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Prerequisites for Graduate Courses
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Art
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Business Administration
Chemistry
Master's Degree
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Drama
Economics
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History
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Industrial Arts
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ACADEMIC CALENDAR
1970–1971

1970 SUMMER SESSIONS

June 15–26
Intersession (2 weeks).
June 29–August 7
Term I Summer Session (6 weeks).
July 11
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
July 24
Last day to apply for summer graduation with the master's degree, Graduate Office.
July 29
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-10:00 p.m., by appointment four weeks in advance, Test Office.
August 7
Final date for depositing completed bound theses at Graduate Office for summer graduation. Also last day for reporting results on comprehensive examinations to the Graduate Office by department, school, or college.
August 10–28
Term II Summer Session (3 weeks).
August 15
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.

FALL SEMESTER

January 1
Applications for admission or readmission to San Diego State for the fall semester accepted until enrollment quotas are met.
August 31–September 11
Registration, payment of fees, advising, and enrollment in classes for continuing students.
September 14
Opening date of the academic year.
September 14–18
Registration, payment of fees, advising, and enrollment in classes for new students.
September 21
First day of classes.
September 26
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
October 1
Applications for admission or readmission to San Diego State for the spring semester accepted until quotas are met.
October 5
First day of classes.
October 9
Last day to apply for refunds.
October 10
Last day to withdraw from class without penalty for unsatisfactory work.
October 24
Graduate School Foreign Language Test, by appointment four weeks in advance, Test Office.
November 11
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
November 20
Last day to withdraw from class or change program.
November 24
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-10:00 p.m., by appointment four weeks in advance, Test Office.
November 26–28
Thanksgiving recess.
ADCAEMIC CALENDAR—Continued
1970-1971

FALL SEMESTER—Continued
December 11
Last day to apply for mid-year graduation with the master's degree, Graduate Office.
December 12
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
December 19
Last day of classes before winter recess.
December 21-January 2
Winter recess.
January 4
Classes resume.
January 6
Last day for a complete withdrawal from the College.
January 16
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
January 18-19
Study and consultation.
January 20
First day of final examinations.
January 29
Last day of the fall semester.

SPRING SEMESTER
October 1
Applications for admission or readmission to San Diego State for the spring semester accepted until enrollment quotas are met.
February 1
First day, second semester.
February 2
Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment four weeks in advance, Test Office.
February 2-5
Registration, payment of fees, advising, and enrollment in classes. (These dates for continuing students subject to change. See Class Schedule.)
February 6
Graduate School Foreign Language Test, by appointment four weeks in advance, Test Office.
February 8
First day of classes.
February 12
Holiday—Lincoln's Birthday.
February 15
Holiday—Washington's Birthday.
February 23
Last day to apply for refunds.
February 26
Last day to withdraw from class without penalty for unsatisfactory work.

March 13
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
April 3
Last day of classes before spring recess.
April 5-10
Spring recess.
April 12
Classes resume.
April 16
Last day to withdraw from classes or change program.
April 17
Graduate School Foreign Language Test, by appointment four weeks in advance, Test Office.
April 23
Last day to apply for June graduation with the master's degree, Graduate Office.

SPRING SEMESTER—Continued
April 24
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
May 7
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, 6:30-10:00 p.m., by appointment four weeks in advance, Test Office.
May 19
Last day for a complete withdrawal from the College.
May 21
Last day for depositing completed bound theses at Graduate Office for June graduation. Also last day for reporting results on comprehensive examinations to the Graduate Office by department, school, or college.
May 29
Holidays—Memorial Day.
May 30
Study and consultation.
May 31-June 1
First day of final examinations.
June 2
Baccalaureate Services.
June 6
Commencement. Last day of the spring semester.

1971 SUMMER SESSIONS
June 19
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
June 14-25
Intersem (2 weeks).
June 28-August 6
Term I Summer Session (6 weeks).
July 23
Last day to apply for summer graduation with the master's degree, Graduate Office.
July 24
Graduate School Foreign Language Test, by appointment four weeks in advance, Test Office.
July 28
Graduate Record Examination Aptitude Test for master's degree applicants, 6:30-10:00 p.m., by appointment four weeks in advance, Test Office.
August 6
Final date for depositing completed bound theses at Graduate Office for summer graduation. Also last day for reporting results on comprehensive examinations to the Graduate Office by department, school, or college.
August 9-27
Term II Summer Session (3 weeks).
August 21
Graduate Record Examination Aptitude Test for master's degree applicants, 8:30-12:00 noon, by appointment four weeks in advance, Test Office.
FEES

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

FEES PAYABLE AT TIME OF REGISTRATION

Fees for more than six units:
- Materials and service: $54.00
- Student activity fee: 9.50
- Student Union: 7.00
- Facilities fee: 3.00
- Auditors pay same fees as students carrying courses for credit.

Total required fees: $73.50

Fees for six units or less:
- Materials and service: $54.00
- Student activity fee: 4.75
- Student Union: 3.50
- Facilities fee: 3.00
- Auditors pay same fees as students carrying courses for credit.

Total required fees: $65.25

Tuition for foreign student:
- Nonresident and foreign student tuition: $180.00
- Foreign student enrolled for 15 units or more...
- Foreign student enrolled for less than 15 units or fraction thereof...

Parking fees:
- Students enrolled in more than six units...
- Students enrolled in six units or less...
- Each alternate car in addition to first vehicle...
- Two-wheeled, self-propelled vehicle...
- Student enrolled in more than six units...
- Student enrolled in six units or less...

MISCELLANEOUS FEES

Application fee for admission or readmission to the College...
- (non-refundable)
- Late registration...
- Change of program...
- Failure to meet administratively required appointment or time limit...
- Transcript of record (first copy free)...
- Check returned for any cause...
- Studio lesson, per lesson...
- Current fee per semester...
- Organ practice...
- Loss or damage of equipment and library books...

REGULAR SESSION FEE REFUNDS

Materials and service fees:
To be eligible for full partial refunds of materials and service fees, a student withdrawing from college must file an application with the Business Office not later than 14 days following the day of the term when instruction begins; and provided, further, that the amount of $10 shall be retained to cover the cost of registration.

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 Business Office within the following time limits:
- Before or during the first week of the semester: 100 percent of fee
- During the second week of the semester: 90 percent of fee
- During the third week of the semester: 70 percent of fee
- During the fourth week of the semester: 50 percent of fee
- During the fifth week of the semester: 30 percent of fee
- During the sixth week of the semester: 20 percent of fee

The late registration fee is not refundable.

The Business Office should be consulted for further refund details.

SUMMER SESSION FEES

Tuition, each session...
- Activity fee...
- Term I...
- Term II...
- Student union fee (required)...
- Term I...
- Term II...

Parking fees:
- Nonreserved spaces:
  - Six-week session...
  - Other sessions of one week or more...

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 Colleges.
PART ONE

BOARD OF TRUSTEES OF THE CALIFORNIA STATE COLLEGES

5670 Wilshire Boulevard
Los Angeles, California 90036

EX OFFICIO TRUSTEES

Ronald Reagan, B.A., Governor of California and President of the Trustees........................................ State Capitol, Sacramento 95814
Ed Reinecke, B.S., Lieutenant Governor of California................................................................. State Capitol, Sacramento 95814
Robert T. Monagan, Speaker of the Assembly.................................................................................. State Capitol, Sacramento 95814
Max Rafferty, A.B., M.A., Ed.D., State Superintendent of Public Instruction............................. 721 Capitol Mall, Sacramento 95814
Glenn S. Dumke, A.B., M.A., Ph.D., LL.D., L.H.D., Chancellor of the California State Colleges........................................ 5670 Wilshire Blvd., Los Angeles 90036

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.

9220 Sunset Boulevard, Los Angeles 90069

Theodore Meriam, A.B. (1971)
P. O. Box 370, Chico 95926

Albert J. Ruffo, LL.B., B.S. in EE. (1971)
675 North First Street, Suite 1200, San Jose 95112

Mrs. Philip Conley, BA. (1964)
3729 Huntington Boulevard, Fresno 93702

E. Guy Warren, B.A. (1973)
P. O. Box 59, Hayward 94541

Daniel H. Ridder, B.A. (1975)
604 Pine Ave., Long Beach 90801

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

310 Sansome Street, San Francisco 94104

Alec L. Cory, B.A., LL.B. (1973)
530 B Street, Suite 1900, San Diego 92101

William A. Norris, A.B., LL.B. (1972)
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610 16th Street, Room 420, Oakland 94612

Earle M. Jorgenson (1970)
10650 So. Alameda, Los Angeles 90054

Dudley Swim, A.B., M.A. (1976)
Box 5000, Route 2, Carmel Valley Road, Carmel 93924
APPOINTED TRUSTEES—Continued

Karle L. Wente, M.S. (1976)
5565 Tesla Road, Livermore 94550
E. Litton Bivans (1977)
2431 Dallas Street, Los Angeles 90031
W. O. Weissich, B.S., J.D. (1977)
1299 Fourth Street, San Rafael 94901

OFFICERS OF THE TRUSTEES

Governor Ronald Reagan
President
Mrs. Philip Conley
Vice-Chairman
Daniel H. Ridder
Chairman
Chancellor Glenn S. Dumke
Secretary-Treasurer

OFFICE OF THE CHANCELLOR OF THE CALIFORNIA STATE COLLEGES
5670 Wilshire Boulevard
Los Angeles, California 90036
213 938-2981

Chancellor__________________________Glenn S. Dumke
Executive Vice Chancellor________________Harry E. Brakebill
Assistant Chancellor, Faculty and Staff Affairs________________C. Mansel Keene
Vice Chancellor, Academic Affairs________________Russell G. Whitesel
Vice Chancellor, Business Affairs________________D. Dale Hanner
Vice Chancellor, and General Counsel________________Norman Epstein
Vice Chancellor, Physical Planning and Development________________Harry Harmon

THE CALIFORNIA STATE COLLEGES

California State College, Bakersfield
615 California Avenue
Bakersfield, California 93304
Paul F. Romberg, President
805 327-9101

California State College, Dominguez Hills
1000 East Victoria Street
Dominguez Hills, California 90247
Leo F. Cain, President
213 532-4300

California State College, Fullerton
800 North State College Boulevard
Fullerton, California 92631
William B. Langsdorf, President
714 870-2011

California State College, Hayward
25800 Hillary Street
Hayward, California 94542
Ellis E. McCane, President
415 538-8001

California State College, Long Beach
6101 East Seventh Street
Long Beach, California 90801
Stephen Horn, President
213 433-0951

California State College, Los Angeles
5151 State College Drive
Los Angeles, California 90032
John A. Greenlee, President
213 224-2011

California State College, San Bernardino
5900 State College Parkway
San Bernardino, California 92407
John M. Pfau, President
714 887-6311
The 19 California State Colleges, from Humboldt County in the north to San Diego in the south, comprise the largest system of public higher education in the western hemisphere and one of the largest in the world. Current enrollment exceeds 227,000 full-time and part-time students who are served by a faculty that numbers approximately 13,000.

Although San Jose State College, the oldest, was founded over a century ago, the California State Colleges were not drawn together as a system under an independent board of trustees until after passage of the Donahoe Higher Education Act by the Legislature in 1960.

Responsibility for the California State Colleges is vested in the Board of Trustees, whose members are appointed by the Governor. The Chancellor is the administrative officer of the Trustees. Together, the Trustees and the Chancellor set broad policy, while delegating responsibility for implementation to the colleges. The Academic Senate of the California State Colleges, consisting of elected representatives of the faculty at each college, recommends academic policy to the Board of Trustees through the Chancellor.

Each college in the system has its own geographic and curricular character, but all emphasize the liberal arts and sciences. Programs leading to the bachelor's and master's degrees, as well as a limited number of joint doctorates, are master planned to anticipate and accommodate student interest and the educational and professional needs of the State of California. The primary responsibility of the faculty is the instructional process, with increasing recognition of the importance of the role of research as a necessary concomitant to high quality teaching.

The California State Colleges are now in the most dynamic period of their development. Prior to World War II, there were seven State Colleges with a peak total enrollment of 13,000. Since 1947, twelve new colleges have been established and sites have been selected for new campuses in Ventura, San Mateo, and Contra Costa Counties. California State College, Bakersfield, will open its doors to students for the first time this year. Enrollment in the system is expected to go beyond 400,000 by 1980.
### PART TWO
### SAN DIEGO STATE
### GENERAL INFORMATION

#### ADMINISTRATION

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<td>President</td>
<td>Malcolm A. Love</td>
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<tr>
<td>Assistant to the President</td>
<td>Lloyd A. Walker</td>
</tr>
<tr>
<td>Executive Dean</td>
<td>George A. Koeber</td>
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<tr>
<td>Administrative Analyst</td>
<td>Margaret L. Gilbert</td>
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<tr>
<td>Building Program Assistant</td>
<td>Lawrence A. Glinger</td>
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<tr>
<td>Manager, ADP Services</td>
<td>Robert W. Swanson</td>
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<tr>
<td>Director of Institutional Studies</td>
<td>Robert L. McCormick</td>
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<tr>
<td>Facilities Planning Assistant</td>
<td>Clarence B. Cover</td>
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<tr>
<td>Vice President, Administration</td>
<td>Ernest B. O'Byrne</td>
</tr>
<tr>
<td>Assistant to the Vice President, Admission</td>
<td>Esperanza A. Castañeda</td>
</tr>
<tr>
<td>Director of Centro de Estudios Chicanos</td>
<td>Wayman H. L. Johnson</td>
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<tr>
<td>Director of Educational Opportunities Program</td>
<td>Vicente H. Rivas</td>
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<tr>
<td>Publications and Public Relations Manager</td>
<td>Gordon F. Lee</td>
</tr>
<tr>
<td>Manager, San Diego State College Foundation</td>
<td>William L. Erickson</td>
</tr>
<tr>
<td>Vice President, Academic Affairs</td>
<td>Donald E. Walker</td>
</tr>
<tr>
<td>Executive Assistant, Vice President, Academic Affairs</td>
<td>Robert S. Ackerly, Jr.</td>
</tr>
<tr>
<td>Assistant to the Vice President, Academic Affairs</td>
<td>Jane K. Smith</td>
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<td>Classical and Oriental Languages Department</td>
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<tr>
<td>Economics Department</td>
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<tr>
<td>English Department</td>
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<td>French-Italian Department</td>
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<td>German-Russian Department</td>
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<td>Vyasa Dukas</td>
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<td>Philosophy Department</td>
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<td>Religious Studies Department</td>
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<td>G. Ray Jordan (Acting)</td>
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<td>Spanish-Portuguese Department</td>
<td>C. Dale Johnson</td>
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<td><strong>COLLEGE OF PROFESSIONAL STUDIES</strong></td>
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<tr>
<td>Aerospace Studies Department</td>
<td>Richard J. Rost</td>
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<tr>
<td>Art Department</td>
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<td>Drama Department</td>
<td>O. Kenneth Karr, Jr.</td>
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<td>Nursing Department</td>
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<td>Telecommunications and Film Department</td>
<td>Sue W. Earnest</td>
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<td>Robert E. Lee</td>
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<tr>
<td>Astronomy Department</td>
<td>Albert W. Johnson, Dean</td>
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<tr>
<td>Biology Department</td>
<td>Hale L. Wedberg</td>
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<td>Botany Department</td>
<td>Burr Nelson</td>
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<td>R. Gordon Gastil</td>
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<td>Calvin V. Holmes</td>
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<td>William L. Baxter</td>
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<td>Norman F. Dessel</td>
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**SCHOOL OF BUSINESS ADMINISTRATION**
- Robert P. Hargate, Dean
- Maurice L. Crawford, Associate Dean
- Thomas R. Worthington, Assistant Dean for Graduate Study
- William A. Harned, Accounting Department
- William A. Nye, Finance Department
- Ellis C. Archer, Information Systems Department
- Lynn H. Peters, Management Department
- Donald A. Lindgren, Marketing Department

**SCHOOL OF EDUCATION**
- Manfred H. Schrumpf, Dean
- Francis B. Ballard, Associate Dean
- Howard B. Holt, Coordinator, Department of Educational Administration
- Paul Bruce, Coordinator, Department of Counseling Education
- Robert R. Nardelli, Coordinator, Department of Elementary Education
- T. Wayne McAllister, Coordinator, Department of Library Science
- Philip Halfaker, Coordinator, Department of Secondary Education
- Arthur J. Mitchell, Coordinator, Department of Special Education
- Paul Erickson, Coordinator, Clinical Training Center
- Robert D. Smith, Jr., Coordinator, Community College Programs
- James N. Reson, Coordinator, Graduate Programs

**SCHOOL OF SOCIAL WORK**
- Irving B. Tebor, Dean (Acting)

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- David H. Ford, Coordinator
- David D. Cox, Director
- Joseph McClintic, Director
- William A. Finch, Director
- Ibrahim I. Poroy, Coordinator
- Oscar Kaplan, Director
- Edward Neuner, Coordinator
- Adam Gifford, Coordinator
- Aubrey Wending, Director
GENERAL INFORMATION

San Diego State, founded in 1916, is one of the nineteen publicly supported California State Colleges governed by the Board of Trustees of the State. 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 at 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 the campus to within minutes drive of the center of San Diego and famous Balboa Park. Twelve miles to the west are the beautiful resort beaches on 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 Globe Theatre, the Fine Arts Gallery of San Diego, the Timken Gallery, the Museum of Natural History and other museums are located in Balboa Park. Courses in drama are offered in six other institutions near the university. San Diego State is a member of the Western Association of Colleges and Universities.

San Diego State is a member of the Western Association of Colleges and the Assembly of Colleges, the National Council for the Accreditation of Teacher Education, the California State Board of Education, and the Western Association of Collegiate Schools of Business. The yearbook Administration for the education and training of teachers is accredited by the California State Board of Education. The Department of

ACCRREDITATION

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THE FACULTY

The college faculty consists of over 1,400 members who have received their advanced training in over 100 colleges and universities of the United States or foreign countries. The faculty is distinguished in terms of its formal education, in the wide variety of its practical experience in business, industry, government, and the teaching profession, in its publications, and in its research activity.

THE LIBRARY

One of the largest university library buildings in the nation will be opened to this academic community in September 1970. It will provide ideal facilities for study and research. At the heart of the expanding campus the five story building will seat 3,700 readers and have space for a million volumes. Special services include: a central reference room, a lower division library, special collection room for rare books and archives, documents department, curriculum materials center, typing rooms, current periodicals reading room, and a viewing and listening center for microfilms viewing and disc and tape listening.

Library resources and services are noteworthy. The collection consists of 680,000 volumes including books, bound periodicals and government documents. Additional resources include: 600,000 micro opques, 151,000 master's theses, 15,000 reels of microfilm, 30,000 college and university bulletin, 30,000 curriculum materials, 22,000 scientific reports, 170,000 archival papers and many other information media including phonorecords, sound tapes, prints, maps, pamphlets and other graphic materials.

The Library receives 7,400 periodicals and other serial titles excluding government documents. It is the depository for United States, California, Illinois, New York and Texas government publications and receives all publications of the United States, Organization of American States, and those of several other international bodies.

Highly trained reference librarians assist students and faculty in their reading, study, and research. To aid the student to develop 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 throughout the building.

Several research centers on campus have collections not included in the libraries' holdings. Among them are: Public Administration and Urban Studies Library, 30,000 items; Economic Research Center, 32,000 items; Geography and Geology Department, 80,000 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 students. 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 School Services Research in the School of Education cooperates in community service studies and disseminates educational research information.

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

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

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.

The Center for Latin American Studies seeks to encourage teaching and research related to Latin America. It has primary responsibility for the administration of
Latin American undergraduate and graduate degrees and the Mexican Summer School programs.

The Center for Research on Economic Development in the Department of Economics provides material and aid for research in problems related to less developed countries.

The Center for the Study of Counselor Education is an interdisciplinary organization under the Dean of the School of Education. It conducts programs and renders service related to counselor education and guidance.

The Center for Survey Research encourages non-profit research in the sample and non-government organizations and to do field work on a local, state, or national basis.

The Economics Research Center in the Department of Economics collects research materials and publishes occasional monographs.

The Institute of Labor Economics in the Department of Economics provides material and directions for research in labor problems, collective bargaining, labor legislation, and social security.

The Institute of Public and Urban Affairs conducts research related to community and governmental problems. It also sponsors institutes and conferences in Public Administration Center with a specialized collection of research materials.

The Social Research Center in the Department of Sociology provides physical such areas of interest in urban growth and development, demographic factors, and social surveys.

CATALOGS AND BULLETINS

The General Catalog, published annually in May, may be obtained from the mailing costs. The catalog carries information on admissions, fees and tuition, courses, scholarships, residence halls, student services and a faculty directory.

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

The Summer Session Bulletin, issued each April, includes an application form, information on admissions and registration, fees, living accommodations, courses, Summer Session 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 $5 plus an additional charge of 10¢ 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 Administrator's Monday of the week preceding the week that class instruction is scheduled to begin in the regular fall session, and the ending date shall be the second calendar following the Monday of the semester. Dates for the current academic year are carried in the Academic Calendar which appears in this bulletin.

LIVING ACCOMMODATIONS

Accommodations for 1,669 single resident students will be available in September, 1970 in six residence halls on campus.

Each of the buildings is fire-proof and air-conditioned throughout for the comfort of the occupants. Five halls (two for men and three for women) accommodate 209 students each, with sleeping and study facilities on a 2 student per room basis. Another residence hall, which is co-ed, accommodates 221 students with as well as opportunity for participation in campus activities. For the year 1970-71, the total charge per semester for room, health service benefits, linens and 19 meals per week served in the college cafeteria, will range in excess of $500, depending on accommodations. No definite commitment can be made to exact prices, as these are subject to change. For additional information contact the Housing Manager's Office. A deposit of $91, which includes a refundable security deposit of $50 is required.

Rooms are available in the residence halls during the summer school sessions. Meals during these sessions may be purchased on a casual basis from the college cafeteria. A Meal Ticket Program is available during Summer Session I. Rooms are available on a single and double occupancy basis for the first six weeks session as well as Session II, which is 3 weeks. Weekly rates may be available to students under special circumstance. Space will be available for married students without children.

Additional information concerning reservations for housing and deposits should be obtained from the Director of Housing, San Diego State College, San Diego, California 92115.

PERSONNEL SERVICES CENTER

The facilities of the Personnel Services Center are available to graduate students who may desire 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 student health. When school is in regular session these health services, under the direction of a physician administrator, assisted by a full-time staff of physicians and nurses, are available to students. A student must be currently enrolled for seven or more units to be eligible for other than emergency treatment. Regular services are not available during the summer sessions.

A student insurance program is available for those carrying seven units or more. The insurance is sponsored by the Associated Students and may be purchased through Aztec Shops. A representative of the insuring company is on campus during registration periods.

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 Placement 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 Placement 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 the position best suited to him. The Early Match System (EMS) is available to all students registered with the Placement Center except those in Education. EMS is a student's silent employer. Each candidate completes a card with thirty 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 part-time job 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.
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**

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<th>Item</th>
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<tr>
<td>Materials, service, student activity, and student union fee, and facilities fee.</td>
<td>$147.00</td>
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<tr>
<td>(Non-resident tuition for out-of-state students of $890, or Foreign Student tuition of $160, is in addition to above fee.)</td>
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</tr>
<tr>
<td>Books and supplies</td>
<td>180.00</td>
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<tr>
<td>Room, board, health services, parking</td>
<td>1,200.00</td>
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<td>Personal</td>
<td>450.00</td>
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<td><strong>Total</strong></td>
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**Typical Cost of Commuting Students**

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<td>Materials, service, student activity, and student union fee.</td>
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<tr>
<td>Books and supplies</td>
<td>180.00</td>
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<tr>
<td>Lunches</td>
<td>180.00</td>
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<tr>
<td>Transportation and parking</td>
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<td>Board and incidentals</td>
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<td>Personal</td>
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<td>360.00</td>
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**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 1955. The first two-year graduate program leading to the Master of Social Work was authorized in 1963.

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, 1969, over 4,600 graduate students were enrolled at San Diego State of which 2,090 had been admitted to the Graduate Division with classified graduate standing.

From June, 1950 to June, 1969, 2,996 Master of Arts degrees, 1,029 Master of Science degrees, 5 Master of Business Administration degrees, and 257 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 quality 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 1970-1971, the membership of the Graduate Council is as follows:

Donald E. Walker, Ph.D. (ex officio) Vice President for Academic Affairs
Maurice M. Lemme, Ph.D. Dean of Graduate Studies
Millard R. Biggs, Ph.D. Associate Dean of Graduate Studies
Kathleen Fox, Ph.D. College of Professional Studies
William A. Hunrichs, Ph.D. College of Sciences
James D. Kitchen, Ph.D. College of Professional Studies
Chester R. Lodge, Ph.D. College of Engineering
Jean M. Maxwell, M.S.S. School of Social Work
Ramon R. Ross, Ed.D. School of Education
Glenn A. Sandstrom, Ph.D. College of Arts and Letters
Richard L. Threet, Ph.D. College of Sciences
Robert W. Winlow, Ph.D. College of Arts and Letters
Thomas R. Wotruba, Ph.D. School of Business Administration

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 new graduate level (200-numbered) courses and new advanced degree curriculums.
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

MASTER OF ARTS

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

MASTER OF SCIENCE

Aerospace Engineering Geology
Astronomy Home Economics
Biology Mathematics
Business Administration Mass Communications
Chemistry Mechanical Engineering
Civil Engineering Physics
Counseling Psychology
Electrical Engineering Social Work

MASTER OF BUSINESS ADMINISTRATION

MASTER OF CITY PLANNING

MASTER OF PUBLIC ADMINISTRATION

MASTER OF SOCIAL WORK

Spanish

Music

Physics

Psychology

Radio and Television

Russian

Social Science

Sociology

Spanish

Speech

Speech Pathology and Audiology

Geology

Home Economics

Mathematics

Mass Communications

Mechanical Engineering

Physics

Psychology

Social Work

Statistics
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 Junior 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 Standard Designated Services Credential with a Specialization in Health
The Standard Supervision Credential
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 and stipend 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, he must make early application (A)

Students wishing to attend the College during the Fall Semester must file an application for Admission at the Office of Admissions.

The acceptance of courses taken in the summer sessions by other colleges or by the college or school board concerned.

