>
<td></td>
</tr>
<tr>
<td>151. Spanish-American Poetry (3)</td>
<td></td>
</tr>
<tr>
<td>170. Spanish-American Short Story (3)</td>
<td></td>
</tr>
<tr>
<td>171. Spanish-American Theatre (3)</td>
<td></td>
</tr>
<tr>
<td>180. Modern Spanish Poetry (3)</td>
<td></td>
</tr>
<tr>
<td>204. The Spanish-American Novel (3)</td>
<td></td>
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<tr>
<td>205. The Gaucho Epic (3)</td>
<td></td>
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<tr>
<td>206. Modernism (3)</td>
<td></td>
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<tr>
<td>207. Medieval Spanish Literature (3)</td>
<td></td>
</tr>
<tr>
<td>208. The Modern Spanish Essay (3)</td>
<td></td>
</tr>
<tr>
<td>209. The Spanish-American Essay (3)</td>
<td></td>
</tr>
<tr>
<td>220. Seminar in Spanish Golden Age Literature (3)</td>
<td>A representative author, a genre or movement of the Spanish Golden Age. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>230. Seminar in 19th Century Spanish Literature (3)</td>
<td>A representative author, a genre or movement of the 19th century in Spain. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>240. Seminar in 20th Century Spanish Literature (3)</td>
<td>A representative author, a genre or movement of the 20th century in Spain. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>250. Seminar in Spanish-American Literature (3)</td>
<td>A genre or movement of Spanish America. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>255. Seminar in Spanish-American Culture and Thought (3)</td>
<td>Works of representative authors of Spanish America. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>260. Seminar in Medieval Spanish Literature (3)</td>
<td>A representative author of the medieval period. Maximum credit six units applicable on a master's degree.</td>
</tr>
<tr>
<td>270. Applied Spanish Linguistics for Teachers (3)</td>
<td>The application of linguistic theory to the teaching of Spanish at the secondary and college levels.</td>
</tr>
<tr>
<td>290. Research and Bibliography (3)</td>
<td></td>
</tr>
<tr>
<td>291. Comprehensive Reading and Survey Course (3)</td>
<td>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 investigations. Recommended for the first semester of graduate work.</td>
</tr>
<tr>
<td>292. Special Study (1-3)</td>
<td></td>
</tr>
<tr>
<td>293. Thesis (3)</td>
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</tbody>
</table>

GRADUATE COURSES

All graduate courses in the Department of Spanish and Portuguese have a prerequisite of 12 units of upper division courses in Spanish, or consent of instructor.

201. History of the Spanish Language (3)  
Prerequisite: Credit or concurrent enrollment in Spanish 149 or 150.  
The development of the Spanish language in Spain and Spanish America, with particular attention to the phonology, morphology, and syntax of medieval Spanish.

202. Cervantes (3)  
The principal prose works of Cervantes: The Novelas ejemplares and Don Quixote.

203. Lope de Vega and Calderon (3)  
The works of Lope de Vega and Calderon.

204. The Spanish-American Novel (3)  
The Spanish-American novel to 1935.

205. The Gaucho Epic (3)  
The Poesia gauchesca, with particular emphasis on Martin Fierro, Fausto, and Santos Vega. (Formerly entitled: Spanish-American Poetry.)

206. Modernism (3)  
The Modernista movement in Spanish America, with special attention to representative poets.

207. Medieval Spanish Literature (3)  
Prerequisite: Spanish 201.  
The literature of Spain from the earliest extant works to the Celestina.

208. The Modern Spanish Essay (3)  
The thinkers, essayists, and philosophers of Spain from the generation of 1898 to the present.

209. The Spanish-American Essay (3)  
Principal Spanish-American essayists of the 19th and 20th centuries.
## SPEECH COMMUNICATION

### 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, communication, and interpretation.

### ADMISSION TO THE GRADUATE DIVISION

In addition to the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin, the student will be required to complete the departmental diagnostic examination during his first semester of graduate enrollment in the department.

### ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Speech Communication are required to have attained classified graduate standing and to have completed Speech Communication 200.

### 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 bulletin, the student must complete a graduate program which includes at least 24 units from courses listed below as acceptable on master's degree programs in speech of which at least 18 units must be in 200-numbered courses. Speech Communication 200, Research and Bibliography, and Speech Communication 198, Thesis, are required courses.

### 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.

### FACULTY

Chairman, Department of Speech Communication: Jack Mills, Ph.D.
Graduate Adviser: F. C. Sanders
Professors: W. J. Adams, Ph.D.; R. L. Benjamin, Ph.D.; Jack Mills, Ph.D.; L. A. Sanders, Ph.D.
Assistant Professors: R. M. Babich, Ph.D.; D. M. Hunsaker, J.D.; S. W. King, Ph.D.; F. C. Sanders, M.A.; C. R. Smith, Ph.D.