The summer sessions are organized into three terms: An Intersession of two weeks, during which time two academic units may be earned; Term I of six weeks, during which time three academic units may be earned; and Term II of three weeks, more units than authorized, including concurrent college courses taken outside this college, will not receive credit for the excess units.

The two-week Intersession usually provides only a limited opportunity for credit in special workshops and institutes.

GRADUATE STUDY FOR FOREIGN STUDENTS

The facilities of San Diego State for graduate study are available to qualified graduate students 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 study should contact the Campus Veterans Office in Room 107 of the Arts and Sciences Building for information and counseling regarding veteran's benefits, prior to the date of application for admission.

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 12 officially approved units per semester for full subsistence. Half subsistence allowances may be given for six such units per semester.

GRADUATE TEACHING ASSISTANTSHIPS

Graduate teaching assistantships may be obtained by qualified graduate students in the areas of anthropology, art, astronomy, biology, business administration, chemistry, computer science and statistics, economics, engineering, English, French, geography, geology, German, health education, industrial arts, mathematics, physical education, physical science, physics, political science, psychology, sociology, Spanish, and speech arts.

Qualifications for appointment include admission to San Diego State with unclassified 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. A graduate teaching assistant must meet the standards of the Graduate Division and failure to do so will result in the cancellation of his appointment.

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 with unclassified 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. A graduate assistant must meet the standards of the Graduate Division and failure to do so will result in the cancellation of his appointment.

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.

WAIVER OF NONRESIDENT TUITION FEES

The tuition fees for nonresident graduate students may be waived on the basis of demonstrated financial need and superior scholastic achievement. To obtain a waiver of tuition fees, a student must: (a) be a nonresident graduate student; (b) supply transcripts of all previous college work; (c) be admitted to San Diego State with unclassified graduate standing; (d) apply for admission to the Graduate Division and be qualified for such admission; (e) take the Graduate Record Examination Aptitude Test; (f) have earned a grade point average above 3.0 (B) in all prior undergraduate and graduate studies; and (g) enroll in at least 10 units of course work applicable on a master's degree program during the semester in which the waiver of fees is to be granted.

Application forms for waivers of nonresident tuition fees and further information may be obtained at the Graduate Office. These forms must be filed in the Graduate Office within the first month after the beginning of the semester in which the tuition fees are to be waived.

Graduate students whose tuition fees are waived must pay all other fees listed under Fees in this bulletin.

Foreign graduate students should not expect to receive a waiver of the nonresident tuition fees until they have completed at least one semester of full-time graduate study at San Diego State.
GRADUATE SCHOLARSHIPS AND AWARDS

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

CALIFORNIA CONGRESS OF PARENTS AND TEACHERS, INC.

Two Secondary Education Scholarships of $500 to be granted only to upper division or graduate students working toward a Standard Teaching Credential or a Specialization in Secondary Teaching for teaching 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 Financial Aid Office.

SAN DIEGO INSTITUTE ON GOVERNMENT SCHOLARSHIP IN PUBLIC ADMINISTRATION

A $200 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 SCHOLARSHIP

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 SCHOLARSHIP

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. Eligibility for such stipends is determined by factors such as need, academic performance, and other factors. Stipends are given to students who will carry at least one-half the normal full-time academic work load. The repayment period may be interrupted when a borrower enters the military service, Peace Corps, VISTA, or continues as a student at an institution of higher education. This loan program may provide a borrower with partial cancellation of his loan each year at the rate of ten or fifteen percent, plus interest, for service as a full-time teacher in a public or other non-profit elementary or secondary school or institution of higher education.

UNIVERSITY OF CALIFORNIA COLLEGE SCHOLARSHIP

SCHOLARSHIP

An applicant for a State Graduate Fellowship must: (1) Be a resident of California; (2) Have a baccalaureate degree prior to the time of enrollment in a graduate school; (3) Demonstrate need for monetary assistance; (4) Indicate his field of study; (5) Make formal application for a State Fellowship; (6) Plan to enter or be enrolled in a graduate school in California; and (7) Comply with all rules and regulations adopted by the Scholarship and Loan Commission. Applications are available in the Scholarship and Loan Commission Office through March.

FINANCIAL AID

San Diego State Foundation Loan Program

Through the generosity of a number of individuals and groups, funds have been established to assist students with both emergency and deferred loans. Completion before the student is eligible. The amount that may be borrowed, based on college-related need, is normally $200 or less but may not exceed $500. 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 $2,500 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 repayments begin nine months after the student has ceased to carry at least one-half the normal full-time work load. The repayment period may be interrupted when a borrower enters the military service, Peace Corps, VISTA, or continues as a student at an institution of higher education. This loan program may provide a borrower with partial cancellation of his loan each year at the rate of ten or fifteen percent, plus interest, for service as a full-time teacher in a public or other non-profit elementary or secondary school or institution of higher education.

UNITED STUDENT AID FUND PROGRAM

These long-term loans are made by participating banks and credit unions and provide deferred payment until graduation or the termination of higher education. Graduates 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 last three years. Repayment begins nine months after the student has ceased to carry at least one-half the normal full-time work load. Most loans under this program are free of interest. Applications are available in the Financial Aid Office. Students from other states may also secure forms from their home town banks.

FEDERALLY INSURED LOAN PROGRAMS

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 the individual skills of the student, varies from $1.00 to $2.75 per hour. Job opportunities are available on campus and with selected community and government 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 $600 of financial assistance from their parents, are required to submit a copy of the Parent's Confidential Statement form to CSS, designating San Diego State College as one of the recipients. Other necessary forms and an information brochure may be obtained at the Financial Aid Office.
APPLYING FOR AID

Students may request assistance for all programs explained above on financial aid forms provided by the college. All applicants twenty-five years of age or under, regardless of marital status, must also complete a Parent's Confidential Statement or a Student's Confidential Statement, as applicable. Application forms are available between January 2 and April 15, 1970 for the 1970-1971 academic year. To the extent that funds are still available, students may apply for aid from any program after October 1, 1970.

INSTITUTE FOR SECONDARY SCHOOL TEACHERS OF MATHEMATICS

Under a grant from the National Science Foundation, San Diego State is offering a full-time Academic Year Institute for 22 high school teachers of mathematics during the academic year 1970-1971. All participants will attend a seven-week preliminary session starting June 29, 1970.

To be eligible for admission to the Institute, the applicant must be admitted to San Diego State with unclassified graduate standing, must hold an acceptable bachelor's degree from an accredited institution, must be teaching or supervising mathematics at the secondary school level, and, if planning to earn the master's degree, must be admitted to the Graduate Division. The curriculum of the Institute is designed to provide the better trained participants with an opportunity to work toward the Master of Arts degree for teaching service in mathematics. The purpose of the Institute is to give teachers of mathematics in the secondary schools a broader and deeper knowledge of modern mathematics and to increase their ability to teach it to high school students.

The basic stipend is $3,525 which includes both the academic year and the preliminary summer session. In addition, allowances for dependents, travel, and books are available. Tuition and fees are paid by the National Science Foundation. Information concerning the Institute may be obtained from Dr. Gerald A. Becker, Mathematics Institute, San Diego State.

ADMISSION OF GRADUATE STUDENTS TO SAN DIEGO STATE

The conditions for admission of graduate students to San Diego State are determined by the Board of Trustees of the California State 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 acceptable baccalaureate degree from an accredited institution; or shall have completed equivalent academic preparation as determined by the appropriate college authorities.

"(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.

APPLICATION FOR ADMISSION

All new graduate students (including graduates of San Diego State) and all former graduate students who have interrupted their attendance at this college by one or more semesters must comply with the following procedure in seeking admission or readmission to the college:

Dates for Filing Application. An application for admission to San Diego State may be filed during the semester preceding the one in which the applicant expects to enroll. Applications are accepted on the opening dates indicated below for the respective semester, and continue to be accepted until enrollment quotas are met. Acceptance of applications may be discontinued without notice; it is advisable to file applications as early as possible within the application filing period.

For fall semester: January 1.
For spring semester: October 1.

Required Official Forms. The following official forms must be submitted to the Admissions Office:

(1) Application for admission or readmission, accompanied by a $20 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 in either of the two semesters immediately preceding the semester for which the application is submitted, unless such student was enrolled at another institution in a regular session subsequent to such previous semester.)

(2) Health history record

(3) Residency statement

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

FILING OF RECORDS

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

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

(2) Transcripts from EACH college attended (including extension, correspondence, summer session, or evening courses). Graduate students must file transcripts in duplicate if they plan to enter the master's degree program.
PHOTOGRAPH OR TRUE COPY OF THE MILITARY SEPARATION FORM DD-214 (OR EQUIVALENT) IF APPLICANT HAS HAD ACTIVE MILITARY SERVICE. (NOT REQUIRED OF GRADUATE STUDENTS.)

An official transcript is one sent directly between schools. The applicant must request the school or college to send the transcript to the Admissions Office, San Diego State. All records or transcripts received by the college become the property of the college and will not be released nor will copies be made.

ADMISSION OF FOREIGN 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 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 certifying institution attended several months in advance of the opening of the semester English, they should be accompanied by certified English translations. Credentials 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 admission to the college can be granted. Information as to the time and English, English will be given for the purpose of placing students; English, are required to take one or more of the following courses, depending upon performance on the placement in consecutive semesters, with first required course being during the student's first year at San Diego State. Foreign students transferring from another United States 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 graduation. The student must apply for admission as a graduate student to San Diego State. Approval for the student's presence in 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 unclassified graduate standing. Application forms to the Graduate Division are available from the Dean of Graduate Studies. Admis-
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 fee of $1 is charged for change in the schedule of classes.

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.

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.

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 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 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 by the college must first be admitted to the college with unclassified graduate standing. Subsequent to (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.
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 for classified graduate standing 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, Aptitude Test, 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 division or department, he may continue postgraduate work as an unclassified graduate for the purpose of removing deficiencies and otherwise demonstrating ability to succeed in a master's 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 the master's degree, satisfactory completion of the required examinations, meeting and after receiving the recommendation of his department or school 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 the Graduate Division if he wishes to resume his graduate study. A student regulations and requirements in effect at the time he gained admission to the Graduate Division.

Any student who was not in attendance during the semester preceding the semester in which he wishes to enroll must apply for readmission.

CONCURRENT MASTER'S DEGREE CREDIT

A senior who is within seven units of completing requirements for the bachelor's degree and whose overall grade point average is 3.0 or above may petition the Graduate Council to take 100-numbered courses listed for concurrent master's study. The remaining requirements for the bachelor's degree must be completed and approved before the end of the term or semester in which bachelor's degree is completed at the end of the semester in which the concurrent credit is earned and not more than six units of such credit will be accepted on the minimum unit requirements for the master's degree.

SECOND MASTER'S DEGREE

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 division.

REGULATIONS OF THE GRADUATE DIVISION

Graduate students are individually responsible for complying with the procedures, regulations, and deadlines as set forth in the Graduate 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, 1970 will be required to follow the procedures and regulations stated in the 1970-1971 edition of the General Catalog and 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 (excellent), 3 points; C (satisfactory), 2 points; D (passing), 1 point; F (failure), 0 points. Incomplete (inc), counted as units attempted, 0 points. W (withdrawal), not counted in grade point average. W is used to report the satisfactory completion of Courses 296, 297, 298, and 299. Inc (incomplete), counted as failing in the grade point average. The mark "Cr" is used to report the satisfactory completion of Courses 296, 297, 298, and 299. For details see the section of this bulletin under Basic Requirements for the Master's Degree.

GRADE POINT AVERAGES

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

INCOMPLETE GRADE

An incomplete grade is counted as units attempted with no grade points and remains on the student's record unless made up. 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 deficiencies, 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 in 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 master's degree programs before the deadline date listed in the Academic Calendar of this bulletin.
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 receive an "I" (incomplete) grade. This incomplete will remain on the student's record as units attempted for one calendar year from the date of registration for the course. If the thesis is not completed at the expiration of this time a "W" (withdrawal for expiration of time) will be recorded on the student's record.

The student who has received a "W" in Course 299, Thesis, will be required to re-register for the course if he wishes to complete the thesis at a later date. The second (or subsequent) registration in Course 299, Thesis, is subject to the time limits and procedures followed in the case of the first registration. The calendar year begins with the opening date of the semester or summer school. In re-registering for Course 299, Thesis, the student must comply with the deadline dates for registration as published in the Academic Calendar.

The student must be registered in Course 299, Thesis, when the thesis is submitted to the Graduate Office.

WITHDRAWALS

OFFICIAL WITHDRAWAL

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

Withdrawal Deadline Dates and Penalties. If a student withdraws officially from college or from a class by the end of the third week of classes, the course will not be recorded upon his permanent record. If he withdraws after the third week passing or WF (withdrawal failing) will be recorded, depending upon whether he is passing or failing the course on the date of filing the request for withdrawal. Class is not permitted. A final grade will be recorded for each class for which he is enrolled. Withdrawal from college (that is from all courses) will be permitted up to 10 days preceding the final examination schedule; however, he is passing or failing in the class on the date of filing his request for withdrawal from college.

Improper Registration in Graduate Courses. The registration of graduate students in Course 299, Thesis, will be cancelled if the prerequisites for this course have not been met before registration.

UNOFFICIAL WITHDRAWAL

Unofficial Withdrawal. A student withdrawing unofficially from class or from college will receive failing grades in all courses from which he withdraws unofficially. An unofficial withdrawal is one in which a student stops attending classes established for withdrawal.

READMISSION

A student who withdraws from college must file application for readmission if Check calendar for deadline dates on readmission applications. A $20 application fee for readmission is required if the applicant was not registered for the fall semester in which he registered for it and if he was not enrolled at another institution subsequent to the last academic year at San Diego State College. Make check or money order payable to San Diego State College.

REPEATED COURSES

A graduate student may not repeat courses which have been taken as part of the degree program. Such courses may be repeated under the overall college regulations.
No fees or tuition paid by or for the student for the semester or summer session in which he is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester or summer session in which he is suspended, no additional tuition or fees shall be required of the student on account of his suspension. In the event that a student who has not reached his twenty-first birthday is suspended or expelled, the President shall immediately notify his parent or guardian of the action by registered mail to the last known address, return receipt requested. (Reference: California Administrative Code, Chapter 5, Sections 41301 and 41302.)

STUDENT GRIEVANCES

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

TRANSCRIPTS OF RECORD

A student may obtain an official transcript of his record by filing an application at the Registrar’s Office. A fee of $1 is charged (first copy free). One week should be allowed for the processing and mailing of the transcript. Transcripts sent from one college to another are considered as official. Transcripts presented by a student to a college are considered to be unofficial and are usually not accepted. Transcripts from other schools or colleges become the property of this college and will not be released nor will copies be made.

AUDITORS

A student who does not wish to take a course for credit may, with the consent of the instructor, enroll as an auditor. An auditor must meet all admission requirements and pay the same fees required of students taking the course for credit. No change from regular registration to audit, nor from audit to regular registration, and does not receive credit or a final grade in the course.

FINAL EXAMINATIONS

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

TRANSFER OR EXTENSION COURSE CREDIT

The amount of transfer and extension course credit acceptable on master’s degree programs is limited to a total of 6 units for the Master of Arts and the Master of Science degrees; 24 units for the Master of Business Administration degree; 26 units for the Master of City Planning degree; and 32 units for the Master of Social Work degree. To be accepted as a part of the requirements for these degrees, all appropriate credit must be approved by the Dean of Graduate Studies. No course can be deleted from an official program of study. No changes will be permitted unless approved by the Dean of Graduate Studies. All official programs of study must be completed within seven years of the date the program was approved.

STUDY LIST LIMITS IN THE GRADUATE DIVISION

Section 44601(l) of the Administrative Code defines the term “full-time student” to mean any student whose program while in attendance at a state college averaged twelve or more semester units per semester, or the equivalent.

Graduate students are advised that 12 units of 200-numbered courses or 15 units of a combination of 100- and 200-numbered courses are the recommended maximum programs for any one semester. Graduate students who are employed full time should not attempt to earn more than 6 units per semester.

Graduate students who are employed as graduate teaching assistants at San Diego State are limited to 16 units of combined teaching assignments and course work unless a request for excess load is approved by the Dean of Graduate Studies. Graduate teaching assistants who enroll for more units than authorized will not receive credit on their official degree programs for the excess number of units completed.

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. Students who have withdrawn must file a request for readmission to the Graduate Division before they will be permitted to register for any courses leading to the master’s degree.

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 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 all of 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 further details, refer to the specific graduation requirements listed in the appropriate sections of Part Four of this bulletin.
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 the master's 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 Testing 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 examinations. 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, not more than 200-numbered courses, must be completed in residence. Not more than 15 units approved extension and transfer courses may be used to satisfy the minimum 30 units required for the degree. Courses required in residence are in addition to the minimum 15 units of 200-numbered courses specified by the School of Social Work and the City Planning programs. A minimum of 24 units must be completed more than seven years prior to the date on which all requirements for the degree are completed, except for students holding a master's degree provided the department or school concerned approves the substitution. 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.

Master of Business Administration degree:

Fifty-four units of 200-numbered courses specified by the School of Business Administration at least 30 of which must be completed in residence. Not more than 24 units of approved transfer credit is acceptable for this 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 to remove undergraduate deficiencies are in addition to the mini-
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, with the approval of the department or school concerned, be followed in certain graduate degree curricula as indicated in Part Four of this bulletin. Dates on which comprehensive examinations in lieu of theses are given are determined by the department or school concerned. Results on comprehensive examinations must be reported to the Graduate 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 programmed 100-numbered courses required for the removal of undergraduate deficiencies.
2. All programmed courses including courses accepted for transfer credit and courses taken concurrently with or subsequently to courses accepted for transfer.
3. All 100- or 200-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 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 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 a general prerequisite, 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. Undergraduates are not permitted to enroll in 200-numbered courses.

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 and in the Graduate Office.

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 50 minutes of recitation or lecture, together with the required preparation, or three hours of laboratory work or two hours of activities, each week for a semester of 18 weeks.
AMERICAN STUDIES

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 programs in American Studies or in disciplines emphasizing areas of American orientation, (2) plan a career in secondary or junior college teaching, or (3) are seeking a broad background for professional degrees, or business or government service.

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 with a major in American Studies, or 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 PROGRAM

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 a minimum of 30 units from courses listed below as acceptable on master's degree programs, of which at least 18 units of American studies must be in 200-numbered courses. Required courses are Humanities 180, Study 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 as a part of the minimum 30-unit program if completed by the student as the examination, administered by the American Studies Committee, in lieu of thesis. All programs will be approved by the American Studies Committee.

COMMITTEE ON AMERICAN STUDIES

R. W. Redding, Chairman
G. F. Drake
Winifred H. Higgins
Karl Keller
P. S. Morrancro
S. M. Nelson

Katherine M. Ragen
W. A. Schultz
R. G. Starr
F. N. Stites
Lowell Tozer
Pershing Vartanian

FACULTY

Coordinator of Graduate Programs in American Studies: R. W. Redding
Graduate Adviser: Members of the American Studies Committee, as assigned by the Coordinator.

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 AMERICAN STUDIES

UPPER DIVISION COURSES

(A) Literature and Philosophy:

English
130. Early American Literature (3)
131. The American Renaissance (3)
133. American Realism and Naturalism (3)
134. Modern American Fiction (3)
135. Modern American Poetry (3)
182. American English (3)
198. Comprehensive Reading and Survey (when content relates to American Studies) (3)

Philosophy
164. American Philosophy (3)

(B) History:

History
171A-171B. Rise of the American Nation (3-3)
172A-172B. Development of Federal Union (3-3)
173A-173B. Civil War and Reconstruction: The United States from Jackson to Grant (3-3)
174. The Rise of Modern America (3)
175A-175B. The United States, 1901-1945 (3-3)

175C. The United States in the Nuclear Age (3)
177A-177B. Constitutional History in the United States (3-3)
178A-178B. The Development of American Capitalism (3-3)
179A-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:

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

Geography
121. United States (3)
155. Urban Location and Settlement Geography (3)
171. Conservation of Natural Resources (3)

Political Science
105. American Political Thought (3)
116. American National Government (3)
128S. Contemporary American Politics (3)
139A-139B. American Constitutional Law (3-3)

Sociology
124. Social Stratification (3)
125. Minority Group Relations (3)
157. Urban Sociology (3)

Journalism
117. History of Mass Communications (3)
121. Current Problems in Mass Communications (3)

(D) Fine Arts:

Art
157. History of American Art (3)
APPlicable Graduate Courses

(A) Literature and Philosophy:

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

(B) American History:

241. Directed Readings in United States History (3)
251. Seminar in United States History (3)
291. Seminar: A Major Author (3)
292. Seminar: A Cultural Period (3)
293. Seminar: A Literary Problem (3)
299. Special Study (1-3)

(C) Social Science and Education:

Geography
(The geography seminars listed are acceptable when content relates to American Studies.)
295. Seminar: American Public Address, 1700-1900 (3)

Speech Communication
295. Seminar: American Public Address, 1700-1900 (3)

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

Education
202. Social Foundations (3)

(D) Fine Arts:

Art
292A-292B. Seminar in Art History (3-3)

Music
252E. Seminar in Music History: American Music (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 PROGRAM

In addition to meeting the basic requirements for the Master of Arts degree, Plan A, as described in Part Three of this bulletin, the student must complete a graduate program of at least 30 units, of which a minimum of 24 units must be selected from courses listed below as acceptable on master's degree programs. Also, students must complete the core seminars (201, 202, 203, and 204) with an overall B average. Students will be required to complete Anthropology 297, Research, and Anthropology 299, Thesis, after being advanced to candidacy. 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

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: Paul H. Ezell, Ph.D.
Coordinator of Graduate Programs in Anthropology: L. L. Leach, M.A.
Graduate Advisers:
Archaeology: P. H. Ezell, Lois K. Lippold
Physical Anthropology: S. L. Rogers, A. Sonen, Jr.
Ethnology: V. Goldkind, B. P. Sharpe
Social Anthropology: V. Goldkind, R. S. Himes

PhD. dissertators: R. J. Greenfeld, M. A. R. Greenfield, Ph.D.; Barbara Voorhies, Ph.D.

Professor: J. O. Anderson, Ph.D.; P. H. Ezell, Ph.D., Victor Goldkind, Ph.D.; S. L. Rogers, Ph.D.

Associate Professor: D. D. Whitney, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE

UPPER DIVISION COURSES

101. Human Paleontology (3)
115. Primatology (3)
122. Language in Culture (3)
124. Descriptive Linguistics (3)
149. Kinship and Social Organization (3)
150. Ethnological Field Methods (3)
1515. Ethnographic Field Research Project (6)
153. Primitive Religion (3)
155. Peasant Society and Culture (3)
156. Culture Change and Processes (3)
158. 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)
168. Evaluative Procedures in Culture and Personality (3)
170. Archaeology of North America (3)
171. Ethnology of North America (3)
172A. Southwestern Prehistory (3)
172B. Southwestern Ethnology (3)
173. Advanced Archaeological Field Methods (3)
174. Prehistoric Archaeology of Europe (3)
175. Cultures of Southeast Asia (3)
176. Early Near and Middle Eastern Civilizations (3)
177. Cultures of East Asia (3)
178. Cultures of Oceania (3)
179. Applied Anthropology (3)
180. Preclassic Cultures of Mesoamerica (3)
181. Classic Pre-Columbian Civilizations of Middle America (3)
182. Post-Conquest Cultures of Middle America (3)
183. Archaic Hellenic, Aegean, and Italian Cultures (3)
184. Archaeology of Sub-Saharan Africa (3)
185. Cultures of Sub-Saharan Africa (3)
186. Cultures of India (3)
187. Political Anthropology (3)
188A-B. Archaeological Laboratory Methods (1-3)
189. Topics in Arctic Archaeology (3)
190. Archaeology of East Asia (3)

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

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

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

203. Seminar in Ethnology (3)
Prerequisites: Anthropology 1C 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.

210. Seminar in Regional Anthropology (3)
Prerequisites: 12 units of upper division credit in anthropology.
Study of a major world region such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. Maximum credit six units applicable on a master's degree.

221. Seminar in Topical Anthropology (3)
Prerequisites: 12 units of upper division credit in anthropology.
Study of a major subdiscipline such as Political Anthropology, Economic Anthropology, Social Anthropology, Psychological Anthropology, Cultural Ecology, Applied Anthropology, Race and Variation, or Environmental Archaeology. Maximum credit six units applicable on a master's degree.

222. Historical Linguistics (3)
Prerequisites: Anthropology 120 and 124.
Principles and techniques of historical linguistics, with concentration on the dynamics of linguistic change, comparative linguistics, and historical reconstruction as applied to non-Indo-European languages.

233. Social Structure (3)
Prerequisites: 12 units of upper division credit in anthropology.
A structural and functional approach to the social organization of a wide range of cultures. An examination of theories and generalizations regarding the stability and integration of a wide variety of human societies.

255. Culture and Society in the Nahua Area (3)
Prerequisites: Anthropology 1B or 1C and 12 units of upper division credit in anthropology.
A course design to permit concentrated studies of the area and those related to it, based on archaeology, aboriginal records, colonial accounts, and modern studies; and to permit various approaches to such studies.

256. Cultures and Societies in Southern Meso-America and Central America (3)
Prerequisites: Anthropology 1B or 1C and 12 units of upper division credit in anthropology.
Concentrated studies of ancient civilization in areas of higher development, based on archaeology, aboriginal records, colonial accounts, and recent studies; and to permit various approaches to such studies.

257. Classical Nahua (3)
Prerequisites: Anthropology 1B or 1C and 12 units of upper division credit in anthropology including Anthropology 157, or 160, or 181; reading knowledge of Spanish recommended.

258. Ethnoscience (3)
Prerequisites: 12 units of upper division credit in anthropology.
Analysis and comparison of native categories, classifications, and bodies of systematic knowledge as demonstrated in preliterate and literate societies.

Graduate Advisers:
Archaeology: P. H. Ezell, Lois K. Lippold
Physical Anthropology: S. L. Rogers, A. Sonen, Jr.
Ethnology: V. Goldkind, B. P. Sharpe
Social Anthropology: V. Goldkind, R. S. Himes

PhD. dissertators: R. J. Greenfeld, M. A. R. Greenfield, Ph.D.; Barbara Voorhies, Ph.D.

Professor: J. O. Anderson, Ph.D.; P. H. Ezell, Ph.D., Victor Goldkind, Ph.D.; S. L. Rogers, Ph.D.

Associate Professor: D. D. Whitney, Ph.D.
267. Contemporary Theory in Cultural Anthropology (3)
Prerequisite: 12 units of upper division credit in anthropology.
Contemporary theoretical developments in cultural anthropology: an examination of proposed conceptual frameworks, methodologies, hypotheses, and theories. Analysis of recent literature, with evaluation oriented toward significance for research.

266. South Asian Society (3)
Prerequisite: Anthropology 186 or substantial background in upper division courses in the social sciences dealing with South Asia.
The structure and dynamics of both rural and urban aspects of contemporary South Asian society and culture. Examination of their constituent elements and socioeconomic processes, e.g., social organization, religion, acculturation, and rural-urban differences.

297. Research (3)
Prerequisite: Advancement to candidacy.
Independent investigation in the general field of the thesis.

298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study directed toward the preparation of a paper upon a specific problem. Six units maximum credit.

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

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 of a minimum of 30 units, which includes a concentration consisting of at least 18 units in art from courses listed below as acceptable on master's degree programs in art, of which at least 12 units must be in 200-numbered courses. Art 290 and Art 299 are required courses. Not more than a total of 6 units in Art 298, Special Study, will be accepted.

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

THESES 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.

FACULTY

Chairman, Department of Art: J. H. Dirks, M.F.A.
Graduate Advisor: JoAnn L. Tanzer (Coordinator); W. F. Bowne; J. H. Dirks; Winifred H. Higgins
Credential Adviser: J. D. Swiggett


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ART

UPPER DIVISION COURSES

100A-100B. Advanced Drawing (3-3)
100C-100D. Printmaking (3-3)
107. Contemporary Environmental Graphics (3)
111A-111B. Industrial Design (3-3)
112A-112B. Design and Composition (3-3)
113A-113B-113C-113D. Advanced Design (3-3-3-3)
114A. Graphic Communication (3)
114B-114C. Advanced Graphic Communication (3-3)
114D. Problems in Graphic Communication (3)
115A-115B-115C-115D. Life Drawing (3-3-3-3)
116A-116B-116C-116D. Advanced Painting (3-3-3-3)
117A-117B-117C-117D. Advanced Sculpture (3-3-3-3)
118A-118B. Advanced Watercolor Painting (3-3)
119A-119B-119C. Ceramics (3-3-3)
120A-120B. Advanced Design (3-3)
125A-125B. Intaglio Printmaking (3-3)
127. Advanced Figurative Sculpture (3)
129A-129B. History of Ceramics (3-3)
135A-135B-135C. History and Theory of Environmental Design (3-3-3)
136A-136B. Lithography Printmaking (3-3)
151. The Art of Middle America (3)
152A. The Art of India and Southeast Asia (3)
152B. The Art of Persia and the Islamic World (3)
153. Ancient Art (3)
154. Medieval Art (3)
155A. Renaissance Art (3)
155B. Baroque and Rococo Art (3)
156A. History of Modern Art (3)
156B. Contemporary Art (3)
157. History of American Art (3)
158. Art of Primitive Peoples (3)
160. The History of Architecture (3)
161A-161B-161C-161D. Design in Enamels (3-3-3-3)
164. History of Costume (3)
170B. Jewelry and Metalwork (3)
170C-170D. Jewelry and Metalwork (3-3)
180A-180B-180C-180D. Advanced Weaving (3-3-3-3)
181. Nonwoven Textile Construction (3)
191A-191B. Gallery Exhibition Design (3-3)
191A-191B. Drawing and Illustration for Graphic Communication (3-3)
195A. Interior Design (3)
195B. Environmental Design (3)
195C. Economics of Interior Design (3)
195D. Advanced Interior Design (3)
196A-196B. Visual Communication Media (3-3)
197. Exploration in Visual Imagery (2)

GRADUATE COURSES

206A-206B. Creative Printmaking (1-3)
Advanced creative work in selected printmaking media based upon the analysis of the history and philosophies of printmaking from its inception through contemporary concepts. Maximum credit six units applicable on a master's degree.

214. Creative Graphic Communication (1-3)
Prerequisite: Art 114D.
Advanced individual study in graphic design. Maximum credit six units applicable on a master's degree.

216A-216B. Creative Painting (1-3)
Prerequisites: Art 112A, 112B, 116A, and 116B.
Aesthetic organization of selected visual subject matter in the medium of colors in oils. Maximum credit six units applicable on a master's degree.

217A-217B. Creative Sculpture (1-3)
Prerequisites: Art 117A, 117B, 117C, 117D.
Aesthetic organization of selected subject matter in the medium of sculpture. Maximum credit six units applicable on a master's degree.
219A·219B. Creative 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.

222. Art Education Colloquium (3)
Prerequisite: Minimum of 14 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 the design and execution of textile designs. 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 (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. Seminar in Creative Art. (3)
Independent research in specified areas including the presentation of a paper with an 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·292B. Seminar in Art History (3-3)
Prerequisite: Art 50A and 50B.
An intensive study of the development of art styles in selected historical periods.

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

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

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

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

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 has excellent equipment, including a 24-inch reflecting telescope, two 16-inch reflecting telescopes, an 8-inch photographic refractor of long focus, and several other telescopes, ranging from 6-to 12-inch in aperture. Research is centered about photometric work, and research projects are being carried out in the areas of eclipsing binaries. A modern photoelectric photometer with both UV and visual 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 6,100 feet, has been acquired. A 16-inch Boller and Chivens reflecting telescope with photometer and digital read out is in operation. During the next few months it is planned to have the 24-inch telescope in operation at the off-campus station.

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 over-all 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 297, 298, and 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 a number 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 Professor: C. T. Daub, Ph.D.
Assistant Professors: R. S. Angione, M.S.; F. D. Talbert, Ph.D.; Arthur Young, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ASTRONOMY

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

Mathematics
118A-118B. Advanced Mathematics for Engineering Students (3-3)
119. Differential Equations (3)
121A-121B. Advanced Calculus (3-3)
124. Vector Analysis (3)
130A-130B. Statistical Methods (3-3)
135A-135B. Numerical Analysis (3-3)
140A-140B. Mathematical Statistics (1-3)
170. Partial Differential Equations (3)
175. Functions of a Complex Variable (3)
Any graduate course in Mathematics.

Physics
106. Optics (3)
110. Electricity and Magnetism (3)
112. Thermodynamics and Kinetic Theory (3)
111. Astronautics (2)
114. Nuclear Physics Laboratory (3)
115. Nuclear Physics (3)
116. Digital Computers (3)
117. Stellar Interiors (3)
118. Stellar Atmospheres (3)
120. Galactic and Extragalactic Structures (3)
125. Stellar Interiors (3)
126. Stellar Atmospheres (3)
127. Galactic and Extragalactic Structures (3)
128. Stellar Interiors (3)
129. Stellar Atmospheres (3)
130. Galactic and Extragalactic Structures (3)
131. Stellar Interiors (3)
132. Stellar Atmospheres (3)
133. Galactic and Extragalactic Structures (3)
134. Stellar Interiors (3)
135. Stellar Atmospheres (3)
136. Galactic and Extragalactic Structures (3)
Any graduate course in Physics.

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

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 112B, Physics 101 and 112.
Emission and absorption of radiation, continuous spectra, spectral lines, modal stellar atmosphere calculations, and non-L.T.E. problems.

260. 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.

270. Research (Credit to be arranged)
Prerequisite: Classified graduate standing.
Research in one of the fields of astronomy. Maximum credit six units applicable on a master's degree.

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

290. 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 within the Department of Biology, 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 offer graduate study leading to the degrees of Master of Arts in Biology and Master of Science in Biology.

SECTION I. MASTER'S DEGREE PROGRAMS

The Master of Arts degree is considered to be essentially an academic degree which is planned to serve as a stepping stone for a higher degree, if the student 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: 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, and has acquired an acreage in the Camp Elliott area for field work.

ADMISSION TO THE GRADUATE DIVISION

In addition to the general requirements for admission to the Graduate Division, 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, and at least 24 units in the biological sciences;
(b) have a grade point average of 3.0 or better in upper division courses (at least 24 units) in the biological sciences;
(c) have a score above the 45th 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;
(d) be considered as capable of graduate work in the biological sciences by two references submitted to the Biology Coordinator of Master's Degree Programs;
(e) 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 six 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, 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 enter the joint doctoral program by filing an application with the Graduate Adviser. The application must be approved and signed by the Graduate Adviser before the student is formally 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 Life Sciences, 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 each of the two campuses. The definition of residence must be in accord with the regulations of the University of California, Riverside, and San Diego State. 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 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, as described in the current announcement in the program for the degree of Doctor of Philosophy in Ecology at the University of California, Riverside, and San Diego State. The Chairman of the Joint Qualifying Committee must be a member of the ecology group on either campus. The Committee will report the results of the qualifying examination to both 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 to the Graduate Dean, University of California, Riverside, and after approval by both the Graduate Dean, University of California, Riverside, and San Diego State, 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 Advisers and appointed jointly by the Graduate Councils of the cooperating institutions. This committee will be composed of an appropriate number of faculty members from each cooperating institution. The Chairman of the Joint Dissertation Committee must be the dissertation research advisor.

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 now in force at University of California, Riverside, must be met, including provisions for microfilming, and such others as may be decided by the Graduate Council, 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 San Diego State, 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, 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 Registrars of the two institutions. A student in residence on one of the campuses will be subject to all rules and regulations governing graduate students in the Graduate Division at the cooperating institutions.

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

STAFF

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

University of California, Riverside:
Graduate Adviser: Irwin W. Sherman

San Diego State:
Graduate Adviser: William E. Hazen
GENETICS

Graduate studies for the joint Doctor of Philosophy degree in Genetics should be oriented toward the development of the capacity for independent, imaginative, and self-critical research and toward excellence and enthusiasm in teaching. By
ance is to be placed on informal instruction through increasing close association
ademic background, and becoming familiar with the research activities of the
aties, 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
the specific fields best represented are population genetics, radiation genetics,
fields are population genetics, evolution, biochemical and developmental genetics.

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 biology generally, are helpful and will often reduce the time required for the
to the degree program in genetics.

Students in the joint doctoral program in genetics will follow the following

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 Cali-
San Diego State. In seeking admission to the two Graduate Divisions, the applicant
must follow the procedures stated in this bulletin and comply with the admission
Catalogue, Chapter III, 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
program by filing an application with the Graduate Adviser. The appli-
ciled to the Graduate Deans for formal certification of admission. This request must be
the Graduate Deans to the Graduate Adviser of the two Graduate Divisions. The chair-
man of the Joint Qualifying Committee must be a member of the

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

EXEcutIVE COMMITTEE

During his first quarter or semester the student will be interviewed by the Exe-
utive Committee of the Genetics Group on the campus of residence. The
name 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

The Advisory Committee will provide a source of consultation for the student
and 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 prepared for the Qualifying
Examination, the Chairman of the Advisory Committee will notify the Graduate
Advisers of the two Genetics Groups that the student is ready to proceed and will
request the appointment of the Joint Qualifying Committee to conduct the Qual-
ifying Examination. This request must include a report that the foreign language
requirement, if recommended by the Advisory Committee, has been satisfied.

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.

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 Uni-
versity 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 Gradu-
ate Councils jointly. The Joint Qualifying Committee will conduct an oral qualify-
ing examination, consisting of questions in five fields, as described in the program
for the Doctor of Philosophy degree in Genetics at University of California, Berke-
ley. 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,
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
Deans. This committee is to be composed of an appropriate number of faculty
members from each of the cooperating institutions. One member of the committee is
normally drawn from outside the two Genetics Groups. The chairman of the
Joint Thesis Committee must be a member of the Genetics Groups at either

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 for the thesis and dissertation may be found in the Graduate Division at that institution.

The requirements for independent investigation, which is to be conducted in collaboration with the Graduate Division at the University of California, Berkeley, are in force at the University of California, Berkeley, and must be met, including provisions for microfilming, 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 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 thesis. A student with an acceptable 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 will be maintained by the Registrar, University of California, Berkeley, 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, Berkeley, 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 must be addressed to the Graduate Dean at either of the two campuses.

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 will be entered into the Graduate Division at that institution.

The requirements for completing and filing the thesis, including the number of copies required, will be decided jointly by the Graduate Deans. Requirements for the thesis and dissertation may be found in the Graduate Division at that institution.

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 Group 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 Friisrom, Alec D. Keith
Principals: Spencer W. Brown, Donald R. Cameron, Everett R. Dempster, Seymour Fogel, James Friisrom, Alec D. Keith, I. Michael Lerner, William J. Libby, Jr., Patricia S. Lawrence, Curt Stemm.

San Diego State:

Graduate Adviser: Adela S. Baer

ASSISTANTSHIPS

Graduate teaching assistantships and graduate non-teaching assistantships in biology are available to a limited number of qualified students. Application blanks and Graduate Program.

FACULTY

Chairman, Department of Biology: J. W. Neel, Ph.D.
Chairman, Department of Botany: H. L. Wedberg, Ph.D.
Chairman, Department of Microbiology: W. L. Baxter, Ph.D.
Chairman, Department of Zoology: R. E. Etheridge, Ph.D.

Graduate Coordinator, Ecology: W. E. Hazen, Ph.D.
Graduate Coordinator, Genetics: Adela S. Baer, Ph.D.
Coordinator, Master's Degree Programs: Adela S. Baer, Ph.D.
Graduate Departmental Advisers for General Counseling:

Biology, Ecology: G. W. Cox
Genetics and Developmental Biology: Adela S. Baer
Physiology: J. A. Parsons
Botany: H. L. Wedberg
Zoology: Invertebrate Zoology: Deborah M. Dexter

Credentia Adviser: G. P. Sanders


Lecturer: B. J. Kaston, Ph.D.
### COURSES ACCEPTABLE ON MASTER’S DEGREE PROGRAMS

#### UPPER DIVISION COURSES

**Biology**

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<td>102</td>
<td>General Cytology (4)</td>
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<tr>
<td>103</td>
<td>Regional Field Studies in Biology (1-3)</td>
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<td>Ecology (4)</td>
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<td>Biological Oceanography (4)</td>
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<td>Advanced Ecology (3)</td>
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<td>Systems Ecology (5)</td>
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<td>116</td>
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<td>Simulation of Ecological Systems (4)</td>
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<td>Marine Invertebrates Zoology (4)</td>
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<td>Advanced Entomology (4)</td>
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<td>General Entomology (4)</td>
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<td>Marine Biology (4)</td>
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<td>Marine Mammalogy (4)</td>
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<td>Marine Ichthyology (4)</td>
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<td>Marine Molluscs (4)</td>
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<td>Marine Parasitology (4)</td>
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<td>Pathogenic Bacteriology (4)</td>
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<td>103</td>
<td>Fundamentals of Immunology and Serology (4)</td>
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<td>Medical Mycology (4)</td>
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<td>Microbial Physiology (4)</td>
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<td>Electron Microscopy (4)</td>
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**Zoology**

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<td>Invertebrate Embryology (3)</td>
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<td>Comparative Anatomy of the Vertebrates (4)</td>
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<td>108</td>
<td>Histology (4)</td>
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<td>Parasitology (4)</td>
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<td>Experimental Immunology (4)</td>
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<td>Plant Anatomy (4)</td>
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<td>142</td>
<td>Experimental Animal Surgery (2-3)</td>
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<td>145</td>
<td>Principles of Taxonomy, Systematics and Phylogeny (3)</td>
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<td>148</td>
<td>Vertebrate Paleontology (3)</td>
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<td>150</td>
<td>Animal Behavior (4)</td>
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<td>151</td>
<td>Neurobehavior (4)</td>
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**Botany**

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<td>Mycology (4)</td>
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<td>103</td>
<td>Vascular Plants (4)</td>
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<td>111</td>
<td>Cultivated Trees and Shrubs (3)</td>
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<td>114</td>
<td>Systematic Botany (4)</td>
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<td>121</td>
<td>Plant Pathology (4)</td>
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<td>130</td>
<td>Plant Physiology (4)</td>
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**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.

- **Cellular Physiology** (2)
  - Prerequisites: Biology 101 and consent of instructor. Maximum credit four units applicable on a master’s degree.

- **Developmental Biology** (2)
  - Prerequisite: Biology 156.
  - May be repeated with new content. Maximum credit four units applicable on a master’s degree.

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

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

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

**231. Seminar in Ethology and Comparative Psychology** (3)
- (Same course as Psychology 231)
- Prerequisite: Biology 110 or Psychology 114.
- Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master’s degree.

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

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

**242. Population and Community Ecology** (3)
- Two lectures and three hours of laboratory.
- Prerequisite: Biology 110.
- Formulation, analysis, and experimental testing of the theories of the structure and dynamics of ecological systems at the population and community level.

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

**244. Physical Aspects of Ecology** (3)
- Prerequisite: Biology 110.
- Two lectures and three hours of laboratory.
- Analysis and measurement of physical factors of the environment and of the processes by which energy and matter are exchanged between organisms and the environment; the significance of the physical environment in ecological processes.

**245. Aquatic Ecology** (3)
- Prerequisites: Biology 110 and consent of instructor.
- Two lectures and three hours of laboratory.
- Ecological concepts as applied to benthic and pelagic population and communities in fresh water and marine environments.

**246. Behavioral Ecology** (3)
- Two lectures and three hours of laboratory.
- Prerequisite: 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.

266. Seminar in Genetics (2)
Prerequisite: Biology 155.
Maximum credit four units applicable on a master's degree.

267. Radiation Genetics (3)
Two lectures and three hours of laboratory.
Prerequisites: Biology 150A, 155. Recommended; Physics 121.
Basic principles of ionizing and nonionizing radiations with special emphasis on involvement of genetic systems at all levels of biological organization.

268. Physiological Genetics (3)
Prerequisites: Biology 155 or 159; Chemistry 12.
Recommended: Chemistry 115A-115B.
Biochemical aspects of genetics of microbial and human systems.

269. 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.

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

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

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

273. 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.

274. 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 (3)
Prerequisite: Microbiology 101 or consent of instructor.
May be repeated with new content. Maximum credit four units applicable on a master's degree.

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

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

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

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

270. Biology of Animal Pathogenic Fungi (4)
Three lectures and three hours of laboratory.
Prerequisites: Microbiology 103, 104 and 105; Botany 102; and Chemistry 115B, Biology 110 and 115 recommended.
Physiological, cytological, genetical, and ecological factors relating to pathogenesis of the fungi-causing diseases in man and other animals.

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

272. Advanced Pathogenic Bacteriology (4)
Three lectures and three hours of laboratory.
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.

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.

292. Thesis or Project (3)
Research in one of the fields of microbiology.
Maximum credit six units applicable on a master's degree.

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

295. 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.

202. Seminar in Vertebrate Morphology (2)
Prerequisite: Biology 106.
An intensive study in advanced zoology, topic to be announced in the class schedule. Maximum credit four units applicable on a master's degree.

203. Seminar in the Biology of Endothermic Vertebrates (2)
Prerequisite: Zoology 60 or 106.
Biology of endothermic animals. Maximum credit four units applicable on a master's degree.

204. 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.

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

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

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

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

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

GENERAL INFORMATION

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

The Master of Business Administration degree is designed to provide a broad foundation in business for the student with a non-business undergraduate degree. The Master of Science degree in Business Administration is designed to provide for additional education and specialization in business subjects for the student with a master's degree program with a major in business administration has 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 government organizations provides opportunities for research and observation for graduate students. The continued professionalization of the business executives' responsibilities has created many opportunities for the student with an advanced degree in business administration.

BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research is an organized research activity serving the needs of the School of Business Administration and the Department of Economics. Operationally, it is a part of the School of Business Administration, and 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 local businesses and organizations for conducting specific research projects; (3) facilitate cooperative arrangements with outside individuals and organizations conducting research; and (4) publish the results of Bureau research investigations and aid the 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 be admitted to the Graduate Division with classified graduate standing by the Office of Admissions and 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 consult the Office of Admissions 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 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 four 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

To be eligible for advancement to candidacy for this degree, the student must have completed at least 24 units from his official program with a grade point average of 3.0 or higher. He must also meet the scholastic, professional, and personal standards of the Graduate Division and of the School of Business Administration, and otherwise comply with the regulations of the Graduate Division as described in Part III of this Bulletin under Advancement to Candidacy. In addition, the School of Business Administration must recommend to the Graduate Division that the student be advanced to candidacy to assure that all requirements of that School have been met.

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 study consisting of at least 54 units of 200-numbered courses. In the event that the student has met the requirements of a given course by previous course work he will substitute another 200-numbered course. All courses accepted for transfer must be strictly graduate courses and equivalent to those required as a part of the degree.

At least 30 of the required 54 units must be completed in residence at San Diego State, and at least 24 units of program courses must be completed after advancement to candidacy. In completing the program, all students must:

1. Complete 36 units of core courses as follows:

   B.A. 200. Financial Accounting (3)
   B.A. 201A-201B. Business Organization and Management (3-3)
   B.A. 202A-202B. Quantitative Methods (3-3)
   B.A. 203. Marketing (3)
   B.A. 204. Law for Business Executives (3)
   B.A. 205. Financial Principles and Policies (3)
   B.A. 208. Managerial Accounting (3)
   B.A. 209. Marketing Principles (3)
   B.A. 210. Economic Analysis (3)
   B.A. 211. Accounting Information Systems (3), in an area other than accounting Theory (3); 3 units of approved electives in an area other than accounting.


3. Complete one of the concentrations listed below.

b. Employee Relations: B.A. 240, Employee Relations (3); B.A. 249, Seminar in Employee Relations (3); two courses selected from B.A. 241, Business and Labor (3), B.A. 242, Wage Theory and Administration (3), and B.A. 243, Management Development (3); 3 units of electives in an area other than employee relations.

c. Finance: B.A. 223, Seminar in Business Finance (3); B.A. 229, Seminar in Financial Markets (3); 9 units of electives.

d. Management: B.A. 284, Policy Formulation (3); B.A. 289, Seminar in Organization and Management (3); two courses selected from B.A. 281, Behavioral Science for Management (3), B.A. 282, Group Processes and Leadership (3), and B.A. 283, Origin and Nature of American Business (3); 3 units of electives in an area other than management.

e. Marketing: Nine units selected from B.A. 270, Seminar in Marketing and the Economy (3), B.A. 271, Seminar in Marketing Theory (3), B.A. 272, Marketing Institutions (3), B.A. 273, Seminar in Marketing Price Policy (3), B.A. 274, Seminar in Sales Management (3), and B.A. 279, Market Analysis and Research (3); 6 additional units, at least 3 of which are to be in an area other than marketing.

f. Office Administration: B.A. 273, Data Systems and Automation (3); B.A. 278, Seminar in Management of Information Systems (3); B.A. 279, Seminar in Data Systems Design (3); 6 units of electives, of which 3 must be outside of the office administration area and 3 must be in fields other than business administration and economics.

g. Production and Operations Management: B.A. 230, Production and Operations Management (3); B.A. 231, Advanced Methods Engineering and Work Measurement (3); B.A. 234, Seminar in Production and Operations Management (3); B.A. 234, Quality Control (3), or B.A. 233, Inventory and Production Control (3); 3 units of electives in an area other than production management.

4. Not more than a total of 6 units in Courses 297, Research, and 298, Special Study, will be accepted for credit toward the degree.

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.

MASTER OF SCIENCE DEGREE IN BUSINESS ADMINISTRATION

ADMISSION TO THE DEGREE CURRICULUM

In addition to meeting the requirements for classified graduate standing as described above, and in Part Three of this bulletin, the student must have successfully 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, and Business Administration 30B, Business Law, or Business Administration 318, Advanced Business Law, or Business Administration 83, Information Processing and Computer Programming (3 units)
Business Administration 132, Fundamentals of Management (3 units)
Business Administration 150, Marketing Principles (3 units)
Business Administration 127, Fundamentals of Finance, or Economics 115, Money and Banking (3 units)

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 Dean, School of Business Administration.

ADVANCEMENT TO CANDIDACY

All students must satisfy the general requirements for advancement to candidacy, as described in Part Three of this 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 298, Thesis, is required. Economics 201, Economic Analysis, is required unless the student has completed Economics 100A or 100B 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:

1. Accounting
2. Employee Relations
3. Finance
4. Information Systems
5. Management
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: T. R. Wotruba, Ph.D.
Chairman, Department of Accounting: W. W. Harred, Ph.D.
Chairman, Department of Finance: W. A. Nye, Ph.D.
Chairman, Department of Information Systems: E. C. Archer, Ed.D.
Chairman, Department of Management: L. H. Peters, Ph.D.
Chairman, Department of Marketing: D. A. Lindgren, Ph.D.
Graduate Advisers:
Accounting: V. E. Odmark
Employee Relations: D. W. Belcher
Finance: H. H. Fisher, W. W. Reints
Information Systems: R. G. Langenbach
Insurance: C. R. Smith
Management Science: Oliver Galbraith, W. R. Sherrard
Marketing: John McFall
Office Administration: M. L. Crawford, L. A. Pemberton
Production and Operations Management: Oliver Galbraith, A. L. Srbich
Real Estate: W. H. Hippaka


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN BUSINESS ADMINISTRATION

GRADUATE COURSES

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

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

201A. Business Organization and Management (3-3)
Functions, role, and relationships of business organizations; theories of management; decisions, dilemmas, and human values in industrial societies.

201B. Quantitative Methods (3-3)
In 201A: Measures of central tendency and variation, sampling and various statistical tests such as analysis of variance, t-tests, and chi-squared tests. Simple and multiple correlation and regression techniques such as factorial analysis, correlation analysis, and Markov chain analysis.

202. 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.

203. Law for Business Executives (3)
Development significance and interrelationships of law and business. Analysis of essential aspects of law pertaining to business including employment and business, government regulation of business and labor.

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

205. 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.

206. Research and Reporting (3)
Prerequisite: Business Administration 203A. Principles of research design and data accumulation. The analysis and effective presentation of data related to business and industry.

207. 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 planning and control.