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPEECH COMMUNICATION

#### UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>108. Advanced Interpretation (3)</td>
<td></td>
</tr>
<tr>
<td>130. Semantics (3)</td>
<td></td>
</tr>
<tr>
<td>135. Theories of Human Communication (3)</td>
<td></td>
</tr>
<tr>
<td>152. Rhetorical Theory and Criticism (3)</td>
<td></td>
</tr>
<tr>
<td>154. Contemporary Rhetorical Theory and Criticism (3)</td>
<td></td>
</tr>
<tr>
<td>162. Advanced Argumentation (3)</td>
<td></td>
</tr>
</tbody>
</table>

#### LOWER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>190. Ethics of Speech Communication (3)</td>
<td></td>
</tr>
<tr>
<td>191. Group Communication (3)</td>
<td></td>
</tr>
<tr>
<td>192A. Advanced Public Speaking (3)</td>
<td></td>
</tr>
<tr>
<td>192B. Oral Persuasion (3)</td>
<td></td>
</tr>
<tr>
<td>193. Mass Persuasion (3)</td>
<td></td>
</tr>
<tr>
<td>194. History of Public Address (3)</td>
<td></td>
</tr>
<tr>
<td>198. Selected Topics in Speech Communication (3)</td>
<td></td>
</tr>
</tbody>
</table>

*Not more than three units of Speech Communication 198 are acceptable on master's degree programs in Speech Communication.*

### GRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>200. Research and Bibliography (3)</td>
<td></td>
</tr>
<tr>
<td>205. Seminar in Oral Interpretation (3)</td>
<td></td>
</tr>
<tr>
<td>210. Seminar in Rhetorical Theory (3)</td>
<td></td>
</tr>
<tr>
<td>215. Seminar in Rhetorical Criticism (3)</td>
<td></td>
</tr>
<tr>
<td>220. Seminar in the Analysis of Language (3)</td>
<td></td>
</tr>
<tr>
<td>225. Seminar in Communication Theory (3)</td>
<td></td>
</tr>
<tr>
<td>230. Seminar in Contemporary Rhetorical Theory (3)</td>
<td></td>
</tr>
<tr>
<td>235. Seminar in Group Discussion Theory (3)</td>
<td></td>
</tr>
<tr>
<td>240. Experimental Procedures in Speech Communication (3)</td>
<td></td>
</tr>
</tbody>
</table>

*Formerly numbered Speech Arts 235.*

### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

All students must meet the general requirements for advancement to candidacy. Special attention given to the application of theory to public address. Special emphasis placed on the rhetorical means used to solve major crises in American history.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>230. Seminar in Contemporary Rhetorical Theory (3)</td>
<td></td>
</tr>
<tr>
<td>235. Seminar in Communication Theory (3)</td>
<td></td>
</tr>
<tr>
<td>239. Seminar in Group Discussion Theory (3)</td>
<td></td>
</tr>
<tr>
<td>240. Experimental Procedures in Speech Communication (3)</td>
<td></td>
</tr>
</tbody>
</table>

*Formerly numbered Speech Arts 235.*

### ADDITIONAL INFORMATION

- Prerequisite: Speech Communication 108.
- Prerequisite: Speech Communication 200.
- Prerequisite: Speech Communication 198.
- Prerequisite: Credit of core course numbered Speech Communication 297.
- Prerequisite: Speech Communication 198 and 192A or 192B. (Formerly numbered Speech Arts 297.)
- Prerequisite: Credit or concurrent registration in Speech Communication 200.
- Prerequisite: Credit or concurrent registration in Speech Communication 200.
- Prerequisite: Credit or concurrent registration in Speech Communication 200.
- Prerequisite: Credit or concurrent registration in Speech Communication 200.
- Prerequisite: Credit or concurrent registration in Speech Communication 200.
- Prerequisite: Credit or concurrent registration in Speech Communication 200.
293. Seminar: Greek and Roman Public Address (3)
   Prerequisites: Speech Communication 190 and 192A or 192B. (Formerly numbered Speech Arts 293.)

294. Seminar: 18th Century British Public Address (3)
   Prerequisites: Speech Communication 190 and 192A or 192B. (Formerly numbered Speech Arts 294.)

298. Special Study (1-3)
   Individual Study. Six units maximum credit.
   Prerequisite: Consent of staff; to be arranged with department chairman and instructor.