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 related to the measurement, determination, and presentation of enterprise 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 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 bulletin 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)

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

216. Legal Aspects of Labor-Management Relations (3)
Legal aspects of union organizational activities, representation proceedings, unfair labor practices, collective bargaining and contracts, grievances and arbitration, strikes, picketing, boycotts and injunctions.

217. Insurance Principles and Practices (3)
Nature and extent of personal, business, and social risk. Risk handling techniques; insurance principles and practices; basic contracts analyses; insurance underwriting and rating; insurance problems and trends; personal and business risk management.

218. Principles of Real Estate (3)
Functions and regulation of the real estate market, real estate finance, property management, real estate appraisal theory, specialized properties, urban development, and contemporary real estate problems.

219. Seminar in Business Finance (3)
Prerequisite: Business Administration 205. Application of principles of finance to current problems in financial management, with emphasis on planning and development of tools for use in decision making. Consideration of case materials, study of the literature, and development of individual student reports.

220. Seminar in Insurance (3)
Prerequisite: Business Administration 221. Risk management in effective business operations. Programing of personal and business risk problems. Insurance institutions.

221. Seminar in Real Estate (3)
Prerequisite: Business Administration 222. Current problems in real property. Regional land use planning.
239. Seminar in International Finance (3)
Prerequisite: Business Administration 205.
International finance applied to the business firm.

240. 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.

241. Production and Operations Management (3)
Prerequisite: Business Administration 202B.
Theory, concepts and decision analysis related to effective utilization of major
factors of production in manufacturing and service industries. Utilizes the system
and synthesis. Not open to students who have credit for a basic course in pro-
duction management.

242. Advanced Methods Engineering and Work Measurement (3)
Prerequisite: Business Administration 210.
Analysis and solution of plant management problems using multiple operation
analysis and advanced work measurement techniques (M.T.M., Work Factor
System, and others). Relation of production to other functions.

243. Quality Control (3)
Prerequisite: Business Administration 210.
Statistical techniques for controlling quality, reliability and maintainability, types
of control and limit charts.

244. Inventory and Production Control (3)
Prerequisite: Business Administration 210.
The design and analysis of single and multi-product control systems.

245. Seminar in Production and Operations Management (3)
Prerequisite: Business Administration 241.
Industrial risk and forecasting, diagnosis of industrial problems; production pol-
cies and organization; determination of production methods; coordination of pro-
duction activities. (Formerly numbered Business Administration 221A.)

246. Operations Research (3)
Prerequisite: Business Administration 202A and concurrent registration in 202B.
Network analysis, learning curves, PACE, line of balance, gamma and beta
distributions and dynamic programming. (Formerly numbered Business Admin-
istration 212.)

247. Computer Implemented Optimum-Seeking Methods (3)
Prerequisite: Business Administration 246.
Programming and simulation techniques for analysis of interlocking decision
problems with and without the use of computers. Derivation of man, machine,
and system models. Design of steady state and dynamic stochastic models.

248. Management Systems and Simulation (3)
Prerequisite: Business Administration 246.
The testing and design of input-output management decision systems. Simulation
and heuristic techniques are used to evaluate and improve the model. Empirical
data will be used where possible.

249. Seminar in Management Science (3)
Prerequisite: Business Administration 246.
Analysis by quantitative techniques for managerial planning and decision-making.
(Formerly numbered and entitled Business Administration 220B.)

250. Employee Relations (3)
Prerequisite: Business Administration 202B.
Analysis of theories and factors underlying managerial policies and practices in-
volving employees.

251. Management Development (3)
Prerequisite: Business Administration 240.
Analysis of the role of unions in the modern business community, with special
attention to the impact of union policies on management.

252. Wage Theory and Administration (3)
Prerequisite: Business Administration 240.
Wage theory, factors, and criteria important in determination of wage rates.
Wage structure, payment methods, and other compensation relating to the business
firm.

253. Management Development (3)
Prerequisite: Business Administration 240.
Management development programs; organization, administration, development,
and evaluation.

254. Seminar in Employee Relations (3)
Prerequisite: Business Administration 240.
Factors underlying managerial policies and programs in employee relations.

255. Seminar in Marketing and the Economy (3)
Prerequisite: Business Administration 203.
Advertising, selling, sales promotion, and merchandising as they relate to society,
business and the economy.

256. Seminar in Marketing Theory (3)
Prerequisite: Business Administration 203.
Marketing theory and contributions of economics and behavioral sciences to
marketing thought.

257. Marketing Institutions (3)
Prerequisite: Business Administration 203.
Analysis of development of wholesaling and retailing and of growth, change,
and efficiency of these institutions in the American and other economies.

258. Seminar in Marketing Price Policy (3)
Prerequisite: Business Administration 203.
Study of pricing strategy and price determination in business organizations.

259. Seminar in Sales Management (3)
Prerequisite: Business Administration 203.
Sales management and personal selling decisions and strategies in business organi-
zations.

260. Market Analysis and Research (3)
Prerequisites: Business Administration 203 and 202B.
Application of statistical and mathematical methods to market problems, con-
sument research, and product analysis.

261. Seminar in Business Education (3)
Study of some phase of business education, such as administration and supervi-
sion, distributive and basic business education, trends in and methods of teaching
shorthand and typewriting. May be repeated with new content. Maximum credit
six units applicable on a master's degree.

262. Data Systems and Automation (3)
Prerequisite: Business Administration 202A.
Principles and techniques used in formulating, installing, and operating integrated
electronic data processing systems, including computer applications to typical
automated data processing problems.

263. Seminar in Management of Information Systems (3)
Prerequisite: Business Administration 273.
Advanced information systems. Emphasis on current managerial trends and develop-
ments and on individual student research.
279. Seminar in Data Systems Design (3)
Prerequisite: Business Administration 273.
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 policies, and other significant issues.

284. Policy Formulation (3)
Prerequisite: Business Administration 201B.
Building and maintaining enterprises in our society; determining objectives; decisional activities; reappraising objectives and policies on the basis of new developments.

285. Seminar in Business Planning (3)
Prerequisites: Business Administration 201A, 203, 205, and nine units in Business Administration courses numbered 210 or above.
Factors underlying the planning systems of business enterprises: strategic decision-making, long range forecasting, and corporate planning with major emphasis on product-market relationships.

286. Seminar in Organization and Management (3)
Prerequisite: Business Administration 201B.
Analysis of problems in business and other organizations. Organization and de-emphasized.

289. Seminar in Organization and Management (3)
Prerequisite: Business Administration 201B.
Analysis of problems in business and other organizations. Organization and de-emphasized.

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: Advancement to candidacy.
Research in one of the fields of Business Administration.

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

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

### CHEMISTRY

#### GENERAL INFORMATION

The Department of Chemistry, in the College of Sciences, in cooperation with the Department of Chemistry, University of California, San Diego, offers a program of graduate study leading to the Doctor of Philosophy degree in Chemistry. This degree is awarded jointly by the Board of Regents of the University of California and the Board of Trustees of the California State Colleges in the names of the University of California, San Diego, and San Diego State College.

Graduate programs leading to the Master of Arts degree in Chemistry, the Master of Science degree in Chemistry, and the Master of Science degree in Chemistry are also offered.

The facilities, staff, and equipment of the Department of Chemistry meet the requirements of the American Chemical Society, and students obtaining the A.B. or B.S. degree with the approved curriculum are granted the A.C.S. certification. All graduate study is based on this sound undergraduate foundation. Specialized equipment is available for research projects in the well-equipped chemistry building.

#### SECTION 1. MASTER'S DEGREE PROGRAMS

##### 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 with a major in chemistry from another accredited institution should have included in the undergraduate program a year course in each of the following fields: general chemistry, analytical chemistry, organic chemistry, and physical chemistry. The course in physical chemistry must have included laboratory work. In addition, the student should have had enough specialized elective courses in chemistry to give a minimum of 24 units in upper division courses, including at least one course which has three years of chemistry as a prerequisite.

##### 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. In addition, the student must pass an orientation examination in chemistry. This examination should be taken during the first semester in residence.

#### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must complete a graduate program which includes a major consisting of at least 24 units in chemistry from courses listed below as acceptable on master's degree programs. At least 15 of these units must be in 200-numbered courses, excluding Chemistry 290, 297, and 298. Chemistry 211, 290, 291, and 290 are required. The student must demonstrate a reading knowledge of scientific German and must pass a final oral examination on his thesis.

#### 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 18 units from courses listed below as acceptable on master's degree programs in chemistry, of which at least 15 units must be in 200-numbered courses. Chemistry 290 and Chemistry 299 are required courses.
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. He must also complete a graduate program which includes a major consisting of at least 24 units in chemistry from courses listed below as acceptable toward the master's degree programs. At least 15 of these units must be in 200-numbered courses, excluding Chemistry 290, 291, 297, 298. Chemistry 211 Plan A with the thesis (in which case the program must include Chemistry 290 and 299), or Plan B with the comprehensive examination in lieu of the thesis. A student electing Plan A must pass a final oral examination at the end of the program. The student must demonstrate a reading knowledge of scientific German or Russian. The student's general grasp of chemistry must be demonstrated by the successful completion of at least seven semester units each semester of the required year's residence.

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 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. 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 the Graduate Division of the University of California, San Diego. Admission to the Graduate Division of the University of California, San Diego must be completed by faculty费 to the University of California, San Diego. This application must be completed by the Graduate Dean, University of California, San Diego, and sent to the Graduate Councils on the two campuses; (1) the development of a study plan in consultation with the student. The study plan must be approved by the Graduate Division, University of California, San Diego.

ADMISSION TO THE PROGRAM

In order that he may participate effectively in this program, the entering student must be considered on an individual basis. Requests for specific research assignments are encouraged and will be presented to the appropriate faculty members of the program. The student should be prepared to 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 are encouraged and will be presented to the appropriate faculty members of the program. The student should be prepared to and will cover the fields of analytical, inorganic, organic and physical chemistry, and mathematics.

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 Educational Testing Service examination at the 60% level (see U.C.S.D. Graduate Division, Foreign Language Requirement) and will be substituted for Russian or German through petition to the chairman. Students whose native language is not English must demonstrate the ability to read, write, speak and understand scientific English. Normally this requirement is met by satisfactory performance in the usual graduate-level courses in chemistry and in the oral qualifying 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 orientation 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 Orientation Examinations and upon his field of specialization.

When, in the judgement of the Joint Guidance Committee, the student is prepared for the Qualifying Examination and has satisfied the requirements, the Joint Guidance Committee shall 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 department of the students 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 that are appropriate. It 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 must 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 passage 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 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 his ability to make independent investigation, will be required of every candidate. In its preparation the candidate will be guided by his Joint Doctoral Committee which will pass on the merits of the completed dissertation. The requirements for completing and filing the dissertation, including the number of copies required, will be determined jointly by the Graduate Deans. Requirements now in force at the University of California, San Diego, must be met, including microfilming and all 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 affirmative votes will be required from a majority of 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 doctoral degree is not expressed in terms of units of credit or number of semesters but will ultimately depend upon the amount of time required to master the subject matter field and to complete a satisfactory dissertation.

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, Office, San Diego State. Transcripts of record will be on file in the Graduate Office, San Diego, and complete copies of these records will be issued by the Registrar, upon request.

A student in residence on one of the 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.

A student in residence on one of the 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 Departments of Chemistry of the cooperating institutions will 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
Credit Adviser: J. G. Malik


Associate Professors: M. T. Abbott, Ph.D.; J. H. Mathewson, Ph.D.; W. H. Richardson, Ph.D.; J. H. Woodson, Ph.D.
Assistant Professors: Dewitt Coffey, Jr., Ph.D.; S.B.W. Roeder, Ph.D.

Courses Acceptable on Advanced Degree Programs in Chemistry

Upper Division Courses

116A-116B. General Biochemistry (3-3)
118. Advanced Physical Chemistry (3)
127A-127B. Inorganic Chemistry (3-3)
131. Theoretical Organic Chemistry (3)
154. Organic Qualitative Analysis (3)
155. Advanced Instrumental Methods (4)
156. Quantitative Microanalysis (3)
160A-160B. Principles of Chemical Engineering (3-3)
170. Radiochemistry (3)
191. Chemical Literature (1)

Graduate Courses

200. Seminar (1 to 3)
An intensive study in advanced chemistry, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

260. Advanced Topics in Physical Chemistry (1-3)
Prerequisite: Consent of instructor.

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

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

263. Quantum Chemistry (3)
Prerequisites: Mathematics 52 and Chemistry 110B.
Quantum mechanics of atomic and molecular systems; applications to chemical bonding theory.
214. Molecular Structure (3)
Prerequisite: Mathematics 52 and Chemistry 110B.
Theory and techniques used in the determination of molecular structure.

215. Chemical Statistical Mechanics (3)
Prerequisite: Chemistry 211.
Statistical mechanics as applied to chemical systems.

216. Physical Chemistry of Electrolytic Solutions (2)
Prerequisite: Chemistry 211.
Theory of ionic solutions; electrode potentials, activity coefficients, partial molal quantities, conductance and ion association.

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

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

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

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

231. Mechanisms of Organic 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 synthesis.

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

260. Advanced Topics in Biochemistry (1-3)
Prerequisite: Chemistry 116B.
Selected topics in biochemistry. Maximum credit six units applicable on a master's degree.

261. Advanced Biochemical Techniques (2)
Prerequisite: Chemistry 116A.
Six hours of laboratory.
The laboratory application of biochemical techniques in manometry, chromatography, electrophoresis and enzymology.

270. Nuclear Chemistry (2)
Prerequisite: Chemistry 110B.
Theoretical applications of radioactivity to chemistry, radiation, chemistry, decay laws and processes, nuclear structure and reactions.

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

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

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

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

299. Thesis (3)
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
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 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: H. D. Sellman, M.S.
Graduate Adviser: G. S. Howard
Credential Adviser: C. E. Stephenson
Associate Professor: C. E. Stephenson, Ph.D.
Assistant Professors: M. L. Harvey, Ph.D.; G. S. Howard, Ph.D.; Mack Owen, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN DRAMA

UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
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<tbody>
<tr>
<td>109</td>
<td>Verse Choir Directing (2 or 3)</td>
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<tr>
<td>120</td>
<td>Play Analysis (3)</td>
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<td>121</td>
<td>Theatre Criticism (3)</td>
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<td>122</td>
<td>Playwriting, the One-Act (3)</td>
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<td>123</td>
<td>Playwriting, the Long Play (3)</td>
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<tr>
<td>127A-127B</td>
<td>Stage Direction (3-3)</td>
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<td>131</td>
<td>Advanced Acting Theory (3)</td>
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<td>132</td>
<td>Advanced Acting (3)</td>
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<td>140A</td>
<td>Scene Design (3)</td>
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<tr>
<td>140B</td>
<td>Styles in Scenic Design (3)</td>
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GRADUATE COURSES

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

An investigation of the recent developments of modern staging facilities. The application of technological advances and electro-mechanical devices to the scenic arts for theatre and television. (Formerly numbered Speech Arts 245.)

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 emphasis on the historical development of theatrical costume or scenic environment. The investigation of recent tendencies in styles and their evolution. Each section may be taken once for credit.

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.)

258. 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 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 24 units which includes a major consisting of at least 24 units in economics, of which at least 141, and either 297 or 299 are required courses. Economics 200A and 200B may be selected from courses in economics listed below or by petition to the Department Graduate Study Committee, from 100- or 200-numbered courses in fields other than economics as part of this undergraduate preparation for admission to classified graduate standing.

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. Barckley, Ph.D.
Graduate Advisers: D. C. Bridenstine (Coordinator); G. K. Anderson; George Babilot; W. H. Nam; I. Poroy
Associate Professors: L. E. Chadwick, B.S.; C. E. Jencis, Ph.D.; I. Poroy, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN ECONOMICS

UPPER DIVISION COURSES

105. Welfare Economics (3)
109. Advanced Economic Theory (3)
141. Econometrics (3)
191. International Trade Theory (3)
192. International Monetary Theory (3)
194. Capital and Growth Theory (3)

GRADUATE COURSES

200A. Seminar in Advanced Economic Theory (3)
Prerequisites: Economics 104A and 104B, or 100A, 100B, and 107.
Theory of consumer and producer behavior. Determination of prices and resource allocation patterns in a market economy; partial and general equilibrium.

200B. Seminar in Advanced Economic Theory (3)
Prerequisites: Economics 104A and 104B, or 100A, 100B, and 107.
Theory of money, employment, and income determination. Alternative theories of consumption, investment, price level and rate of interest. Causes of instability in short and long run.

201A-201B. Seminar in the Development of Economic Thought (3)
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.

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

210. Seminar in Economic History (3)
Prerequisites: Economics 110 or 111A or 111B.
Individual study and group discussion on selected topics in economic history.

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

235. Seminar in Money and Banking (3)
Prerequisite: Economics 135.
Individual research, seminar reports and group discussion of selected economic problems related to the structure and functioning of the financial system.

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

241. Seminar in Econometrics (3)
Prerequisite: Economics 141.
The construction of large economic models. Identification, causal ordering and estimation. Simultaneous-equation techniques and other selected topics.

250. Seminar in Labor Economics (3)
Prerequisite: Economics 150 or 151 or 152.
Individual study and group discussion of selected topics in labor economics.
The School of Education offers graduate study leading to the Master of Arts degree in Education with concentrations in the following: instructional media, 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 named 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 before 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.

The Qualifying Examination

The Graduate Record Examination Advanced Test in Education (Qualifying Examination) is required for advancement to candidacy for the Master of Arts degree in Education. The student is urged to take this examination at the earliest possible date in his first graduate year. For specific dates refer to the Test Office (Administration Building, Room 228). Make reservations at the Test Office, AD-228, at least four weeks prior to the date of test administration.

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 299 or Education 299A-299B are required courses. All applicants for the Master of Arts degree in Education must pass a comprehensive examination and satisfactorily complete either a thesis (Plan A) or two writing seminars (Plan B). In addition, students majoring in certain concentrations are required to verify successful teaching experience, and to satisfy requirements for advanced credentials. See below for further information regarding each of the concentrations.

ADVANCEMENT TO CANDIDACY

A student desiring a Master of Arts degree in Education with a concentration in instructional media, 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, section on master's degree, and upon satisfactory completion of the qualifying examination (see above). A student desiring a concentration in administration, supervision, or counseling, must, in addition to the above, meet specific requirements for admission to the appropriate advanced credential program. A student desiring a master's degree concentration in special education must also meet specific admission requirements. (For further information, refer to the School of Education, Office of Advanced Credentials, 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.
This year this examination will be given on November 7, 1970, and on March 11, 1971. Reservations must be made at least a week in advance in the Office of Advanced Credentials, School of Education. Room 179.

**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 establish a plan for his thesis and has secured a faculty adviser for it. Requests for transfer of students must be prepared as an official change in program for the Office of Advanced Credentials in the School of Education. 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 to pursue the doctorate. Plan B requires a comprehensive reading list and research and methods coursework, preparation of research conclusions and then presentation of the study in an adequate written form. It is expected that the two seminars will be at least as demanding as the thesis with regard to the difficulty and quantity of work required.

**Course Requirements**

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**

**Elementary Curriculum and Instruction**

The Master of Arts degree in Education with a concentration in elementary curriculum and instruction is designed to increase professional competence in the field of education. The student must complete the following:

1. **Core course requirements: (3 units)**
   - Education 211, Procedures of Investigation and Report

2. **Field Experience in Elementary Education: (6 units)**
   - Education 295A-295B, Seminar

3. **Electives (6-9 units)**
   - Selected with the approval of the advisor

4. **Research (3-6 units)**
   - Education 299, Thesis

5. **Additional required courses (3-6 units):**
   - Education 295A-295B Seminar, or Education 299, Thesis

**Secondary Curriculum and Instruction**

The Master of Arts degree in Education with a concentration in secondary curriculum and instruction is designed to enhance the applicant's professional competence in the areas of classroom teaching. Twelve units of basic education courses are prerequisite to the program. Course requirements are as follows:

1. **Core course requirements: (3 units)**
   - Education 211, Procedures of Investigation and Report

2. **Field Experience in Secondary Education: (3 units)**
   - Education 295A-295B, Seminar

3. **Electives (6-9 units)**
   - Selected with the approval of the advisor

4. **Research (3-6 units)**
   - Education 299, Thesis

**Instructional Media**

The Master of Arts degree in Education with a concentration in instructional media requires twelve units in basic education courses as prerequisites to the program, and the following courses:

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

2. **Core course requirements: (18 units)**
   - Education 240, Curriculum Construction and Evaluation in Elementary Education, or Education 250, Curricular Problems in Secondary Education
   - Education 141, Producing Instructional Material, Education 274A, Seminar in Media Utilization, Education 275A, Seminar in the Administration of Instructional Media Centers
   - A minimum of three units from the following: Industrial Arts 186, Materials and Techniques for Teaching Graphic Arts, Industrial Arts 187, Photography for Teachers, Industrial Arts 186, Advanced Photography, Education or Communications and Film 143S, Workshop in Educational Television; selected courses in Library Science, and Education 298, Special Study, and Education 375, Directed Internship

3. **Electives (3-6 units)**

4. **Additional required courses (3-6 units):**
   - Education 295A-295B Seminar, or Education 299, Thesis

**Administration and Supervision**

The concentration of school administration and supervision the master's degree is designed to provide increased knowledge and skill for the prospective administrator. This degree is built upon and coordinated with the Standard Supervision credential at either the elementary or secondary specialization levels. The student who wishes to work for this degree must complete the appropriate course requirements for this credential prior to, or concurrently with the receipt of the degree.

Course requirements follow:

1. **Prerequisites:**
   - Possession of (1) a valid standard teaching credential, standard designated subject 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)**
   - Education 260, Principles of School Administration
   - Education 261, Educational Leadership
   - Education 262, Legal and Financial Aspects of School District Policies
   - Education 263, (or Education 240 or Education 250), Curriculum Development and Evaluation

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

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

6. **Electives (3-6 units)** selected with the approval of the advisor

Advanced semesters require admission to the program of Administration and Supervision, Department of Education and Supervision. For further information the student is referred to the Office of Advanced Credentials, 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.

Special Education

The Master of Arts degree in Education with a concentration in special education is designed to assist the applicant in improving performance in his roles as a classroom teacher. With advisor's approval, in this 30-unit program, upper to 12 units in the elementary, secondary and special education departments, and related academic departments.

1. Prerequisite: A basic background in education (minimum of 12 units) to include such courses as curriculum and methods, educational psychology, growth and development, and history and philosophy of education.

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

3. Core program (9 units) to include: Education 220, Advanced Educational Psychology; Education 270, Seminar in Education of Exceptional Children; and a 200 level education course in area of specialty.

4. Electives selected with advisor's approval.


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.

1. Prerequisite: A basic background in education (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 220, Seminar in Educational Measurement; Education 215, Quantitative Methods in Education; Education 212, Research Design; Education 211, Advanced Quantitative Methods in Education.


5. Education 299, Thesis.

MASTER OF SCIENCE IN COUNSELING 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. In addition, the student must be admitted to the Counselor Education Program. For further information, refer to the Office of the Department of Counselor Education, School of Education, Room 179.

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.

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, 295A, and 295B or equivalent.

2. At least nine units of work from each of the following groups of courses:


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 continued good standing in the Counselor Education Program (for further information, refer to the Department of Counselor Education, School of Education, Room 179).

The Comprehensive Examination

Plan B will be required. The student must demonstrate satisfactory performance on a comprehensive written examination in lieu of a thesis, prepared by the Department of Counseling and Guidance.

This year this examination will be given on November 7, 1970, and on March 13, 1971. Reservations must be made at least a week in advance in the Office of Advanced Credentials, 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 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 STANDARD TEACHING CREDENTIAL WITH A SPECIALIZATION IN JUNIOR COLLEGE TEACHING

Admission Requirements

Students holding an appropriate master's or higher degree must, in addition, be admitted to the credential program before they are eligible to take the professional education courses. Students who plan to obtain the master's degree and this credential must be admitted to the Graduate Division and must, in addition, be admitted to the credential program.

The requirements for admission to the credential program are essentially the same as those for secondary teaching credentials except that applicants must hold the bachelor's degree. For additional information, see the Coordinator of Junior College Programs, Room 124, Education Building.

The basic requirement for the credential is only the obtaining of a master's degree, preferably in an academic area which is taught in a junior college. However, it is urged that candidates enroll in the professional courses in teacher education in order to enhance their employment possibilities, as most junior colleges require professional preparation and experience. A teaching minor, although not required, is highly desirable. (A minor is defined as a minimum of twelve semester hours of upper division courses in an academic field.)

Basic Requirements

To qualify for The Standard Teaching Credential with a Specialization in Junior College Teaching at San Diego State a student must:

(a) Hold a master's degree or a higher degree in a subject matter field commonly taught in a junior college; or
(b) Hold a master's degree in a non-academic subject and a teaching minor of 20 units in a single academic subject. Twelve of the 20 units must be in upper division courses.
The following areas of preparation are suggested to enhance employment prospects:
(a) Complete prescribed courses in professional education, including directed teaching, and
(b) Fulfill requirements for a teaching minor.

Some departments have developed programs permitting students to obtain the master's degree and to meet the professional education requirements in a full year of full-time graduate study. The courses in professional education are typically offered in the summer and after four o'clock in regular semesters.

Professional Courses in Teacher Education
Prerequisite: Admission to the credential program.
Ten semester hours of professional education are required:
Education 201. The Junior College (3)
Education 225. Educational Psychology: Junior College (2)
Education 240. Instructional Methods and Materials: Junior College (2)
Education 316. Directed Teaching (4)

Directed teaching can be accomplished only in a junior college assignment.

Scholarships
The following scholarships are available to graduate students in education.
SAN DIEGO TEACHERS ASSOCIATION. Awarded to two students preparing for teaching. $100 each per year.

California Congress of Parents and Teachers, Inc. Awarded to a fifth-year student in training for the General Secondary Credential. $400 per year.

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 Elementary Education: W. H. Wetherill
Coordinator of Secondary Education: Philip Halfaker
Coordinator of Educational Administration: H. B. Holt
Coordinator of Counselor Education: Paul Bruce
Coordinator of Special Education Studies: A. J. Mitchell
Coordinator of Community College Programs: R. D. Smith, Jr.
Coordinator of Library Science: T. W. McAllister
Coordinator of Graduate Programs in Education: D. D. Malcolm
Graduate Advisers:
- Elementary Curriculum and Instruction: J. E. Innskeep
- Secondary Curriculum and Instruction: C. E. Fishburn
- Instructional Media: H. R. Smith
- Elementary Administration and Supervision: H. B. Holt
- Secondary Administration and Supervision: H. B. Holt
- Counseling (Master of Arts): Paul Bruce
- Special Education: A. J. Mitchell
- Educational Research: D. H. Ford
- Counseling (Master of Science): Paul Bruce


Scholarships
Awarded to two students preparing for teaching.

California Congress of Parents and Teachers, Inc. Awarded to fifth-year student in training for General Secondary Credential.

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)
118. Supervision of Child Welfare and Attendance (3)
122. Reading in Secondary Education (3)
126. Workshop in Secondary Education (3 or 6)
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 (3)
141. Producing Instructional Materials (3)
148. 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)
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. Education of the Neurologically Handicapped (6)
167. Exceptional Children (3)
168. Curriculum and Methods for Teaching Mentally Retarded Children in the Elementary School (3)
169. Curriculum and Methods for Teaching Mentally Retarded Children in the Secondary School (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. Suttering and Neurological Disorders (3)
177. Audiology: Principles (3)
178A. Communication 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

For requirements for admission to graduate courses, refer to the statement of prerequisites for graduate courses at the beginning of Part Four of this bulletin. In addition to these general requirements, 12 units of professional education are
prerequisite for enrollment in all graduate courses, except Education 201, 223, and 251, which require special clearance from the Coordinator of Community College Programs; and courses in Counselor Education.

**Sociological Foundations**

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

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

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

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

206. 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. Education 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, and of group techniques; implications for curriculum planning. Provides opportunity for work on individual problems of the participants.

**Procedures of Investigation**

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

212. Educational Research Design (3)
Prerequisite: Education 211.
Principles and methods of planning and conducting systematic investigations of educational problems—including historical, descriptive, and experimental methods of research. Practice in the definition of problems, formulation of hypotheses, construction of samples, control of variables, and interpretation of results.

213. Advanced Quantitative Methods in Educational Research (3)
Prerequisite: Education 153.
Application of correlation and tests of significance, including nonparametric and multivariate techniques, to research designs in such areas as curriculum, human development, student learning, counseling, and administration.

**Educational Psychology**

220. Advanced Educational Psychology (3)
Prerequisite: Education 110 or 112.
Advanced study of the research and its application to learning and human growth.

221. Seminar in Educational Measurement (3)
Prerequisite, one of the following: Education 120, 151, 152.
Problems in educational testing. Emphasis upon construction, administration, and validation of teacher-made tests.

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

223. Educational Psychology (Community College) (2)
Fieldwork required.
Prerequisite: Credit for or concurrent registration in Education 201.
The nature of the community college student; the learning process including contributions of audiovisual materials. The functions of student personnel services in the community college.

**Counselor Education**

224. Administration of Pupil Personnel Services (3)
Prerequisite: Education 230.
The organization and administration of school guidance services, including the use of community resources and a study of laws relating to children and child welfare.

225A-225B. Determinants of Human Behavior (3-3)
Implications of theory and research in behavioral sciences for the understanding of human behavior. Education 225A deals with personality theories and psychological determinants of behavior; 225B with social and cultural determinants.

226. Guidance Services in Public Education (3)
Prerequisite: Education 110, or Education 111 and 112.
Historical, philosophical, and legal bases of the pupil personnel services; staff roles and relationships in a variety of organizational patterns.

229. Workshop in Counseling (3)
Prerequisite: Consent of instructor of workshop.
Application of principles and procedures to specific situations for improvement of counseling services. Individual problems emphasized.

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

231. Theory and Process of Appraisal (4)
Three lectures and three hours of laboratory. Measurement theory and procedures, including interpretation of test results. Not open to students with credit in Education 237. Offered during summer sessions only in combination with Education 232 as Education 237.

232. Theory and Process of Vocational Choice (4)
Three lectures and three hours of laboratory and/or field work. Vocational choice theory, occupational and educational materials used in career planning. Not open to students with credit in Education 237. Offered during summer sessions only in combination with Education 231 as Education 237.
233. Theory and Process of Counseling (4)
Prerequisites: Education 225A and 231.
Counseling process theories, approaches to and techniques for counseling, and research concerning counseling effectiveness. Supervised practice in counseling, analyzing counseling, and writing counseling reports. Not open to students with credit in Education 238 or Psychology 152 or Psychology 233. Offered during summer sessions only in combination with Education 234 as Education 238.

234. Theory and Process of Group Counseling (4)
Three lectures and three hours of laboratory.
Prerequisites: Education 225B and 231.
Group process and individual growth, theories of group interaction, sensitivity training and group leadership techniques. Not open to students with credit in Education 238. Offered during summer sessions only in combination with Education 233 as Education 238.

237. Appraisal and Vocational Choice (6)
Five lectures and three hours of laboratory.
Measurement theory, interpretation of test results, vocational choice theory, occupational and educational information in career planning. Not open to students with credit in Education 231 or 232. Application to take the course must be made early during the preceding semester. Offered only during summer sessions.

238. Counseling: Individual and Group (6)
Five lectures and three hours of laboratory.
Counseling theory and techniques, individual and group. Not open to students with credit in Education 233 or 234. Application to take the course must be made early during the preceding semester. Offered only during summer sessions.

239A-239B. Professional Seminar in Guidance (3-2)
Prerequisites: Education 211; six units from Education 231, 232, 233, and 234 or equivalents.
Study of selected areas in counseling and guidance culminating in a written project with emphasis on research and on counseling as a profession.

Elementary Education

250. Curricular Problems in Secondary Education (3)
Prerequisites: Education 223, 224, 225, or consent of instructor.
Principles and techniques of diagnosis and treatment of reading difficulties. Experience in administration and instruction of the school subjects. Supervised experience in working with individual pupils and their parents.

252. 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.

254. 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.

256. Advanced Diagnosis in Reading (3)
Prerequisites: Psychology 204 and Education 137, or consent of instructor.
Principles and techniques of individual and group diagnosis of reading difficulties. Experience in administration and interpretation of individual and group instruments in diagnosis.

257. Advanced Diagnosis and Treatment of Learning Difficulties (3)
Prerequisites: A teaching credential and Education 151 or 152.
Principles and techniques of diagnosis and treatment of difficulties in learning the school subjects. Supervised experience in working with individual pupils and their parents.

258. 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.

260. Curriculum Construction and Evaluation in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
Advanced study of the research in curriculum development, construction, and evaluation.

261. Seminar in Arithmetic in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school arithmetic.

262. Seminar in Reading in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
A study of trends in reading instruction. Topics include developmental differences, and interests. Students will develop individual projects or problems.

263. Seminar in Social Studies in Elementary Education (3)
Prerequisites: Credit or concurrent registration in Education 211.
Advanced study of problems in teaching social studies in the elementary school, with emphasis on the study of the scientific research in the field.

264. 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.

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

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

267. 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)
Prerequisites: 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 of 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.

School Administration and Supervision

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.
Relationship of the school district to attendance units. The legal basis for policy formulation in the selection and retention of certified personnel, in the admission considerations.

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

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

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

266. Field Experience in Elementary School Administration and Supervision (3)
Prerequisite: Concurrent registration required in Education 264A, 264B, 264C.
Field experience in the elementary schools. Approval of local school district required in the semester prior to registration.

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

268. Seminar in School Administration and Supervision (3)
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, consent of instructor, and admission to Program of Educational Administration.
School administration and supervision in a specialized field, such as the junior college, a subject field, or designated services. Field experience required. May be substituted for Education 266C or 265C.

269. Seminar in Education of Exceptional Children (3)
Prerequisite: Education 167.
Principles, trends and research in the education of exceptional children.

270. Seminar in Emotionally Disturbed Children and Youth (3)
Prerequisites: Education 162 or 163, and 270.
Advanced study of the theories, principles and practices in working with emotionally handicapped.

271. Seminar in Education of the Gifted (3)
Prerequisites: Education 222 and 270.
Review of studies and investigation in learning and adjustment of the gifted, including assessment, classification, curriculum provisions, and social and emotional adjustment.

272. Seminar in Education of the Mentally Retarded (3)
Prerequisites: Education 168 or 169 and 270.
Review of studies and investigation in learning and adjustment of retarded children including etiology, classification, diagnosis, and assessment.

274. 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.
281. School-Community Relationships (3)
Prerequisites: Standard Teaching Credential, Education 260, 261, 262, 263, and consent of instructor.
Sociological aspects of school administration with particular emphasis on broad social policy, contemporary issues, community-school relationships, other social and service agencies of the community.

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

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

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

286A-286B. Seminar in School Building Construction and Utilization (3-3)
Prerequisite: Possession of Standard Administration or Supervision Credential, or consent of instructor. Completion of or concurrent registration in Education 286A is prerequisite to 286B.
School building construction and utilization: the development of new facilities from the planning stage to complete utilization; remodeling.

289A-289B. Seminar (3-3)
Prerequisites: Education 211 and advancement to candidacy for the Master of Arts degree in education.
An intensive study in selected areas of education culminating in a written project. Limited to students following Plan B for the Master of Arts degree in education.

299. 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) I, II
Prerequisites: Admission to Teacher Education and approval of the Community College program coordinator. Credit in Education 201 and 223 and concurrent registration in Education 311.
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 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.)
ENGINEERING

GENERAL INFORMATION

The School of Engineering offers graduate study leading to Master of Science degrees in Aerospace, Civil, Electrical, and Mechanical Engineering. These curricula are designed to augment the student's undergraduate training by advanced study in one of the various fields of engineering. Recognizing the increasing importance in modern technology of the engineer-scientist team, San Diego State 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 the 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 department the student working toward the Master of Science degree may elect 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 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) Fifteen units of 200-numbered courses in aerospace engineering and/or mechanics (designated as Group A, Group B, and Group C below) and excluding Engineering 299, 298, 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, including Engineering 299 (Plan A), if elected.

(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 243. Advanced Fluid Mechanics I (3)
EM 244. Advanced Fluid Mechanics II (3)
AE 241. Hydrodynamic Stability (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. Energy Methods in Mechanics (3)
EM 225. Theory of Plates (3)
EM 226. Theory of Shells (3)
EM 227. Elastic Stability (3)
EM 231. 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 201. Theory of Vibrations (3)
EM 204. Non-linear Vibrations (3)
EM 205. Theory of Random Vibrations (3)

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 Division of Physical 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 including EE 210A and EE 210B. A maximum of 6 units of 200-numbered courses in EE 210A and EE 210B 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 Division of Physical Sciences.

(c) Six elective units of 100- or 200-numbered courses approved by the graduate adviser.
MECHANICAL 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) Fifteen units of 200-numbered courses in mechanical engineering excluding Engineering 290, 298, 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 for these assistantships must be made in conference with his graduate adviser, 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. Quiet, M.S.
Chairman, Department of Aerospace Engineering and Engineering Mechanics: S. Dharmarajan
Chairman, Department of Civil Engineering: I. Noorany
Chairman, Department of Electrical Engineering: V. R. Learned
Chairman, Department of Mechanical Engineering: R. L. Bedore

Graduate Advisors: S. Dharmarajan, Aerospace Engineering; P. E. Johnson, Civil Engineering; M. V. R. Rao, Mechanical Engineering; C. R. Lodge, Electrical 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

191. Control Systems Laboratory (3)
192. Principles of Heat Transfer (3)
193. Fuels and Combustion (3)
194. Thermal Environmental Engineering (3)
195. Advanced Machine Design (3)
196. Introduction to Mechanical Vibrations (3)
197. Experimental Vibrations (3)
198. Matrix Methods in Aerospace Structures (3)
199. Intermediate Dynamics (3)
180. Intermediate Fluid Mechanics (3)
181. Hydromechanics (3)
182. Methods of Analysis (3)
183. Digital Solutions of Engineering Problems (3)
184. Automatic Control Systems (3)
185. Advanced Engineering Topics (1-3)

Civil Engineering Programs

114B. Structural Analysis (3)
115. Sanitary Engineering (3)
116B. Advanced Surveying (3)
117. Highway Materials (2)
118. Experimental Environmental Engineering (3)
119. Advanced Mechanics (3)
120. Intermediate Dynamics (3)
121. Experimental Strain Measurements and Analysis (3)
122. Advanced Resistance of Materials (3)
123B. Advanced Engineering Topics (1-3)

Electrical Engineering Programs

124B. Analysis and Design of Electronic Circuits (3)
125B. Electronic Circuits Laboratory (3)
126B. Feedback Control Systems Laboratory (3)
127B. Experimental Vibrations (3)
128B. Advanced Machine Design (3)
129. Introduction to Mechanical Vibrations (3)
130B. Advanced Machine Design (3)
131B. Experimental Vibrations (3)
132B. Matrix Methods in Aerospace Structures (3)
133B. Intermediate Dynamics (3)
134B. Intermediate Fluid Mechanics (3)
135B. Hydromechanics (3)
136B. Methods of Analysis (3)
137B. Digital Solutions of Engineering Problems (3)
138B. Automatic Control Systems (3)
139B. Advanced Engineering Topics (1-3)

Mechanical Engineering Programs

139. Nonmetallic Materials (3)
140. Structural Analysis II (3)
141B. Electromechanical Control Devices (3)
142. Principles of Heat Transfer (3)
143. Fuels and Combustion (3)
144. Gas Dynamics (3)
145. Thermal Environmental Engineering (3)
146B. Advanced Machine Design (3)
147A. Introduction to Mechanical Vibrations (3)
147B. Experimental Vibrations (3)
148. Advanced Thermodynamics (3)
149. Advanced Thermodynamics (3)
150. Aerodynamics (3)
151. Aircraft Propulsion Systems (3)
152. Aerospace Flight Mechanics (3)
153. Experimental Aerodynamics (2)
154A-154B. Principles of Chemical Engineering (1-3)
155B. Advanced Engineering Topics (3)
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.

GRADUATE COURSES IN AEROSPACE ENGINEERING

AE 290. Seminar (1-3)
Prerequisite: Consent of the graduate adviser and instructor.
Intensive study of selected topics in aerospace engineering, topic to be announced in class schedule. Maximum credit six units applicable on a master's degree.

AE 292. Aerodynamics (3)
Prerequisite: Engineering Mechanics 201 and credit or concurrent registration in Mathematics 118B.
Kinetic theory, the Boltzmann equation, the hydrodynamic equations, Chapman-Enskog Theory. Real gases and chemical reactions. Approximations: applications to shock structure, ultrasonics, heat transfer, and hypersonic flow, free molecule flow.

AE 293. Advanced Theory of Structures (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 204. Flight Dynamics—Stability and Control (3)
Prerequisite: Consent of the graduate adviser and instructor. Applications of control theory to aerospace vehicles. Stability derivatives, stability and control of uncontrolled motion, response to actuation of controls, automatic stability and control.

CE 205. Flight Dynamics—Theory of Flight Paths (3)
Prerequisite: Engineering 150. Analysis of trajectories of aircraft, missiles, satellites, and spacecraft subjected to uniform or central gravitational forces, aerodynamic forces, and thrust.

CE 220. Aerothermal Structural Analysis (3)
Prerequisite: Engineering Mechanics 221. Stress analysis of structures at elevated temperatures.

CE 241. Hydrodynamic Stability (3)

CE 243. Supersonic Flow Theory (3)
Prerequisite: Engineering 150. Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady flight, slender-body theory, methods of characteristics.

CE 244. Hypersonic Flow Theory (3)
Prerequisite: AE 243. Two- and three-dimensional hypersonic flows. Hypersonic similarity parameter, hypersonic small-disturbance theory; Newtonian flow, shock-layer, and other methods for blunt bodies.

CE 245. Magnetofluid Mechanics (3)
Prerequisite: EM 245. Study of the effects of interaction of an electromagnetic field with an electrically conducting fluid. Stability, boundary layers, shock waves, and other applications.

CE 246. Rarefied and Real Gas Flows (3)
Prerequisite: Mathematics 118B. Kinetic theory, the Boltzmann equation, the hydrodynamic equations, Chapman-Enskog Theory. Real gases and chemical reactions. Approximations: applications to shock structure, ultrasonics, heat transfer, and hypersonics. Free molecule flow, rarefied gas theory.

CE 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.
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 233. Water Quality Engineering (3)
Prerequisite: Engineering 123 and 125.

CE 234. 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 235. Water Quality Processes II (3)
Two lectures and three hours of laboratory.
Prerequisite: Civil Engineering 236.
Laboratory and pilot plant studies involving the application of physical, chemical and biological processes to the treatment of water, wastewater and industrial wastes.

CE 240. Advanced Soil Mechanics (3)
Prerequisite: Engineering 122.
Advanced theories of soil mechanics and their applications to design, including physical-chemical behavior of soils, theories of compaction, consolidation, stress distribution, shear strength, settlement analyses, lateral pressures, and bearing capacity of soils.

CE 241. Advanced Foundation Engineering (3)
Prerequisite: CE 240.

CE 242. Seepage and Earth Dams (3)
Prerequisite: CE 240.
Principles governing the flow of water through soils and their application in the design of earth and rock fill dams. Stability analysis and design of earth dams.

CE 250. Seminar in Structural Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in structural engineering. Maximum credit six units applicable on a master's degree.

CE 251. Seminar in Transportation Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in transportation engineering. Maximum credit six units applicable on a master's degree.

CE 252. Seminar in Soil Mechanics and Foundation Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in soil mechanics and foundation engineering. Maximum credit six units applicable on a master's degree.

CE 253. Seminar in Hydraulic Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in hydraulic engineering. Maximum credit six units applicable on a master's degree.

CE 254. Seminar in Sanitary Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in sanitary engineering. Maximum credit six units applicable on a master's degree.

CE 255. Seminar in Construction Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in construction engineering. Maximum credit six units applicable on a master's degree.

CE 256. Seminar in Geometronics (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in geometronics. Maximum credit six units applicable on a master's degree.

CE 257. Advanced Topics in Civil Engineering (2 or 3)
Advanced study in the field of civil engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

CE 258. Research (1-3)
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN ELECTRICAL ENGINEERING

EE 200. Seminar (1-3)
An intensive study in advanced electrical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

EE 201. Seminar in Electromagnetic Systems (1-3)
An intensive study in electromagnetic systems. Maximum credit six units applicable on a master's degree.

EE 202. Seminar in Electronic Design (1-3)
An intensive study in electronic design. Maximum credit six units applicable on a master's degree.

EE 203. Seminar in Digital Systems (1-3)
An intensive study in digital systems. Maximum credit six units applicable on a master's degree.

EE 204. Seminar in Feedback Control Systems (1-3)
An intensive study in feedback control systems. Maximum credit six units applicable on a master's degree.

EE 208A. Linear System Analysis (3)
Prerequisites: Engineering 130 and credit or concurrent registration in Engineering 187B or Mathematics 118B.
Loop and nodal system equations based on, topological considerations, fourier transform theory, state terminal network theory using matrices. Fourier integral transform theory applied to control system analysis. Positive real functions and associated testing applied to control system analysis. Mixed methods.

EE 208B. Linear System Synthesis (3)
Prerequisite: EE 208A.
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. Electrical Noise (2)
Major types and origins of electrical noise and the effects of noise on system behavior. Emphasis on concepts of noise as a random process, as distinguished from systematic or periodic interference.

EE 220. Feedback Control Systems (3)
Prerequisite: Engineering 189 or Engineering 138A.
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 118A.
Analysis and synthesis of sampled-data and digital control systems; techniques for the design of time optimal sampled-data control systems; z-transform calculus and difference equation synthesis techniques for determining stability and system response. (Formerly entitled: Non-Linear Systems.)

EE 224. Non-Linear Feedback Control Systems (3)
Prerequisite: EE 220.
Design and analysis of control systems which contain non-linearities, types of non-linearities, integrable systems, phase-plane analysis, describing functions and frequency analysis; compensation for unwanted non-linearities and application of compensating non-linearities.

EE 226. Optimal Control System (3)
Prerequisite: EE 220.
Optimal control theory through use of calculus of variations dynamic programming, Pontryagin's maximum principle for optimizing trajectories and control processes. Analysis and design of adaptive control systems.

EE 230. Advanced Logic Design and Switching Circuits (3)
Prerequisite: Engineering 195.
Synchronous sequential logic design of typical computer circuits such as counters, shift registers and error detecting circuits. Logical properties of memory elements, memory element state assignment methods.

EE 232. Transistor Circuit Design (3)
Prerequisite: Engineering 182.
Field effect transistors and circuits; quantitative variable nature of transistor mode; power amplifiers, converters and inverters; noise, reliability considerations and high speed switching.

EE 234. Semiconductor RF Circuit Design (3)
Prerequisite: Engineering 118B.
Wide band amplifiers, low level RF amplifiers and mixers, IF amplifiers, AGC, tuning and stability problems, unilateralization and mismatching techniques, harmonic oscillators, VHF power amplifiers including varactor amplifiers.

EE 236. Electronic Digital Systems (3)
Prerequisite: Engineering 118B.
Detailed comparative analysis of the system organization and operation of several digital computers, with special attention to the interdependence of design decisions and their dependence upon the intended system application.

EE 240. Radiation and Propagation (3)
Prerequisite: Engineering 139A.
Impedance characteristics and radiation patterns of thin linear antenna elements; field intensity calculations. Tropospheric and ionospheric propagation; propagation anomalies.

EE 242. Microwave Networks (3)
Prerequisite: Engineering 139A.
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 244. Microwave Antennas (2)
Prerequisite: EE 242.
Radiation from current distributions; design of microwave antennas; scattering and diffraction of electromagnetic waves. (Formerly EE 246, Microwave Antennas.)

EE 246. Radar Systems (3)
The radar equation; characteristics of CW, FM, MTI, pulse-doppler and tracking radar system; transmitters, antennas and receivers; detection of signals in noise, extraction of information, propagation effects; system engineering and design.

EE 250. Quantum Electronics (3)
Quantum mechanics for engineers concerned with its application to solid-state devices and optical communication systems.

EE 252. Optical Communications (3)
Prerequisite: EE 250.
Fundamentals of electro-optical technology from ultraviolet through infrared. Characteristics of thermal and laser radiation including generation, transmission, detection, data processing and display.

EE 256. Advanced Topics in Electrical Engineering (2 or 3)
Advanced study in the field of electrical engineering, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

EE 257. Research (1-3)
Prerequisite: Consent of graduate advisor. Research in engineering. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN ENGINEERING MECHANICS

EM 200. Seminar (2 or 3)
Advanced study of, or within, one phase of engineering mechanics, such as elasticity, plasticity, rheology, and micromechanics; buckling, vibration, and stability phenomena; hydrodynamics and magnetohydrodynamics; compressible, incompressible, and non-newtonian flow. May be repeated with new content. Maximum credit six units applicable on a master's degree.

EM 201. Advanced Dynamics (3)
Prerequisites: Engineering 50B and Mathematics 118A.

EM 203. Theory of Vibrations (3)
Prerequisites: Engineering Mechanics 201 and credit or concurrent registration in Mathematics 118B.
Linear and non-linear periodic phenomena as applied to discrete systems and continuous media with application to physical problems.

EM 204. Theory of Nonlinear Vibrations (3)
Prerequisite: EM 201.
Analysis of discrete systems with one or more degrees of freedom. Phase plane, harmonic balance, and other methods. Stability.

EM 205. Theory of Random Vibrations (3)
Prerequisite: EM 203.
Random processes with applications to vibration of discrete and continuous systems.

EM 210. Continuum Mechanics (3)
Prerequisite: Engineering 187B or Mathematics 118B.
Equations for the stress, deformation, and motion in a continuous medium; application in fluid and solid mechanics.
EM 221. Theory of Elasticity (3)
Prerequisite: Engineering 116 and credit or concurrent registration in Mathematics 118B. Engineering 186 is recommended.
Analysis of stress and strain. Stress-strain relations; the equations of elasticity; uniqueness theorem; compatibility conditions; flexure and torsion. Vector and tensor notation will be used.

EM 223. Energy Methods in Mechanics (3)
Prerequisite: EM 221.
Variational energy principles applied to the dynamics of rigid bodies, analysis of elastic frames; theories of plates and shells, buckling, and vibrations.

EM 225. Theory of Plates (3)
Prerequisite: Engineering Mechanics 221.
Bending and buckling theory of plates; application of small deflection and large deflection theories to plates with various boundary conditions; use of approximate methods and exact methods in solution.

EM 226. Theory of Shells (3)
Prerequisite: Engineering Mechanics 221.
Membrane and bending theory of shells of revolution and shells of arbitrary shape; exact and approximate methods of solution of shells subjected to axisymmetric and arbitrary loads.

EM 227. Theory of Elastic Stability (3)
Prerequisite: EM 221.

EM 228. Theory of Plasticity (3)
Prerequisite: Engineering Mechanics 221.
Inelastic stress-strain relations. Solutions to engineering problems with ideally-plastic, strain-hardening, and visco-elastic materials.

EM 243. Advanced Fluid Mechanics I (3)
Prerequisites: Engineering 115 and credit or concurrent registration in Mathematics 118B.
Fluid kinematics and kinetics. Conservation of mass, energy, and momentum, applied to Newtonian fluids. Navier-Stokes equations. Couette and Poiseuille flow. Potential flow. Introduction to turbulence and boundary layer theory. Vector and tensor notation will be used.

EM 244. Advanced Fluid Mechanics II (3)
Prerequisite: Engineering Mechanics 241.

EM 290. Advanced Topics in Engineering Mechanics (2 or 3)
Advanced study in the field of engineering mechanics, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

EM 297. Research (1-3)
Prerequisite: Consent of graduate adviser.
Research in engineering. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES IN MECHANICAL ENGINEERING

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

ME 201. Seminar in Thermodynamics and Fluid Flow (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in thermodynamics and fluid flow. Maximum credit six units applicable on a master's degree.

ME 202. Seminar in Cryogenics (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in cryogenics. Maximum credit six units applicable on a master's degree.

ME 203. Seminar in Engineering Materials (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in engineering materials. Maximum credit six units applicable on a master's degree.

ME 204. Seminar in Engineering Systems (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in engineering systems. Maximum credit six units applicable on a master's degree.