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

SPEECH PATHOLOGY AND AUDIOLOGY

GENERAL INFORMATION

The Department of Speech Pathology and Audiology, in the College of Professional Studies, offers graduate study leading to the Master of Arts degree in Speech Pathology and Audiology, to the Restricted Credential Authorizing Service as a Speech and Hearing Specialist (Plan I), and to the Standard Credential to teach the Deaf. The department offers advanced study in speech and hearing science, speech pathology and audiology. The programs utilize the facilities of the Speech and Hearing Clinic in the Clinical Training Center in the Education Building, offering observation and diagnostic and therapeutic experience with outpatient children and adults. Field experience is offered in the public schools and the San Diego Speech and Hearing Center, Children's Hospital. Additional opportunities for practicum and observation experiences include the United Cerebral Palsy Center, the Home of Guiding Hands (mental retardation), Anderson and Lafayette schools (deaf and severely hard of hearing), the Head Start programs (disadvantaged), Rolando School (congenital aphasia), the University of California Medical School Hospital, and the U.S. Naval Hospital, Balboa Park.

ADMISSION TO THE GRADUATE DIVISION

All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin under Admission to the Graduate Division.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Speech Pathology and Audiology are required to have attained classified graduate standing and to have completed Speech Pathology and Audiology 200.

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 bulletin, the student must complete a graduate program which includes at least 24 units from courses listed below as acceptable on master's degree programs in speech arts of which at least 15 units must be in 200-numbered courses. Speech Pathology 200, Research and Bibliography, and Speech Pathology 299, Thesis, are required courses for the student electing Plan A. If Plan B is elected the student must complete a research project as approved by the department, complete 2 units of Speech Pathology and Audiology 207, Research, and pass a comprehensive examination (which may be repeated only once) in lieu of the thesis.

FACULTY

Chairman, Department of Speech Pathology and Audiology: Sue W. Earnest, Ph.D.
Graduate Adviser: A. C. Nichols
Credential Adviser: Speech and Hearing Specialist, Plan II: Sue W. Earnest
Credential Adviser: Deaf: Harriet G. Kopp
Professors: Sue W. Earnest, Ph.D.; Harriet G. Kopp, Ph.D.; A. C. Nichols, Ph.D.; R. M. Riedman, Ph.D.
Associate Professor: E. L. Thile, Ph.D.
Assistant Professors: Elizabeth J. Allen, M.A.; K. D. Dimnick, Ph.D.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPEECH PATHOLOGY AND AUDIOLOGY

UPPER DIVISION COURSES

127. Diagnostic Methods in Speech Pathology (3) 132. Assessment of Language Disorders (3)
128. Diagnostic Practicum in Speech Pathology (3) 143. Hearing Amplification (1)
130. Family Communication 150. Education of Deaf Children (3)
151. Speech Reading and Auditory Training (1)
131. Language Structure (3) 198. Selected Topics in Speech Pathology and Audiology (1-3) #

# Not more than three units of Speech Pathology and Audiology 198 are acceptable on master's degree programs in Speech Pathology and Audiology.

GRADUATE COURSES

200. Research and Bibliography (3) Bibliographical techniques in methods and exposition of research in the fields of Speech Pathology and Audiology. Recommended for the first semester of graduate work, and prerequisite to advancement to candidacy.

201. Voice Science (3) Prerequisite: Speech Pathology and Audiology 120. Relationship of basic principles of sound to the speech mechanism. Analysis of speech sound production. Application of mechanical and electronic equipment to speech. (Formerly numbered Speech Arts 276.)

202. Problems of Aphasia (3) Prerequisites: Speech Pathology and Audiology 121 and 123. Evaluation of aphasia, familiarity with diagnostic tools, theories of aphasia, and therapy for persons with disorders of symbolization (adult and congenital aphasia). The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 271.)

203. Problems of Cerebral Palsy (3) Prerequisites: Speech Pathology and Audiology 123 and 124. Evaluation, theories of treatment and therapy for persons with speech disorders in cerebral palsy. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 272.)

204. Problems of Cleft Palate (3) Prerequisites: Speech Pathology and Audiology 123 and 124. Evaluation and therapy for persons with cleft palate speech problems. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 273.)

205. Problems of Stuttering (3) Prerequisite: Speech Pathology and Audiology 122. Differential diagnosis of stuttering, theories of stuttering, individual and group therapy for children and adults with stuttering problems. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course. (Formerly numbered Speech Arts 275.)

206. Problems of Voice Pathology (3) Prerequisites: Speech Pathology and Audiology 123 and 124. Structural medical and functional voice problems. Differential diagnosis of vocal anomalies, theories and therapy for vocal problems. The student is required to take one unit of Speech Pathology and Audiology 226 concurrently with this course.

226. Advanced Clinical Practice in Speech Pathology (1 or 2) Prerequisite: Speech Pathology and Audiology 124. Supervised work with representative advanced speech cases such as stuttering, aphasia, laryngectomies, etc. Maximum credit four units. Maximum credit four units of 226, 245, and/or 246 applicable on a master's degree.
TELECOMMUNICATIONS AND FILM

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 public television producing and directing, telecommunications management, instructional telecommunications, and film production and direction. In addition, the department participates in the Master of Science degree in Mass Communications (see separate listing). Facilities now in use include a two-studio television production center, a five-control room, a three-studio radio complex, 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 closed-circuit instructional television production and origination facility. The entire operation provides telecommunications and film experience for all students in the curriculum.