ME 205. Seminar in Operations Research in Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in operations research in engineering. Maximum credit six units applicable on a master's degree.

ME 206. Seminar in Nuclear Engineering (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in nuclear engineering. Maximum credit six units applicable on a master's degree.

ME 207. Seminar in Mechanical Design (2 or 3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in mechanical design. Maximum credit six units applicable on a master's degree.

ME 221A-221B. Mechanical Vibrations (3-3)
Prerequisites: Engineering 147B, 183, and 187B.
Topics in vibration relating to mechanical design such as non-linear vibrations, determinants, dynamic and residual stress distributions.

ME 221. Stress Analysis (3)
Topics in applied elasticity, advanced study of the resistance of materials and stresses and strains in plates and shells. Photoelasticity, brittle and ductile failure of solids. Analysis of dynamic performance of physical systems such as pneumatic, hydraulic and hot-gas. Transient forces and valve instability. Servo characteristics. 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 or equivalent.
Analysis of dynamic performance of physical systems such as pneumatic, hydraulic and hot-gas. Transient forces and valve instability. Servo characteristics.

ME 231A. Advanced Science of Materials I (3)
Prerequisite: Engineering 107.
Structure and physical properties of solids. Imperfections in materials and their effects on various properties. Elasticity, plasticity, and fracture of metals related to crystal structure.

ME 231B. Advanced Science of Materials II (3)
Prerequisite: Mechanical Engineering 231A.
Phase equilibria, martensitization, shape memory and growth processes in solids. Principles of alloying and thermal treatments.
ME 233. Reactor Materials (3)
Prerequisite: Engineering 107.
Metallurgical processing, corrosion, and radiation effects of nuclear materials.
Selection of reactor materials.

ME 234. High Temperature Materials (3)
Prerequisite: Engineering 107.
Behavior of metals, cermetis, and nonmetallic materials at high temperatures.
Effect of environment and service conditions on composition, structure, and physical properties.

ME 246. Advanced Topics in Automatic Controls (3)
Prerequisites: Engineering 187A and 189.
Synthesis of linear control systems. Analysis of nonlinear systems by describing function and phase plane methods. Sampled data systems analysis; statistical design techniques and adaptive control.

ME 250. Analytical Thermodynamics (3)
Advanced concepts of macroscopic thermodynamics. Application of thermodynamics to special systems. (Formerly numbered ME 214.)

ME 260. Conduction Heat Transfer (3)
Prerequisites: Engineering 140 and 187B.
Conduction heat transfer, multidimensional conduction processes, transient analysis. (Formerly numbered ME 215A.)

ME 262. Convection Heat Transfer (3)
Prerequisite: ME 260.
Convection heat transfer. Advanced theories of forced and free convection. (Formerly numbered ME 215B.)

ME 264. Radiation Heat Transfer (3)
Radiation heat transfer. Solid body and gaseous radiation. (Formerly numbered ME 215C.)

ME 267. Cryogenic Engineering (3)
Prerequisite: Engineering 148.
Analysis of low-temperature processes and equipment. Physical properties of structural and other materials used in producing, maintaining, and using low temperatures. (Formerly numbered ME 210.)

ME 270. Gas Dynamics (3)
Prerequisites: Engineering 142 and Mathematics 118B.
Further consideration of the flow of compressible fluids in conduits. Shock fronts, unsteady flow and real gases. (Formerly numbered ME 212.)

ME 274. Boundary Layers in Internal Flows (3)
Prerequisites: Engineering 118 and 187B.
Conservation laws applied to boundary layers in viscous, heat conducting fluids; analysis of the boundary layer equations; applications to internal flows.

ME 276. Bearing Design and Lubrication (3)
Prerequisite: Engineering 187B.
Friction and wear of materials. Boundary and thick film lubrication. Design of incompressible and compressible fluid bearings; rolling-element bearings.

ME 280. Aircraft and Missile Propulsion (3)
Prerequisites: Engineering 142, 143, and Mathematics 118B.
Analysis of ideal gas turbine cycles. Principles of regeneration, reheat and intercooling. Thermodynamic analysis and performance of turbojet engines, ramjet engines and rocket motors. Rocket jet propulsion systems. Dynamics of rocket propulsion free of gravity and air resistance. (Formerly numbered ME 211.)

ME 284. Theory of Turbomachines (3)
Prerequisites: Engineering 141 or 150.
Application of the fundamental laws of fluid mechanics to the problems of energy transfer between fluid and rotor. Performance characteristics of turbomachines. Study of loss mechanisms. (Formerly numbered ME 216.)

ME 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.

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, as 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 a well-rounded program. Graduates from other colleges must complete an English major equivalent to the one at San Diego State before admission to classified graduate standing can be recommended. If, in the opinion of the graduate adviser, an equivalent major is not offered, the student will be required to complete such courses as may be necessary to satisfy the department's requirements before the student may enter upon the master's degree curriculum.

The English Department recommends that undergraduate students study extensively some foreign language as preparation for graduate work in English.

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 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 16 units must be in 200-numbered courses, exclusive of thesis. Required courses are English 299, at least two seminars, 180, 223, and 224. Not more than three units from among English 140, 142, 144, 153, 170, 171, 172, and 260 may count in any program other than the creative writing program described below.

In addition to the above requirements, the candidate must enroll in English 299 and write a thesis under departmental supervision, must pass an oral examination on his general knowledge of literature, and must demonstrate a reading knowledge of a relevant foreign language. The English Department recommends French.

Details concerning the oral examination are available from the graduate advisers. The student may take this oral examination at any time following advancement to candidacy, but ordinarily will take it before enrollment in English 299. Thesis. The English Department assumes no responsibility for scheduling oral examinations between the end of Term I of the summer session and the beginning of the fall semester.

A student wishing to submit a thesis of creative writing must satisfy all the requirements stated above, except that he will be required to take only one course and must take a minimum of six units chosen with his adviser's approval from among the following courses: English 140, 142, 144, 153, 170, 171, 172, and 260. Nor more than nine units from among the eight courses may count as part of the basic 24-unit requirement. The candidate must also submit samples of previous work and once based progress to a departmental committee of three for consideration of the quality of his writing and the suitability of his work-in-progress for a creative writing thesis.

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.
223. Old English (3)
Prerequisites: Twelve units of upper division work in English.
Elementary grammar and readings in Old English prose and poetry; introduction to Beowulf.

224. Middle English (3)
Readings in Middle English prose and poetry exclusive of Chaucer.

229. Twentieth Century Literature (3)
Prerequisite: Twelve units of upper division work in English.
Selected major works in the literature of the modern period. Special emphasis on "Modernism" as a literary movement.

241. A Literary Era (3)
Prerequisite: Twelve units of upper division work in English.
A major era in English or American literature, such as the Elizabethan age, the neoclassical age, the American Romantic period. Maximum credit six units applicable on a master’s degree.

242. A Literary Genre (3)
Prerequisite: Twelve units of upper division work in English.
A major literary genre, such as lyric poetry, drama, the novel. Maximum credit six units applicable on a master’s degree.

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.
ASSOCIATE PROFESSORS: Janis M. Glasgow, Ph.D.; S. L. Alramurs, PhD.; A. G. Branan, M.A.; W. B. Dunham, M.A.; N. C. Alramurs, PhD.; Guerard Piffard, PhD.

CREDENTIAL ADVISER: N. Messier, PhD.; Hilda Nelson, PhD.; Dennis Palmer, A.B.; G. L. Woodle, M.A.

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)
(Offered alternate years.)
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 Francois Villon.

203. Literature of the French Renaissance (3)
(Offered alternate years.)
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.

214. The Novel in France in the 20th Century (3)
Prerequisite: 18 units of upper division French.
Current movements and techniques in the novel in France from 1900 to the present, with concentration on the leading novelists of the period.

215. The Theater in France in the 20th Century (3)
Prerequisite: 18 units of upper division French.
Movements and techniques in the French dramatic literature from 1900 to the present, with concentration on the leading dramatists of the period.

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 and other interested persons a taste of French at an advanced level.

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 (such as Corneille, Moliere, or Racine), 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 (such as Voltaire, Diderot, or Rousseau), or in a genre or movement.
Maximum credit of six units applicable on a master’s degree.

270. Seminar in Nineteenth-Century Literature (3)
Directed research in the works of a representative author (such as Hugo, Balzac, Stendhal, or Zola), or in a genre or movement.
Maximum credit six units applicable on a master’s degree.

290. Research and Bibliography (3)
Prerequisite: 18 units of upper division French.
Purposes and methods of research in the fields of the language and literature, the collection and collation of bibliographic material, and the proper presentation of the results of such investigation. Recommended for the first semester of graduate work.

294. Comprehensive Reading and Survey Course (3)
Prerequisites: 18 units of upper division French and consent of graduate adviser and department chairman.
A study of important movements, authors, and works in French literature. Designed to supplement the reading done in previous courses, in preparation for the comprehensive examination in literature for candidates for the Master of Arts degree.

298. Special Study (1-3)
Prerequisite: 18 units of upper division French and 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.

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. 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 graduate adviser. At least 24 units must be selected from courses in geography listed below as acceptable on master’s degree programs of which 18 or more units must be in 200-numbered courses including Geography 210, 295, and if Plan A is elected, Geography 296. If Plan B is elected, the student must complete two research papers and a minimum of 3 units in Geography 298 and pass a final comprehensive written examination in lieu of the thesis. For either plan, a final comprehensive oral examination is required.

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: R. D. Wright, Ph.D.
Graduate Adviser: R. W. Richardson
COURSES ACCEPTABLE ON MASTER OF ARTS DEGREE

PROGRAMS IN GEOGRAPHY

UPPER DIVISION 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 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.

210. History of Geography (3)
Prerequisite: Approval of graduate adviser.
The evolution of concepts concerning the nature, scope, and methodology of geography.

220. Seminar in Regional Geography (3)
Prerequisite: Approval of departmental graduate advisory committee.
Intensive study of a major world region, such as South America, Southeast Asia and Northern Europe. Maximum credit six units applicable on a master's degree.

GRADUATE COURSES

250. Seminar in Systematic Geography (3)
Prerequisite: Approval of departmental graduate advisory committee.
An 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)
Prerequisites: 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.

270. Seminar in Theory of Resource Use (3)
Prerequisites: Geography 170 and 171 or approval of the departmental advisory committee.
Selected theories in resource use. Emphasis on conflicts between resource systems and conservation philosophy.

275. Seminar in Environmental Quality (3)
Prerequisites: Geography 170 on approval of the departmental advisory committee.
Geographic factors affecting environmental quality, such as congestion, crowding, and pollution.

280. Seminar in Recreational Geography (3)
Prerequisites: Geography 175 and consent of the departmental advisory committee, Geography 170 and 171 are recommended.
Design and management of recreational areas. Emphasis on man-land relationships in natural parks of San Diego County.

290. Techniques of Field Research (3)
Prerequisites: Geography 180 and approval of departmental graduate advisory committee.
Detailed 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.

295. Geographic Research and Techniques of Presentation (3)
Prerequisite: Approval of the departmental graduate advisory committee.
Students will be assigned to various government agencies and industry, and will work under joint supervision of agency heads and the course instructor.
298. Special Study (1-3)
Prerequisite: Consent of staff; to be arranged with department chairman and instructor.
Individual study. Six units maximum credit.

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

GEOLoGY

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 overall 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 geography, 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 of 200-numbered courses in 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
Several graduate teaching assistantships in geology are available to qualified students. Application blanks and additional information may be secured from the Chairman of the Department.

FACULTY
Chairman, Department of Geology: R. G. Gastil, Ph.D.
Graduate Adviser: E. C. Allison
Associate Professors: R. W. Berry, Ph.D.; Daniel Krummenacher, Ph.D.; R. B. McEuen, Ph.D.; A. D. Pracek, Ph.D.
Assistant Professors: N. O. Frederiksen, M.S.; J. P. Kern, Ph.D.; W. G. Libby, 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>Units</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>3</td>
</tr>
<tr>
<td>107</td>
<td>Principles of Stratigraphy</td>
<td>3</td>
</tr>
<tr>
<td>108B</td>
<td>Field Geology</td>
<td>4</td>
</tr>
<tr>
<td>109</td>
<td>Introduction to Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>110</td>
<td>Advanced Geophysics</td>
<td>4</td>
</tr>
<tr>
<td>112</td>
<td>Advanced Geophysics</td>
<td>4</td>
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Related Fields: Appropriate courses in the departments of biology, botany, chemistry, engineering, mathematics, physics, and zoology may be selected in consultation with and approval of the graduate adviser.

GRADUATE COURSES

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

208. Graduate Field Geology (3)
One lecture and nine Saturday field sessions.
Prerequisite: Geology 106A.
Experience in one or more specialized aspects of field mapping.

209. Igneous Petrology (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 125 and 130.
Investigation of problems in igneous petrology, using petrography, geochemistry, and experimental methods.

211. Metamorphic Petrology (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 125 and 130.
Investigation of problems in metamorphic petrology using petrography, geochemistry, and experimental methods.

212. Sedimentary Petrology (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 107 and 124.
Investigation of problems in sedimentary petrology.

220. Biostratigraphy (3)
Two lectures and three hours of laboratory.
Prerequisite: Geology 107.
Development of concepts and practices in stratigraphic and geochronologic synthesis critically reviewed in context of current knowledge of the fossil record.

221. Advanced Palynology (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 106 and Botany 172.
Problems and current topics in palynology.

225. Paleocology (3)
Two lectures and three hours of laboratory.
Prerequisites: Geology 106 and Biology 110.
Problems and methods in the study of relationships between fossil organisms and their environment; interpretation of paleoenvironment, paleoclimate, and biologic relationships among fossil organisms.

229. Seminar: Advanced Studies in Stratigraphy (3)
Two seminars and three hours of laboratory.
Prerequisite: Geology 107.
Regional stratigraphic patterns in North America and their historical implications.

235. Marine Processes (3)
Prerequisite: Geology 107.
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 (2)
Prerequisite: Geology 110.
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.
Topics in 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 15 units and 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 consisting of books, periodicals and newspapers. A foreign language laboratory with modern equipment is available to both graduate and undergraduate students.

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: Vytas Dukas, Ph.D.
Graduate Adviser: R. H. Lawson
Credential Adviser: J. H. Wolber

Professors: Vytas Dukas, Ph.D.; R. H. Lawson, Ph.D.; E. M. Wolf, Ph.D.
Associate Professors: Elaine E. Boney, Ph.D.; H. J. Dunkle, Ph.D.; H. W. Paulin, Ph.D.; Yoshio Tanaka, Ph.D.; W. O. Westervelt, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN GERMAN

UPPER DIVISION COURSES

103A–103B. German Literature of the Eighteenth Century (3–3)
105A–105B. German Literature of the Nineteenth Century (3–3)
107. German Literature from its Beginning to the Reformation (3)
110A–110B. Contemporary German Literature (3–3)
111. Contemporary German Drama (3)
115. Goethe's Faust (3)

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.
The German novel from the beginning of the twentieth century with special emphasis on the works of Thomas Mann, Hermann Hesse, and Franz Kafka.

205. German Lyric Poetry From Hölderlin 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.

240. German "Geistesgeschichte" in the 19th and 20th Centuries (3)
Prerequisite: 16 units of upper division German including German 140 and 141.
The historical development of the German language and culture since 1800 with emphasis on philosophical, literary, and scientific thought, and on the intellectual contents of literary works. Based on the reading of German sources.

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 movement of German literature of the twentieth century. Maximum six units applicable on a master's degree.

265. Seminar in Germanic Linguistics (3)
Prerequisite: 18 units of upper division or graduate German.
Directed research in a specialized area of Germanic linguistics or philology. Maximum credit six units applicable to a master's degree.

293. Research and Bibliography (3)
Prerequisite: 12 units of upper division German.
Purposes and methods of research in the fields of the language and literature, the collection and collation of bibliographic material, and the proper presentation of the results of such investigation. Recommended for the first semester of the graduate work.

297. Research (3)
Prerequisite: Advancement to candidacy.
Individual research in a specialized subject in German literature or linguistics.

298. Special Study (1-3)
Individual study. Six units maximum credit.
Prerequisites: 18 units of upper division German and consent of staff; to be arranged with department chairman and instructor.

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

**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 for teaching service with a concentration in Health Education. (For information regarding graduate programs in physical education, see the section of this bulletin on Physical Education.)

Close liaison among the departments concerned and with community agencies provides opportunities for realistic field experiences.

**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 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 FOR TEACHING SERVICE**

In addition to meeting the requirements for classified graduate standing and the credential requirements where applicable, the student must satisfy the basic requirements for the Master of Arts degree as described in Part Three of this bulletin. The concentration consists of 21 units in Health Education selected from those listed as applicable 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. Application 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.
Credentia l Adviser: W. C. Burgess
Graduate Adviser: A. C. McTaggart

**COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN HEALTH EDUCATION**

**UPPER DIVISION COURSES**

145. Safety Education and Accident Prevention (3)
151. Administration of the School Health Program (3)
154. Workshop in Health Education (2)
155. Sex Education in the Schools (3)
160. Introduction to Public Health (3)
169. World Health (3)
172. Habit Forming Substances (3)
175. Health in Later Maturity (3)
176. Health and Medical Care (3)
192. Critical Analysis of Professional Literature (3)
197. Supervised Field Experience (1-3)
### GRADUATE COURSES

#### 200. Seminar (3)
- Prerequisite: Fifteen units completed in Health Science and Safety.
- An intensive study of advanced problems in health education. Maximum credit six units applicable on a master's degree.

#### 201. Interdisciplinary Factors in Health Education (3)
- Prerequisite: Fifteen units completed in Health Science and Safety.
- Synthesis of basic scientific and cultural principles which contribute to an understanding of human well-being and how it is deliberately influenced.

#### 202. Measurement and Evaluation in Health Education (3)
- Prerequisite: Health Science and Safety 153.
- General and specific approaches to measurement in Health Education; data gathering techniques, organization, presentation, and interpretation of data; basic principles of evaluation of student achievement.

#### 240. Administration of Traffic Safety Education (3)
- Prerequisite: Health Science and Safety 145.
- 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.

#### 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.

### HISTORY

#### GENERAL INFORMATION
The Department of History, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in History, and to the Master of Arts degree for teaching service with a concentration in History.

#### 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. As an additional requirement, the student must have completed a bachelor's degree with an undergraduate major in a field of study closely related to history. Applicants who have an undergraduate major in social studies with a history concentration or in a closely related field may be admitted after fulfilling the requirements for classified graduate standing and upon the recommendation of the graduate adviser.

#### SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE
In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must complete a graduate program which includes a major paper and a comprehensive examination. The major paper is a graduate-level thesis, or a major project, or an individual study. The comprehensive examination is a written and oral examination taken after the completion of the major paper.

#### 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 major paper and a comprehensive examination. The major paper is a graduate-level thesis, or a major project, or an individual study. The comprehensive examination is a written and oral examination taken after the completion of the major paper.

### SCHOLARSHIPS
The K. W. Stott Scholarship, in the amount of $100, is awarded each June to a student who has attended San Diego State for at least two years and who is being graduated or who has been graduated by San Diego State and has an approved program of study leading to the Master of Arts degree in History, and is planning to continue work in San Diego State and in an accredited institution.

The recipient must continue work in San Diego State and in an accredited institution and to the Master of Arts degree in History, and is planning tocontinue work in San Diego State and in an accredited institution.

The recipient must continue work in San Diego State and in an accredited institution.
FACULTY

Chairman, Department of History: W. F. Hanchett, Ph.D.
Graduate Adviser: A. W. Scharz (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. War and Civilization (3-3)
111A-111B. Ancient History (3-3)
112A-121B. Europe in the Middle Ages (3-3)
122. The Holy Roman Empire to the Great Interregnum (3)
123. The Byzantine Empire (3)
131A-131B. Renaissance and Reformation (3-3)
133A-133B. Europe in the 17th and 18th Centuries (3-3)
135A-135B. Europe in the 19th Century (3-3)
136A-136B. Intellectual History of Modern Europe (3-3)
141A-141B. History of Scandinavia (3-3)
142A. The French Revolution and Napoleon (3)
142B. Modern France (3)
143A-143B. The Iberian Peninsula (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)
151A-151B. England (3-3)
152A-152B. Constitutional History of England (3-3)
153A-153B. Tudor and Stuart England (3-3)
154A-154B. Modern Britain (3-3)
155A-155B. History of the British Empire and Commonwealth (3-3)
157A-157B. History of the Near East from the 7th Century to Modern Times (3-3)
158A-158B. Africa (3-3)
160A-160B. Latin America (3-3)
161A-161B. Mexico (3-3)
162A-162B. History of Brazil (3-3)
163A-163B. The Caribbean Area (3-3)
164. The Pacific Coast Nations of South America (3)
165A-165B. Economic, Social, and Intellectual Development of Latin America (3-3)
167A-167B. Diplomatic History of Latin America (3-3)
168. The Platine Nations (3)
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 (3-3)
174. The Rise of Modern America, 1868-1909 (3)
175A-175B. The United States, 1901-1945 (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 American People (3-3)
210. Selected Studies in History (3)
211A-211B. The Westward Movement (3-3)
212A-212B. The Spanish Borderlands and the American Southwest (3-3)
213A-213B. Black American Civilization (3-3)
219A-19B. California (3-3)
220A-220B. Southeast Asia (3-3)
221A-221B. The Far East (3-3)
222. Chinese Civilization (3)
223. China in Modern Times (3)
227. Japanese Civilization (3)
228. Rise of Japan as a Modern State (3)
229A-229B. The Indian Sub-Continent (3-3)
230A-230B. 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)
241. Directed Reading in United States History (3)
242. Directed Reading in European History (3)
243. Directed Reading in Asian History (3)
244. Directed Reading in Latin American History (3)
245. Directed Reading in African History (3)
250. Seminar in the Philosophy of History (3)
251. Seminar in United States History (3)
262. Seminar in European History (3)

210. Selected Studies in History (3)
211A-211B. The Westward Movement (3-3)
212A-212B. The Spanish Borderlands and the American Southwest (3-3)
213A-213B. Black American Civilization (3-3)
219A-19B. California (3-3)
220A-220B. Southeast Asia (3-3)
221A-221B. The Far East (3-3)
222. Chinese Civilization (3)
223. China in Modern Times (3)
227. Japanese Civilization (3)
228. Rise of Japan as a Modern State (3)
229A-229B. The Indian Sub-Continent (3-3)
230A-230B. Intellectual History of Modern Asia (3-3)

240A-240B. Southeast Asia (3-3)
241A-241B. The Far East (3-3)
242. Chinese Civilization (3)
243. China in Modern Times (3)
244. Japanese Civilization (3)
245. Rise of Japan as a Modern State (3)
246A-246B. The Indian Sub-Continent (3-3)
247A-247B. Intellectual History of Modern Asia (3-3)

250. Seminar in the Philosophy of History (3)
251. Seminar in United States History (3)
262. Seminar in European History (3)

241. Directed Reading in United States History (3)
242. Directed Reading in European History (3)
243. Directed Reading in Asian History (3)
244. Directed Reading in Latin American History (3)
245. Directed Reading in African History (3)
250. Seminar in the Philosophy of History (3)
251. Seminar in United States History (3)
262. Seminar in European History (3)

250. Seminar in the Philosophy of History (3)
251. Seminar in United States History (3)
262. Seminar in European History (3)

241. Directed Reading in United States History (3)
242. Directed Reading in European History (3)
243. Directed Reading in Asian History (3)
244. Directed Reading in Latin American History (3)
245. Directed Reading in African History (3)
250. Seminar in the Philosophy of History (3)
251. Seminar in United States History (3)
262. Seminar in European History (3)
253. Seminar in Asian History (3)
Prerequisite: Six upper division units in Asian history.
Directed research on topics selected from a designated area of Asian history.
Maximum credit six units applicable on a master's degree.

254. Seminar in Latin American History (3)
Prerequisite: Six upper division units in Latin American history.
Directed research on topics selected from a designated area of Latin American history.
Maximum credit six units applicable on a master's degree.

255. Seminar in African History (3)
Prerequisite: Six upper division units in African history.
Directed research on topics selected from a designated area of African history.
Maximum credit six units applicable on a master's degree.

296. Area Studies in History (1-3)
Preparation for the comprehensive examinations in the major and minor fields of history for those students taking the M.A. under Plan B. Maximum credit six units applicable on a master's degree.

297. Research (3)
Prerequisite: Advancement to candidacy.
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.

HOME ECONOMICS

GENERAL INFORMATION
The Department of Home Economics, 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 with classified graduate standing as described in Part Three of this bulletin under Admission to the Graduate Division. In addition, the student must have 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 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 Home Economics 290, Bibliography and Methods of Research, and Home Economics 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 chairman of the department.

FACULTY
Chairman, Department of Home Economics: Nona H. Cannon, Ed.D.
Graduate Adviser: Nona H. Cannon
Credential Adviser: Cherie Schupp
Associate Professor: Thelma R. Reed, Ph.D.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN HOME ECONOMICS

UPPER DIVISION COURSES

102. Advanced Nutrition (3) 140. Family Financial Problems and Practices (3)
103. Quantity Cookery (3) 145. Family Housing (3)
104. Institutional Food Organization and Management (3) 153. Supervised Field Work in Home Management (3)
105. Experimental Foods (3) 170. Human Development: Infancy (3)
106. Diet Therapy (3) 175. The Nursery School Program (3)
118. Flat Pattern Design (3) 177. Administration and Supervision
119. Textile Analysis and Testing (3) in Nursery Schools (3)
120. Clothing and Human Behavior (3) 179. Advanced Child Study (1)
121. Clothing Design: Draping (3) 190. Advanced Studies in Home Economics (2-6)
122. Clothing Design: Historical Influences (3)
136. Family Study (3)

GRADUATE COURSES

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: Home Economics 100. Reading and analysis of selected research in food technology.

204. Advanced Readings in Nutrition (3) Prerequisite: Home Economics 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.
Prerequisite: Home Economics 100 and 102.
Determination of energy values, organic nutrients, and minerals in foodstuffs and tissues by chemical, biological, and microbiological methods.

206. Physiological Bases of Diet Therapy (3) Prerequisite: Home Economics 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: Home Economics 102. Nutrition, health and biochemical growth in children. Conditions leading to malnutrition, the prevention and correction of same.