ADMISSION TO THE GRADUATE DIVISION

In addition to the general requirements for admission to the Graduate Division with classified graduate standing, as described in Part Three of this bulletin, 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 first Saturday following the beginning of classes.

ADVANCEMENT TO CANDIDACY

All students must meet the general requirements for advancement to candidacy, which are described in Part Three of this bulletin. In addition, students seeking the Master of Arts degree in Radio and Television are required to have attained classified graduate standing and to have completed Telecommunications and Film 200.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN RADIO AND TELEVISION

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 bulletin, the student must complete a graduate program which includes at least 24 units from courses listed below as acceptable on master's degree programs in radio and television of which at least 15 units must be in 200-numbered courses. Telecommunications and Film 200, Research and Bibliography, and Telecommunications and Film 299, Thesis, are required courses.

ASSISTANTSHIPS

Graduate teaching 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.

FACULTY

Chairman, Department of Telecommunications and Film: R. E. Lee, M.A.
Graduate Adviser: J. S. Johnson
Professors: K. K. Jones, M.A.; R. E. Lee, M.A.
Assistant Professors: Elizabeth Johnson, M.S.; D. R. Martin, Ph.D.; Thomas Meador, M.A.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN RADIO AND TELEVISION

UPPER DIVISION COURSES

Telecommunications and Film

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>101.</td>
<td>Broadcast Management (3)</td>
</tr>
<tr>
<td>103.</td>
<td>Broadcast Advertising (3)</td>
</tr>
<tr>
<td>104.</td>
<td>Broadcast Commercial Practices (3)</td>
</tr>
<tr>
<td>105.</td>
<td>Regulation of Broadcasting (3)</td>
</tr>
<tr>
<td>106.</td>
<td>International Broadcasting (3)</td>
</tr>
<tr>
<td>110.</td>
<td>Writing and Producing for Broadcasting and Film (3)</td>
</tr>
<tr>
<td>130.</td>
<td>Radio Programming (3)</td>
</tr>
<tr>
<td>150.</td>
<td>Lighting for Television</td>
</tr>
<tr>
<td>156.</td>
<td>Advanced Lighting and Staging for Television and Film (4)</td>
</tr>
</tbody>
</table>

GRADUATE COURSES

Telecommunications and Film

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>200.</td>
<td>Research and Bibliography (3)</td>
</tr>
<tr>
<td>201.</td>
<td>Seminar in Broadcast Management (3)</td>
</tr>
<tr>
<td>202.</td>
<td>Seminar in Broadcast Advertising Problems (3)</td>
</tr>
<tr>
<td>203.</td>
<td>Seminar in History of Broadcasting (3)</td>
</tr>
<tr>
<td>205.</td>
<td>Mass Communications Research (3)</td>
</tr>
<tr>
<td>210.</td>
<td>Seminar in Writing for Broadcast and Film (3)</td>
</tr>
</tbody>
</table>

# Not more than three units in Telecommunications and Film 198 are acceptable on master's degree in Radio and Television.
212. Criticism of Broadcasting and Cinema (3)
Prerequisites: The equivalent of an undergraduate major in telecommunications and film.
Standards for objective appraisal of the ethical and artistic aspects of radio, television, and film programs. (Formerly numbered Speech Arts 287.)

268. Directing the Dramatic Film (3)
Prerequisites: Telecommunications and Film 168, 180 and consent of instructor.
Analysis of techniques and stylistic contributions of major directors as seen in their films. Production of a short dramatic film embodying concepts so learned. (Formerly numbered Speech Arts 268.)

270. Seminar in Educational Broadcasting (3)
Prerequisite: The equivalent of an undergraduate major in telecommunications and film.
Educational uses of electronic media. Use of telecommunications in classrooms and school systems. Relationship of noncommercial radio and television (Public Broadcasting) to commercial broadcast media and education. Formerly numbered Speech Arts 285.

272. Seminar in Mass Communication Theory (3)
Prerequisite: Speech Communication 135.
Analysis of theoretical models of mass communication. Application of operational models for the diffusion of information, and the adoption of innovation, to problems in the mass media. (Formerly numbered Speech Arts 288.)

273. Mass Communications Message Design (3)
Prerequisite: Speech Communication 135.
Selection and organization of message design elements in the mass communications media. Analysis of different effects of various types of mass communications formats, presentations, and systems on individuals and groups.

284. Seminar in Programming and Production (3)
Prerequisite: The equivalent of an undergraduate major in telecommunications and film.
Theory and analysis of programming and production of broadcasting. (Formerly numbered Speech Arts 284.)

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