215. Seminar: Clothing (3) Prerequisite: Nine units in the area of clothing.
Selected problems in the field of clothing.

216. Seminar: Textiles (3) Prerequisite: Home Economics 119 and consent of instructor.
Current literature and experimental research in fiber and fabric technology related to consumer use.

219. History of Textiles and Clothing (3) Prerequisite: Six units in art, anthropology, sociology, or psychology.
Textile and clothing development from ancient times to the present as related to socio-economic and political influences.

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: Home Economics 155.
Individual study, seminar reports, and group discussion of selected topics in marriage adjustment.

240. Seminar in Family Economics (3) Prerequisite: Upper division course in family finance.
Personal financial practices under changing conditions. Review of literature in family financial management.

251. Seminar in Home Management (3) Prerequisite: Upper division course in home management and related areas.
Recent research in home management.

270. Seminar: Child Development and Guidance (3) Prerequisite: Consent of instructor.
Emphasis on personality theories and on research and clinical findings relevant to a systematic study of human development and the guidance of children.

271. Advanced Readings in Human Development (3) Prerequisite: Home Economics 70 and 179.
Analysis of selected research in human development.

281. Seminar: Home Economics Education (3) Prerequisite: 18 units in Home Economics 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) Prerequisite: Education 121C or the equivalent, and 18 units in Home Economics. Current issues and recent developments in home economics education with implications for secondary and post high school programs.

290. Bibliography and Methods of Research (3) Prerequisite: 12 upper division or graduate units in Home Economics. Reference materials, bibliography, investigations of current research in home economics, processes of thesis topic selection, and techniques of scholarly writing.

298. Special Study (1-3) Prerequisite: Consent of staff; to be arranged with department chairman 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.
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 experience 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 must contain at least 24 units of 200-numbered courses, including Industrial Arts 220 and 290, nine units selected from Industrial Arts 221, 222, 223, and 224, and either Industrial Arts 299 (Plan A) or 295 (Plan B). Students selecting 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: W. L. McLoney, Ed.D.
Graduate Adviser: F. J. Irgang
Credentialed 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)
123. Industrial Arts Drawing (3)
133. Industrial Arts Metalworking (3)
140. Photography for Teachers (3)
153. Industrial Arts Woodworking (3)
164. Basic Digital Computers (3)
173. Industrial Arts Transportation (3)
183. 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)
Prerequisite: Teaching experience in area selected and consent of instructor. Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-radio; (e) transportation; (f) graphic arts; (g) photography; (h) comprehensive industrial arts. Stress on project design and visual materials. Maximum credit six units applicable on a master's degree.
202. Industrial Arts Problems in Graphics and Design (3)
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)
Prerequisite: Industrial Arts 133.
Problems involved in industrial arts metalworking. Individual research project dealing with instructional materials or processes.
204. Problems in Photography (3)
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)
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)
Prerequisite: Industrial Arts 165.
Recent developments in the electronics area. Special research projects and resource materials.
207. Industrial Arts Problems in Transportation (3)
Prerequisite: Industrial Arts 173.
Research in selected areas of the transportation industry and effective presentation of findings in oral and written form.
208. Industrial Arts Problems in Graphic Arts (3)
Prerequisite: Industrial Arts 183.
Selected areas of the graphic arts industry related to materials, production, and printing of graphic arts. Techniques of presentation of findings in effective methods, and visual presentation. Techniques of printed presentations.
215. Problems in Plastics (3)
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.
221. Instructional Resources in 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.

222. 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.

223. 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.

224. 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.

225. Research Procedures in Industrial Arts (3)
Location, selection, and analysis of scientific and professional literature, research data and specialized bibliographies.

226. Selected Topics in Industrial Arts (3)
Prerequisites: Industrial Arts 290 and advancement to candidacy for the Master of Arts degree. Study in selected topics of Industrial Arts culminating in a research paper.

227. 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 Portuguese. It is administered by the Latin-American Studies Committee.

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, and (a) for those in a specific academic discipline, (b) for those planning to enter business or government service in the Latin-American field, and (c) for those in a specific academic discipline who have a regional interest in Latin America. It is not intended as a complete vocational preparation.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS PROGRAM
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 Latin-American content, distributed as follows:

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-numbered Courses</td>
<td></td>
</tr>
<tr>
<td>Department A</td>
<td>6 units</td>
</tr>
<tr>
<td>Department B</td>
<td>3 units</td>
</tr>
<tr>
<td>Department C</td>
<td>3 units</td>
</tr>
<tr>
<td></td>
<td>12 units</td>
</tr>
</tbody>
</table>

The remaining units, 3 of which must be in 200-numbered courses, will be elective, as approved by the graduate adviser. A comprehensive examination in lieu of a thesis is required (Plan B).

All programs will be approved by the Latin-American Studies Committee.

COMMITTEE ON LATIN-AMERICAN STUDIES

W. A. Finch, Jr., Chairman
J. M. Jutkowitz
A. J. O. Anderson
J. B. Kelley
E. M. Barreza
George Lemus
J. D. Blick
A. P. Nasir
R. L. Cunniff
J. V. Padgett
P. F. Flemion
P. J. Vandervood
Victor Goldkind
D. J. Weber
G. L. Head
Raymond Weeter
### FACULTY

- **History**: A. P. Nasatir
- **Political Science**: J. M. Jutkowitz
- **Spanish**: George Lemus

### COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN LATIN-AMERICAN STUDIES

#### UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anthropology</strong></td>
<td>157</td>
<td>Meso-American Ethno-history (3)</td>
</tr>
<tr>
<td></td>
<td>162</td>
<td>Cultures of South America (3)</td>
</tr>
<tr>
<td></td>
<td>165</td>
<td>Contemporary Latin America Cultures (3)</td>
</tr>
<tr>
<td></td>
<td>169-S</td>
<td>Backgrounds of Mexican Civilization (3)</td>
</tr>
<tr>
<td></td>
<td>180</td>
<td>Preclassic Aboriginal Civilizations of Mid-America (3)</td>
</tr>
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<td></td>
<td>181</td>
<td>Classic Pre-Columbian Civilizations of Mid-America (3)</td>
</tr>
<tr>
<td></td>
<td>182</td>
<td>Post-Conquest Cultures of Middle America (3)</td>
</tr>
<tr>
<td><strong>Economics</strong></td>
<td>114</td>
<td>Economic Problems of Latin America (3)</td>
</tr>
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<td></td>
<td>195</td>
<td>International Economics-Problems (3)</td>
</tr>
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<td></td>
<td>196</td>
<td>Economics of Underdeveloped Areas (3)</td>
</tr>
<tr>
<td><strong>Geography</strong></td>
<td>123</td>
<td>Middle America (3)</td>
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<tr>
<td></td>
<td>124</td>
<td>South America (3)</td>
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<td></td>
<td>198</td>
<td>Directed Readings in Geographic Literature (1)</td>
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<tr>
<td><strong>History</strong></td>
<td>160A-160B</td>
<td>Latin America (3-3)</td>
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<td>161A-161B</td>
<td>Mexico (3-3)</td>
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<td>162A-162B</td>
<td>History of Brazil (3-3)</td>
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<td>163A-163B</td>
<td>The Caribbean Area (3-3)</td>
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<td></td>
<td>164</td>
<td>The Pacific Coast Nations of South America (3)</td>
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<tr>
<td><strong>Portuguese</strong></td>
<td>131</td>
<td>Portuguese (3)</td>
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<tr>
<td></td>
<td>132</td>
<td>Portuguese (3)</td>
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<tr>
<td></td>
<td>133</td>
<td>Brazilian Literature (3)</td>
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<td><strong>Spanish</strong></td>
<td>104A-104B</td>
<td>Spanish-American Literature (3-3)</td>
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<td>105A-105B</td>
<td>Mexican Literature (3-3)</td>
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<tr>
<td></td>
<td>107</td>
<td>Caribbean Area Countries Literature (3)</td>
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<tr>
<td></td>
<td>108</td>
<td>Andean Countries Literature (3)</td>
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<td></td>
<td>109</td>
<td>River Plate Literature (3)</td>
</tr>
<tr>
<td></td>
<td>170</td>
<td>Spanish-American Poetry (3)</td>
</tr>
<tr>
<td></td>
<td>171</td>
<td>Spanish-American Short Story (3)</td>
</tr>
<tr>
<td></td>
<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)
- 235. Culture and Society in the Nahuat Area (3)
- 256. Cultures and Societies in Southern Meso-America and Central America (3)
- 257. Classical Nahuat (3)

#### Economics

- 295. Seminar in International Economics (when Latin-America included) (3)
- 296. Seminar in the Economics of Underdeveloped Countries (3)

#### Geography

- 220. Seminar in Regional Geography (when topic is Latin-America) (3)
LINGUISTICS

GENERAL INFORMATION

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 with classified graduate standing, 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:
   - Anthropology 120, Introduction to Anthropological Linguistics (3);
   - Anthropology 124, Descriptive Linguistics (3);
   - English 181, English Linguistics (3);
   - English 220, Indo-European (3);
   - English 299, Seminar in Linguistics (6);
   - Language 120. Thesis (3)

b. Nine units of electives, 3 units of which must be in 200-numbered courses approved by the student's graduate 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
T. S. Donahue
G. F. Drake
L. H. Frey
R. H. Hendrickson
R. H. Lawson
J. M. 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

<table>
<thead>
<tr>
<th>Anthropology</th>
<th>French</th>
<th>German</th>
</tr>
</thead>
<tbody>
<tr>
<td>120. Introduction to Anthropological Linguistics (3)</td>
<td>150. Advanced Phonetics and Diction (3)</td>
<td>150. German Phonology (3)</td>
</tr>
<tr>
<td>122. Language in Culture (3)</td>
<td></td>
<td>152. Middle High German (3)</td>
</tr>
<tr>
<td>124. Descriptive Linguistics (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>196. General Linguistics (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>180. The English Language (3)</td>
<td></td>
<td>111. Philosophy of Language (3)</td>
</tr>
<tr>
<td>181. The Structure of English (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>182. American English (3)</td>
<td></td>
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</tr>
<tr>
<td>183. English Linguistics (3) (same course as General Language 197)</td>
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<tr>
<td>197. Seminar in Linguistics (3)</td>
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<tr>
<td>220. Indo-European (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>221. Old English (3)</td>
<td></td>
<td></td>
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<tr>
<td>224. Middle English (3)</td>
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<tr>
<td>295. Seminar in Linguistics (3)</td>
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<tr>
<td>299. Thesis (3)</td>
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<tr>
<td>201. History of the French Language (3)</td>
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<tr>
<td>204. Seminar in Linguistics (3)</td>
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<tr>
<td>222. Historical Linguistics (3)</td>
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<tr>
<td>201. History of the German Language (3)</td>
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<tr>
<td>201. History of the French Language (3)</td>
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<tr>
<td>201. History of the German Language (3)</td>
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<tr>
<td>202. Middle High German Literature (3)</td>
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<tr>
<td>202. Middle High German Literature (3)</td>
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<tr>
<td>201. History of the German Language (3)</td>
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<tr>
<td>231. Semantics and Logical Theory (3)</td>
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<td></td>
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<tr>
<td>201. History of the Russian Language (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>202A-202B. Old Church Slavic (3-3)</td>
<td></td>
<td></td>
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<tr>
<td>203. Slavic Linguistics (3)</td>
<td></td>
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<tr>
<td>201. History of the Spanish Language (3)</td>
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<tr>
<td>201. History of the Spanish Language (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>270. Applied Spanish Linguistics for Teachers (3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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)
223. 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)
201. History of the German Language (3)
231. Semantics and Logical Theory (3)
201. History of the Russian Language (3)
202A-202B. Old Church Slavic (3-3)
203. Slavic Linguistics (3)
201. History of the Spanish Language (3)
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 plan a career in secondary or junior college teaching, or (3) who seek a broad background for careers in the mass media, business, or government service.

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 a bachelor's degree in journalism, radio-television, advertising, communications, sociology, or psychology. A student whose preparation is deemed insufficient by his graduate adviser or 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 as acceptable on master's degree programs, of which at least 18 units must be in 200-numbered courses, distributed among three departments cooperating in the degree program as follows:

| Department A | 2 units | Upper Division Courses |
| Department B | 3 units |
| Department C | 3 units |
| Total        | 8 units |

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
F. W. Hornbeck
S. A. Richards
D. G. Wylie

FACULTY

Coordinator of Graduate Programs in Mass Communications:
G. W. Sorensen

Department of Journalism

Professor: J. L. Julian, Ph.D.
Associate Professor: E. M. Odendahl, Ph.D.
Assistant Professors: J. K. Bucklew, Ph.D.; Jack Haberstroh, Ph.D.; G. W. Sorensen, 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

UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>Journalism</td>
</tr>
<tr>
<td>102. Law of Mass Communication (3)</td>
</tr>
<tr>
<td>118. The Foreign Press (3)</td>
</tr>
<tr>
<td>119. The International Cinema (3)</td>
</tr>
<tr>
<td>121. Current Problems in Mass Communications (3)</td>
</tr>
<tr>
<td>122. Public Opinion Measurement (3)</td>
</tr>
<tr>
<td>124. Social Psychology (3)</td>
</tr>
<tr>
<td>125. Advanced Editing Techniques (3)</td>
</tr>
<tr>
<td>126. Mass Communication and Society (3)</td>
</tr>
<tr>
<td>133. Problems in Public Relations (3)</td>
</tr>
<tr>
<td>177. Research Methods in Mass Communications (3)</td>
</tr>
<tr>
<td>183. Sociology of Mass Communications (3)</td>
</tr>
<tr>
<td>197. Investigation and Report (3)</td>
</tr>
<tr>
<td>Speech Communication</td>
</tr>
<tr>
<td>130. Semantics (3)</td>
</tr>
<tr>
<td>135. Theories of Human Communication (3)</td>
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<tr>
<td>193. Mass Persuasion (3)</td>
</tr>
<tr>
<td>198. Selected Topics in Speech Communication (3)</td>
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<tr>
<td>201. Broadcast Management (3)</td>
</tr>
<tr>
<td>205. Regulation of Broadcasting (3)</td>
</tr>
<tr>
<td>206. Scope and Method of Mass Communications (3)</td>
</tr>
</tbody>
</table>

APPLICABLE GRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journalism</td>
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<tr>
<td>110. Writing and Producing for Broadcasting (3)</td>
</tr>
<tr>
<td>117. Political Sociology (3)</td>
</tr>
<tr>
<td>118. Social Psychology (3)</td>
</tr>
<tr>
<td>120. Sociology of Mass Communications (3)</td>
</tr>
<tr>
<td>121. Mass Psychology (3)</td>
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<tr>
<td>122. Consumer Psychology (3)</td>
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<tr>
<td>123. Personnel and Industrial Psychology (3)</td>
</tr>
<tr>
<td>124. Organizational Psychology (3)</td>
</tr>
<tr>
<td>125. Social Psychology (3)</td>
</tr>
<tr>
<td>126. Introduction to Methods of Counseling (3)</td>
</tr>
</tbody>
</table>

206. Scope and Method of Mass Communications (3) 1
Intensive preparation in methodology applicable to the various fields related to mass media study.

202. Seminar: Mass Media and the Law (3) 1
Prerequisite: Journalism 102 or Telecommunications and Film 105.
Case studies of legal restrictions and guarantees affecting radio, television, motion pictures, advertising, and printed media.

217. Seminar: History of Journalism (3) II
Prerequisite: Journalism 117.
Directed research on topics of history of American journalism.
221. Seminar in Media Problems (3) I
Prerequisite: Six units in courses applicable to the Master of Science degree in Mass Communications.
Reading, investigation, and research concerning current topics in problems of mass media.

229. Mass Communications and Public Opinion (3) II
Prerequisite: Journalism 122 or 177.
Analysis of media and their opinion-shaping role; methods and effects of pressure groups; propaganda analysis; creation and perpetuation of images and stereotypes.

240. Major Projects in Mass Communications (1-6) I, II
Prerequisite: Journalism 121 or Telecommunications and Film 183.
Design and execution of an in-depth project in one of these areas: advertising campaign, series of detailed expository articles or news stories, or model public relations campaign. Maximum credit six units.

262. Seminar in Social Psychology (3) II
Prerequisite: Journalism 162.
Rights, responsibilities, and characteristics of media and mass communications practitioners; characteristics and responsibilities of audiences and society.

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

299. Thesis (3) I, II
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
Refer to graduate course descriptions in the sections of this bulletin under the headings of Psychology, Sociology, Speech Communication, and Telecommunications for courses listed below.

Mathematics

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.

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 satisfy the general requirements for advancement to candidacy, including the foreign language requirement in the non-teaching Master of Arts degree program, as stated in Part Three of this bulletin.

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 programs in mathematics, exclusive of Mathematics 202, 204A, 204B, 290, and 299. The student is required to pass a comprehensive examination consisting of at least 18 units in mathematics, selected from courses listed below as acceptable on master's degree programs in mathematics, of which at least 15 units must be in 200-numbered courses. The student is required to pass a final oral and written comprehensive examination in mathematics. With approval of the department, a student may elect Plan A, in which case the comprehensive examination will also cover the thesis. In other cases, Plan B will be followed.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN 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 selected from courses listed below as acceptable on master's degree programs in mathematics, of which at least 15 units must be in 200-numbered courses. The student is required to pass at least 15 units in mathematics from courses listed below as acceptable on master's degree programs in mathematics. The student is required to pass a final oral and written comprehensive examination in mathematics. With approval of the department, a student may elect Plan A, in which case the comprehensive examination will also cover the thesis. 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, the student must satisfy 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:

(a) Complete 15 units of 200-numbered mathematics courses, not including Mathematics 202, 204A, 204B, 290, and 299.
(b) Complete nine additional units of graduate level or approved upper division mathematics courses, not including Mathematics 290 or 299.
(c) Complete nine additional units of approved electives.
(d) Pass a final oral and written comprehensive examination in mathematics.

With the approval of the department, a student may elect Plan A, in which case the comprehensive examination will also cover the thesis. In other cases, Plan B will be followed.)
SPECIFIC REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE IN STATISTICS

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Three of this bulletin, the student must meet the following departmental requirements:

(a) Complete 18 units of 200-numbered mathematics courses including Mathematics 240A and 240B, but not including Mathematics 202, 204A, 204B, 299, and 299A. At least 6 of the remaining 12 units required for the degree should be selected from Mathematics 241, 242, 244, 245, 246, and 247.

(b) Complete six units of graduate level or approved upper division mathematics courses, not including Mathematics 290 or 299.

(c) Complete six units of approved electives.

(d) Pass a final oral and written comprehensive examination in mathematical statistics. (With the approval of the department, a student may select Plan A, in which case the comprehensive examination will also cover the thesis. 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: C. V. Holmes, Ph.D.

Graduate Advisors: Master of Arts in Mathematics, E. J. Howard; Master of Arts (Teaching), G. A. Becker; Master of Science in Mathematics, D. Sultz; Master of Science in Statistics, D. W. Macky

Credential Adviser: J. E. Eagle


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN MATHEMATICS AND STATISTICS

UPPER DIVISION COURSES

105. Introduction to the Foundations of Geometry (3)
106. Projective Geometry (3)
107. Non-Euclidean Geometry (3)
108. Differential Geometry (3)
121A-121B. Advanced Calculus (3-3)
124A-124B. Advanced Calculus (3-3)
128. Numerical Analysis (3)
135A-135B. Numerical Analysis and Computation (3-3)
137. Data Structures (3)
138. Combinatorial Principles for Digital Computers (3)
139. Programming Languages (3)
140A-140B. Mathematical Statistics (3-3)
141. Statistics, Theory and Applications (1)
143. Stochastic Processes (3)
144. Linear Algebra (3)
150A-150B. Modern Algebra (3-3)
152. Number Theory (3)
155. Mathematical Logic (3)
156. Logic in Mathematics (3)
158. Automata Theory (3)
160. Introduction to Topology (3)

170. Partial Differential Equations (3)
171. Functions of a Complex Variable (3)
181. Selected Topics of Secondary Mathematics (3)
196. Advanced Topics in Mathematics (2 or 3)


GRADUATE COURSES

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

202. Geometrical Systems (3)
Prerequisites: Mathematics 150A and an upper division course in geometry.
Ordered and affine geometries, decompositions, dilatations. Projectivities and projective space. Absolute geometry, isometries, groups generated by inversions.

203. Topics in Algebra (3)
Prerequisites: Mathematics 121A and 150A.
Unique factorization domains, rings and ideals, groups, algebraic field extensions. A course designed for secondary school teachers.

204A-204B. Topics in Analysis (3-3)
Prerequisites: Mathematics 121A and 150A. 204A is prerequisite to 204B.
Topics in analysis, including the real number system, convergence, continuity, differentiation, the Riemann-Stieltjes integral, complex analysis, designed to give the secondary teacher a broad understanding of the fundamental concepts.

205. Advanced Mathematical Logic (3)
Prerequisite: Mathematics 150A or 155.
First-order theories, completeness theorems, arithmetization, Gödel's incompleteness theorem.

212. Advanced Ordinary Differential Equations (3)
Prerequisites: Mathematics 119 and 121A.
Existence and uniqueness theorems, Wronskians, adjoint systems, Sturm-Liouville boundary value problems, equations of Eulerian type.

214. Advanced Partial Differential Equations (3)
Prerequisite: Mathematics 170.
Theory and application of the solution of boundary value problems in the partial differential equations of engineering and physics by various methods, orthogonal differential equations of engineering and physics by various methods, Green's functions, the Laplace transformation, other transformation methods, Green's functions.

220A-220B. Topology (3-3)
Prerequisite: Mathematics 160. Mathematics 220A is prerequisite to 220B.
Theory and application of the solution of boundary value problems in the partial differential equations of geometry and physics by various methods, orthogonal differential equations of engineering and physics by various methods, Green's functions, the Laplace transformation, other transformation methods, Green's functions.

222A-222B. Functional Analysis (3-3)
Prerequisites: Mathematics 149 and 160. Mathematics 222A is prerequisite to 222B.
Banach spaces, Hilbert spaces, spectral theory and Banach algebras.

224A-224B. Functions of a Complex Variable (3)
Prerequisites: Mathematics 121B and 175. Mathematics 224A is prerequisite to Mathematics 224B.
Analytic continuation, elliptic functions, conformal mapping, Riemann surfaces.

226A-226B. Functions of a Real Variable (3-3)
Prerequisite: Mathematics 121B. Mathematics 226A is prerequisite to Mathematics 226B.
Point sets, functions and limits, continuity, differentiations, Riemann and Lebesgue integration.
227. Fourier Analysis (3)
Prerequisites: Mathematics 121A, 140, and 150.
Fourier series on the real line and on groups, spectral theorems. Tauberian theorems.

228. Generalized Functions (3)
Prerequisites: Mathematics 121A, 149, and 150.
Schwartz Distribution Theory, and constructive theory with application to Fourier analysis and differential equations.

230. Rings and Ideals (3)
Prerequisite: Mathematics 150B.
A development of the theory of rings.

231. Theory of Groups (3)
Prerequisite: Mathematics 150B.
A development of the theory of groups.

232. Theory of Fields (3)
Prerequisite: Mathematics 150B.
A study of both finite and infinite fields, and field extensions.

233. Linear Algebra and Matrix Theory (3)
Prerequisite: Mathematics 149.
A study of matrices, determinants, and vector spaces.

240A-240B. Advanced Mathematical Statistics (3-3)
Prerequisites: Mathematics 140B and 121A. Mathematics 240A is prerequisite to Mathematics 240B.
Theories of common distribution functions, derivation of sampling distributions with emphasis on normal populations, estimation of maximum likelihood, ratio tests of parametric hypotheses, general linear hypothesis theory.

241. Advanced Probability (3)
Prerequisites: Mathematics 121A and 114.
Probability spaces, integration of random variables, convergence in probability, product spaces and product measures; conditional measures and independent measures.

242. Non-parametric Statistics (3)
Prerequisite: Mathematics 140B.
Tolerance regions, randomness problems, most powerful rank tests, the invariance method, consistency and efficiency of tests.

243. Advanced Hypothesis Testing (3)
Prerequisite: Mathematics 140B.
Sequential probability ratio tests, confidence intervals, minimax and invariance principles.

244. Multivariate Analysis (3)
Prerequisites: Mathematics 140B and 149.
Multivariate normal distributions, multivariate analysis of variance, factor analysis, canonical correlation.

245. Linear Statistical Hypothesis Testing (3)
Prerequisites: Mathematics 140A and 149.
The Multivariate Normal distribution; distribution of 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-

247. Design of Experiments (3)
Prerequisites: Mathematics 140A and 149.
Experimental design models, a basic approach as well as a matrix algebra approach.

260A-260B. Theory of Computability (3-3)
Prerequisites: Mathematics 137 and 138.
Turing machines and their variants, Gödel numbering and unsolvability results. Models of computation.

265A-265B. Formal Languages and Syntactic Analysis (3-3)
Prerequisites: Mathematics 116 and 119.
Definition of formal grammars; Arithmetic expressions and precedence grammars, context-free and finite-state grammars. Algorithms for syntactic analysis. Relationship between formal languages and automata.

268A-268B. Applications of Digital Computation (3-3)
Selected topics for information retrieval, artificial intelligence, theorem proving by computer, simulation, computer graphics, learning theory, computer-assisted instruction.

270A-270B. Advanced Numerical Analysis (3-3)
Prerequisites: Mathematics 121A and 135B.

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 (1-3)
Prerequisite: Six units of graduate level mathematics.
Research in one of the fields of mathematics. Maximum credit six units applicable on a master's degree.

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

299. Thesis or Project (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.
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 290.

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 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 documentation 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.
Credit Advisors: P. V. Anderson; Norman Rost; J. D. Smith; M. S. Snider

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)
123S. Workshop in Instrumental Techniques and Chamber Music for Strings, Woodwind, and Brass Instruments (2)
141A-141B. Applied Music Pedagogy (3-3)
142A-142B. Applied Music Pedagogy Laboratory (2-2)
146A. Choral Conducting (1)
146B. Instrumental Conducting (1)
152A-152B. History of Music (3-3)
153. Opera Technique (2)
134A. Chamber Music Literature-Strings (2)
154A. Small Wind and Percussion Ensemble Literature (2)
154B. Chamber Music Literature (2)
154C. Symphonic Literature (2)
154D. Keyboard Literature (2)
154E. Song Literature (2)

GRADUATE COURSES

206. Seminar in Music Education (3)
Prerequisite: Consent of instructor.

Seminars in music education are offered to provide an opportunity for concentrated study in the several areas listed:
A. Development and Teaching of Strings
B. Choral and Vocal Techniques
C. General Music

201. Foundations of Music Education (3)
History and philosophy of music education in relation to current trends in the teaching of music.

202. Administration and Supervision of Music Education (3)
Curriculum, scheduling, finance, human relations, organizational aspects, and the role of the supervisor-consultant.

204. Comparative Music Education (3)
Various international philosophical and technical approaches to teaching music to include the Orff, Kodaly, Suzuki and other systems.

207. Composition (2 to 3)
Prerequisite: Music 107.
Advanced composition for various media, development of original idiom, intensive study of modern music. Public performance of an extended original work as a project.

208. History and Development of Music Theory (3)
Prerequisites: Music 108 and 152B.
A survey of important theoretical approaches to music, from pre-Socratic writers to the present.
209. Advanced Orchestration (2)
Prerequisite: Music 109B.
Intensive work in the practical scoring for ensemble, full orchestra, and symphonic band. Score analysis. Selected works of the class members will be performed.

210. Electronic Music (3)
Prerequisite: Undergraduate concentration in composition. Theory, techniques, and composition of various kinds of electronic music.

211. Analytical Studies of Music (3)
Prerequisite: Music 106. Melodic, formal, contrapuntal, and harmonic analysis of music.

212. Advanced Contrapuntal Techniques (3)
Prerequisites: Music 59B and 106. Traditional and contemporary contrapuntal styles. The development of contrapuntal skills through writing.

213. Seminar: Music Theory (3)
Prerequisites: Music 59B and 106. Principles of traditional harmony and ear-training.

246A. Advanced Choral Conducting (2)
Prerequisite: Music 146B. Course designed to develop skills at professional level; study of different styles of choral literature and their relationship to conductor's art; score analysis and experience in conducting.

246B. Advanced Instrumental Conducting (2)
Prerequisite: Music 146B. Course designed to develop skills at professional level; study of conducting style as related to band and orchestra literature score analysis and experience in conducting.

250. Applied Music—Advanced Individual Study (2)
For the graduate student who qualifies for advanced study through an audition before the Music Department faculty. See explanation in the general catalog, under Music, for conditions under which credit may be given for music study under private instructors. May be repeated to a maximum of four units.

A. Piano G. Saxophone N. Tuba T. Harp
B. Organ H. Bassoon O. Percussion U. Classical Guitar
C. Voice J. French Horn P. Violin V. Composition
D. Flute K. Trumpet Q. Viola X. Classical
E. Oboe L. Trombone R. Cello Y. Harpsichord
F. Clarinet M. Baritone Horn S. Contrabass

252. Seminar in Music History (3)
Prerequisites: Music 152B and consent of instructor. Seminars in music history are offered for intensive study in each of the historical eras listed below.
A. Music of the Middle Ages and Renaissance
B. Music of the Baroque Era
C. Music of the 18th and 19th Centuries
D. Twentieth Century Music
E. American Music

253. Musicology (3)
Prerequisites: Music 152A and 152B. Problems and research in musicology. Projects in bibliography, source materials, music history, criticism, aesthetics, and related fields. Writing and presentation of a scholarly paper. (Formerly numbered 203.)
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 or a related major, 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 complete a graduate program to include the following:
(1) A minimum of 24 units in philosophy from courses listed below as acceptable on master's degree programs. At least 18 of these units must be in 200-numbered courses, including Philosophy 299, Thesis. The remaining electives (6 units) must be selected with the approval of the adviser from courses in philosophy, in related disciplines, or in courses required for the junior college credential.
(2) Demonstrate a reading knowledge of French or German.

FACULTY
Chairman, Department of Philosophy: Patricia A. Crawford, Ph.D.
Graduate Advisor: Peter O'Reilly
Associate Professors: Jack McClurg, Ph.D.; S. N. Weissman, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PHILOSOPHY

UPPER DIVISION COURSES

102. History of Philosophy II (3)
104. History of Philosophy IV (3)
105A-105B. Twentieth Century Philosophy (3-1)
108. Recent Existentialism (3)
109. Ordinary Language Analysis (3)
110. Philosophy of Law (3)
121. Deductive Logic (3)
122. Inductive Logic (3)
123. Theory of Knowledge (1)
125. Metaphysics (1)
127. Values and Social Sciences (3)
128. Theory of Ethics (3)
131. Philosophy of Language (3)
132. Philosophy of History (3)
133. Philosophy of Education (3)
135. Philosophy of Religion (3)
137. Philosophy of Science (3)
141. History of Aesthetics (3)
142. Philosophy of Art (3)
150A-150B. Asian Thought (3-1)
164. American Philosophy (3)
175. A Major Philosopher (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., Contemporary Issues in the Philosophy of Science). 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.

221. Deductive Logic (3)
Prerequisites: 12 upper division units in philosophy including Philosophy 121, A comparison of deductive systems in logic. Problems of definitability, consistency, and completeness. The role of logic in the foundations of mathematics.

222. 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.

226. Seminar in Ethics (3)
Prerequisite: 12 units of upper division work in philosophy including Philosophy 135, A philosophical investigation of the nature of religious thought: its structure, growth, and significance.

231. Semantics and Logical Theory (3)
Prerequisites: 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 East-West Philosophy (3)
Prerequisites: 12 upper division units in philosophy including Philosophy 150A. 
Comparative study of mythological, ethical, and mystical themes in the literature 
of East and West.

298. 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 can-
didacy. 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.

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 the stu-
dent 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 18 units in 
physical education selected from courses listed in this bulletin as acceptable on 
master’s degree programs, of which at least 15 units must be in 200-numbered 
courses. Physical Education 291, Research Techniques, and either Physical Educa-
tion 299, Thesis (Plan A), or Physical Education 298, Seminar (Plan B), are 
required. Students electing Plan B must pass a final written and oral compre-
sive examination. Each candidate will be required to complete an area of specialI-
ization after consulting the graduate adviser.

ASSISTANTSCHIPS
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: W. H. Phillips, Jr., Ed.D.
Graduate Adviser: Paul Governali
Tollefson, M.A.; George Ziegenvius, Ed.D.
Associate Professors: H. H. Broadbent, M.S.; Mary F. Cave, M.A.; Patricia Cullen, 
Ph.D.; Kathleen Fox, Ph.D.; W. H. Schutte, M.S.; R. W. Wells, M.A.
Assistant Professors: Joan F. Barone, M.S.; E. P. Franz, M.A.; Abraham Fried-
man, M.A.; Claude Gilbert, M.A.; Cynthia Hollyfield, M.A.; R. J. Moore, Jr., 
M.S.; Dennis Selder, Ph.D.; Beverly A. Smith, M.S.; Jean Sprunt, M.S.; Anthony 
Sucee, Ed.D.; Joan Whitby, M.S.; Betty J. Wilhelm, M.A.; Gloria R. William-
son, M.A.; Earnest Zampese, M.A.
### COURSES ACCEPTABLE ON MASTER’S DEGREE PROGRAMS IN PHYSICAL EDUCATION

#### UPPER DIVISION COURSES

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<th>Course Title</th>
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<td>157A-157B</td>
<td>Choreography in Contemporary Dance (Men and Women) (1-3)</td>
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<tr>
<td>160.</td>
<td>Mechanics of Body Movement (Women) (1)</td>
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<td>161.</td>
<td>The Psychological Bases of Physical Education (3)</td>
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<tr>
<td>162.</td>
<td>Measurement and Evaluation in Physical Education (3)</td>
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<td>164.</td>
<td>Athletic Injuries (Sports Medicine) (2)</td>
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<td>167.</td>
<td>Applied Anatomy and Kinesiology (3)</td>
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<td>168.</td>
<td>Physiology of Exercise (3)</td>
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<td>169.</td>
<td>Adapted Activities (2)</td>
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<td>170.</td>
<td>History and Philosophy of Dance (2)</td>
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<td>171.</td>
<td>Curriculum in Physical Education (3)</td>
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<td>172.</td>
<td>Seminar (3)</td>
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<td>173.</td>
<td>Current Trends and Issues in Physical Education (3)</td>
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<td>174.</td>
<td>Problems in Recreation (3)</td>
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<td>175.</td>
<td>Physical Education (3)</td>
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<td>176.</td>
<td>Advanced Physiology of Exercise (3)</td>
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<td>177.</td>
<td>Advanced Kinesiology and Biomechanics (3)</td>
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<td>178.</td>
<td>Advanced Exercise Physiology Laboratory (3)</td>
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<td>179.</td>
<td>Problems in Physical Education (3)</td>
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<td>180.</td>
<td>Philosophy of Physical Education (3)</td>
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<tr>
<td>181.</td>
<td>Advanced Anatomy and Physiology of Exercise (3)</td>
</tr>
<tr>
<td>182.</td>
<td>Advanced Adapted Activities (3)</td>
</tr>
</tbody>
</table>

#### GRADUATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>200.</td>
<td>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.</td>
</tr>
<tr>
<td>201.</td>
<td>Curriculum in Physical Education (3) Prerequisite: Major or minor in physical education, or equivalent.</td>
</tr>
<tr>
<td>202.</td>
<td>Administration of Physical Education in the Secondary Schools (3) Prerequisite: Major or minor in physical education, or equivalent.</td>
</tr>
<tr>
<td>203.</td>
<td>History of Physical Education (3) Historical forces guiding the development of physical education from ancient to modern times.</td>
</tr>
<tr>
<td>204.</td>
<td>Problems in Recreation (3) Same course as Recreation 204. Current problems facing the recreation profession, through a review of literature, discussion of trends, and observation of school and community situations. Analysis and evaluation of actual problems. Written reports required.</td>
</tr>
<tr>
<td>206.</td>
<td>Seminar in Competitive Athletics (3) Prerequisite: Major or minor in physical education or recreation. Knowledge and appreciation of the skills, techniques, and teaching methods involved with the coaching of athletics; the study of possible solutions to problems associated with the program of competitive school athletics.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>210.</td>
<td>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.</td>
</tr>
<tr>
<td>211.</td>
<td>Advanced Evaluation in Physical Education (3) Prerequisite: Physical Education 151. 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.</td>
</tr>
<tr>
<td>212.</td>
<td>Problems in Physical Education (3) Prerequisite: Major or minor in physical education. A study of selected areas of the physical education program.</td>
</tr>
<tr>
<td>213.</td>
<td>Seminar in Dance Programs (3) Prerequisite: Major or minor in dance or physical education.</td>
</tr>
<tr>
<td>214.</td>
<td>Exercise Electrocardiography (3) Principles of resting and exercise electrocardiography with emphasis on ergometric methods and application to exercise physiology.</td>
</tr>
<tr>
<td>215.</td>
<td>Advanced Exercise Physiology Laboratory (3) Nine hours of laboratory. Prerequisite: Physical Education 169. A laboratory course designed to develop competency in respiratory metabolism and environmental systems. Experience in pulmonary function, gas analysis, blood chemistry, and endocrinology. The course includes correlation of physiological processes with the associated health problems of an automated environment.</td>
</tr>
<tr>
<td>216.</td>
<td>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.</td>
</tr>
<tr>
<td>217.</td>
<td>Research Techniques (3) Prerequisites: Major in Physical Education, and Physical Education 151 and 167. Study of psychological factors and cognitive processes involved in learning and performance. The development of practical designs and the interpretation of research results. (Prerequisite to thesis.)</td>
</tr>
</tbody>
</table>
295. Seminar in Physical Education (3)
Prerequisites: Physical Education 291 and advancement to candidacy for the master's degree in physical education.
Selected subjects in physical education culminating in written projects. Limited to students following Plan B for the Master of Arts degree in Physical Education.

298. Special Study (1-3)
Prerequisite: Consent of special study adviser.
Individual study. Six units maximum credit.

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

PHYSICAL SCIENCES

GENERAL INFORMATION
The Department of Physical Science, in the College of Sciences, offers graduate study leading to the Master of Arts degree for teaching service in the Physical Sciences with a concentration in astronomy, chemistry, geology, and physics. This curriculum is designed specifically for prospective teachers in the fields of the physical sciences.

ADMISSION TO THE GRADUATE DIVISION
All applicants for the degree 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 undergraduate preparation in the physical sciences must have substantially satisfied the undergraduate requirements for a bachelor's degree in the physical sciences. (Refer to the general catalog for a description of this major.) 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 ARTS DEGREE FOR TEACHING SERVICE
In addition to meeting the requirements for admission to the Graduate Division with 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 a program of 30 units, of which at least 15 must be in 200-numbered courses. A minimum of 18 units must be in the physical sciences, (astronomy, chemistry, geology, physical science, or physics), with at least 6 units in each of two fields. Of the 18 units, 6 units must be 200-numbered courses. The program must be approved by the Coordinator of Science Education. With the approval of the adviser, the student may select Plan A or Plan B. If Plan B is selected, the department will require a comprehensive examination in lieu of the thesis.

FACULTY
Chairman, Department of Physical Science: N. F. Dessel, Ph.D.
Graduate Adviser: D. E. Ingmanson
Coordinator of Science Education: N. F. Dessel
Associate Professor: C. M. Shull, Ph.D.
Faculty members in the Departments of Astronomy, Chemistry, Geology, and Physics are listed in the appropriate sections of this bulletin.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN THE PHYSICAL SCIENCES

With the approval of the graduate adviser and the Coordinator of Science Education, 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 290. Seminar (2 or 3)
An intensive study in advanced physical science, topic to be announced in the class schedule. Maximum credit six units applicable on a master's degree.

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.

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. The undergraduate 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. An unclassified graduate student is subject to evaluation as to his 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 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, 205, 219, 270A, 275A, 297 (3 units), and 299. 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 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, 205, 270A, 297 (3 units), and 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.

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. Tempelin, Ph.D.
Graduate Adviser: Master of Arts and Master of Science, J. G. Teasdale
CREDENTIAL ADVISER: L. E. Smith, Jr.
Morris, Ph.D.; L. L. Skoii, Ph.D.; L. E. Smith, Jr., Ph.D.; Henschell Snodgrass,
Ph.D.; J. G. Teasdale, Ph.D.; J. D. Tempelin, Ph.D.; G. H. Wolter, M.S.
Associate Professors: P. F. Nichols, Ph.D.; R. J. Piscerchio, Ph.D.; D. E. Rehfuss,
Ph.D.; F. A. Wolf, Ph.D.
Assistant Professors: D. M. Cottrell, Ph.D.; R. L. Craig, M.S.; R. A. Lilly, Ph.D.;
S.B. W. Roeder, Ph.D.; Jack Sarfatt, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS
IN PHYSICS

UPPER DIVISION COURSES

106. Optics (3)
114. Acoustics (3)
122. Senior Physics Laboratory (2)
146. Nuclear Physics Laboratory (3)
151. Nuclear Physics (3)
152. Transients in Linear Systems (3)
153. Analog Computers (3)
156. Digital Computers (3)
167B. Semiconductor Devices (3)
173B. Physical Electronics (3)
175. Advanced Mechanics (2)
180. Solid State Physics (3)
190. Introductory Quantum Mechanics (3)
196. Advanced Physics (2 or 3)

GRADUATE COURSES

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

205. Theoretical Mechanics (3)
Prerequisite: Physics 175.
Mechanics utilizing vector and tensor methods. Study of the motion of rigid
bodies, vibration, coupled circuits. Lagrange's and Hamilton's equations. Principle
of least action.

210A-210B. Mathematics of Physics (3-3)
Prerequisites: Mathematics 119 and 170 or equivalent. 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.

214. Advanced Acoustics (2)
Prerequisite: Physics 114.
The acoustic wave equation in two and three dimensions. Propagation of sound
in bounded media and enclosures. Radiation and scattering. Electrical-mechanical-
acoustical elements and circuits.

219. Statistical Mechanics (3)
Prerequisites: Physics 112, 175, and 190.
Classical and quantum statistics, kinetic theory, low pressure phenomena, Boltz-
mann transport equation, irreversible processes.

220. Radiation Physics (2)
Prerequisites: Physics 148 and 151.
Topics in nuclear radiation phenomena, including interaction of radiation with
matter; radiation detectors.

221. Radiological Physics (2)
Prerequisites: Physics 148 and 151.
Topics and problems in radiological physics.

245A-245B. Reactor Theory (2-2)
Prerequisites: Physics 151 and 190.
Theory of chain reactions and their application to the operation of various types
of reactors. Kinetics, theoretical design, and control of reactors in relation to the
fundamental nuclear processes.

248. Reactor Laboratory (2)
Prerequisites: Chemistry 170, Physics 148, and concurrent registration in Physics
245A-245B.
Measurement of the static and dynamic characteristics of a reactor. Reactor oper-
ation, reactor radiation, neutron flux properties and temperature effects. Use of the
reactor as an experimental tool.

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 171, 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 prop-
erties of dielectrics, semiconductors, and metals.

297. Research (Credit to be arranged)
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.

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GRADUATE FACULTY

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 the 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 affiliate member of the Inter-University Consortium for Political Research.

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 30 units of social science including at least 12 upper division units in political science as approved by the department, 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 degree program of which at least 15 units must be in 200- and 300-numbered courses in Political Science and 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 Department of Political Science.

FACULTY

Acting Chairman, Department of Political Science: D. H. Johns, Ph.D.
Graduate Adviser: D. H. Johns

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN POLITICAL SCIENCE

UPPER DIVISION COURSES

100A-100B. Research Methods in Political Science (3-3)
105. American Political Thought (3)
111A-111B. Theory of the State (3-3)
112. Modern Political Thought (3)
113. The Theory of Political Inquiry (3)
114. Problems in Political Theory (3)
116. American National Government (3)
118. Urban Politics (3)
119. Community Political Behavior (3)
120. Political Parties (3)
121. Political Behavior (3)
122. Political Communication (3)
125. Contemporary American Politics (3)
126. The Legislative Process (3)
127A-127B. Constitutional Government (3-3)
130. Government and Public Policy (3)
135. The Supreme Court and Contemporary Issues (3)
138. Law and the Political System (3)
139A-139B. American Constitutional Politics (3-3)
140. American Constitutional Law (3-3)
165. Dynamics of Modern International Relations (3)
170A-170B. International Relations (3-3)
171. The Conduct of American Foreign Relations (3)
172. International Organization (3)
173. Principles of International Relations (3)
174. National Security Policy (3)
175. International Relations of the Mexican States (3)
176. International Relations of Developing Nations (3)
177. Comparative Foreign Politics (3)
180. Government of England (3)
181. Government of the Soviet Union (3)
183. Governments and Politics of South and Southeast Asia (3)
184. The Mexican Political System (3)
185. Governments of Continental Europe (3)
186. Comparative Communist Governments (3)
187. Governments and Politics of the Far East (3)
188. Governments and Politics of the African States (3)
189. Government and Politics of the Middle East (3)
190. Comparative Political Systems (3)
191. Government and Politics of the Developing Areas (3)
192. Political Change in Contemporary America (3)
193. Proseminar in Cross-National Studies (3)
194. Political Change in Latin America (3)
195. Political Systems in Latin America (3)

GRADUATE COURSES

200. Seminar in the Scope and Method of Political Science (3)
210. Seminar in Political Theory (3)
215. Seminar in American National Government (3)
220. Seminar in Politics (3)
221. Seminar in Political Participation (3)

Prerequisite: Six units of upper division political science, three units of which must come from Political Science courses 115 through 134.

Prerequisite: Six units of upper division political science, three of which must be from Political Science courses 115 through 134.

American political culture and subculture groupings as related to various dimensions of political behavior.
225. Seminar in the Legislative Process (3)
Prerequisite: Six units of upper division political science.
Legislative institutions and processes. Emphasis on U.S., national, state, and local legislatures.

226. Seminar in Political Psychology (3)
(Same course as Psychology 226.)
Prerequisites: Six units selected from Psychology 110, 112, 145; Political Science 100A, 100B, 121, 122, 190.
Psychological factors on the individual's political behavior; psychological theory as it applies to political variables such as ideology, conflict, consensus, and participation.

230. Seminar in Public Law (3)
Maximum credit six units applicable on a master's degree.

235. 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.

230. Seminar in International Relations (3)
Maximum credit six units applicable on a master's degree.

270. Seminar in International Relations (3)
Prerequisite: Political Science 170A or 170B.
Theoretical concepts used in the study of international political systems. Maximum credit six units applicable on a master's degree.

272. Seminar in International Organization (3)
Prerequisite: Political Science 172.
Analysis of selected problems of international organization with special reference to those of the United Nations. Oral and written reports.

275. Seminar in Theories of International Relations (3)
Prerequisite: Political Science 170A or 170B.
Theoretical concepts used in the study of international political systems. Maximum credit six units applicable on a master's degree.

270. Seminar in Western Political Systems (3)
Prerequisite: Political Science 190 or 191, and three additional units of upper division political science.
The field of comparative politics, including historical developments, major theoretical approaches, substantive concerns, uses and limitations of the comparative method, methodological innovations in study of foreign political systems.

282. Seminar in Latin American Political Systems (3)
Prerequisite: Political Science 190 or 191, and three additional units of upper division political science.
Political developments in selected Latin American nations, with an emphasis on the Mexican political system.

284. Seminar in Communist Political Systems (3)
Prerequisite: Six units of upper division political science.
The differences and similarities among Communist nations in Europe and Asia, with particular reference to instruments of power and ideology. A comparison of Communist ruling techniques and processes.

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

291. Problem Analysis (3)

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.
PSYCHOLOGY

GENERAL INFORMATION

The Department of Psychology, in the College of Sciences, offers graduate study leading to the Master of Arts degree in Psychology for students who plan to pursue their graduate education through to the doctorate without interruption upon receipt of their master's degree. The doctorate in psychology is not now offered at San Diego State. Since most doctoral programs require candidates to be able to translate publications in two of these languages, extensive modern resources are available on campus, at the San Diego Zoo, and in other community facilities for graduate education and research in comparative, experimental, and physiological psychology. Clinical clerkship and practicum facilities are available on campus and in such local agencies as the San Diego County Clinic of San Diego, and in the Guidance Department of the San Diego City Schools. Opportunities for experience in industrial-psychology and in human factors are available in the aerospace and other local industries, and at nearby military research and personnel-processing units.

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. To qualify for admission to classified graduate standing in psychology, the student must have:

(a) An undergraduate major in psychology, consisting of at least 24 upper division units, with a grade point average at least 3.0. The major must include laboratory psychology, in general psychology, physiological psychology, statistical methods, psychological testing, theories of personality, and at least two courses in psychology are available.

(b) A grade point average of not less than 3.0 in the last 60 units of his undergraduate program.

(c) A score above the 50th percentile rank on the Graduate Record Examination Advanced Test in Psychology. The student should take this test during the last semester of his undergraduate major in the field or immediately upon completion of the major.

ADVANCEMENT TO CANDIDACY

The student must satisfy the general requirements for advancement to candidacy as stated in Part Three of this bulletin.

GENERAL REQUIREMENTS FOR ALL MASTER'S DEGREE PROGRAMS

In addition to meeting the requirements for admission to the Graduate Division, with classified graduate standing and the basic requirements for the master's degree program of at least 30 units approved by the departmental graduate adviser, all students who have completed at least 24 upper division units in psychology of the course, their second semester, and the alternate half enrollment in Psychology 202A or 202B their first graduate semester, and the alternate half enrollment in Psychology 202A or 202B, but unclassified graduate students are not permitted to enroll in any other 200-numbered course in psychology except with the approval of the graduate adviser. Psychology 202A or 202B may be included in an individual's program.

The master's degree program consists of the following requirements: Specialized courses, not including Psychology 201 may be included at the discretion of the graduate adviser. The student must complete a graduate essay with a suitable title and defend the same in accordance with the Departmental requirements. The student must also have a minimum of 30 units approved, including Psychology 201, 202A or 202B, 223, 225, 297, and 299. Psychology 270 is required for the program if similar content has not been completed as an undergraduate.

Assistant Professors: Funderson, PhD.; F. M. Hornbeck, PhD.; P. E. Smith, PhD.; J. R. Smith, PhD.; Donald Pollack, PhD.; S. A. Richards, PhD.; R. M. Yarncro, PhD.; J. P. Shepho, PhD.; P. S. Speer, PhD.; R. M. Yarenko, PhD.
COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN PSYCHOLOGY

**UPPER DIVISION COURSES IN PSYCHOLOGY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>108. Advanced Developmental Psychology</td>
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<tr>
<td>109. Mental Deficiency</td>
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<td>111. Experimental Psychology: Perception</td>
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<td>112. Experimental Psychology: Social</td>
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<tr>
<td>113. Experimental Psychology: Physiological</td>
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<td>114. Experimental Psychology: Comparative</td>
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<tr>
<td>115. Experimental Psychology: Personality</td>
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<td>116. Experimental Psychology: A</td>
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<td>117. Experimental Psychology: Primate Behavior</td>
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<tr>
<td>118. Experimental Psychology: Child Development</td>
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<td>121. Personnel and Industrial Psychology</td>
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<td>122. Public Opinion Measurement</td>
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<td>123. Organizational Psychology</td>
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<td>124. Engineering Psychology</td>
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<td>125. Human Factors Psychology</td>
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<td>141. Neural Bases of Behavior</td>
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<td>142. Physiological Psychology</td>
<td>(3)</td>
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<tr>
<td>146. Advanced Topics in Social Psychology</td>
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<td>150. Abnormal Psychology</td>
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<td></td>
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<td>152. Introduction to Methods of Counseling</td>
<td>(3)</td>
<td></td>
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<tr>
<td>153. Advanced Abnormal Psychology</td>
<td>(3)</td>
<td></td>
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<tr>
<td>171. Intermediate Correlational Analysis</td>
<td>(3)</td>
<td></td>
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<tr>
<td>174. Theories of Perception</td>
<td>(3)</td>
<td></td>
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<tr>
<td>176. Principles and Practice of Personnel Training</td>
<td>(4)</td>
<td></td>
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<tr>
<td>179. Philosophical Issues in Psychology</td>
<td>(3)</td>
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<tr>
<td>200. Seminar (3)</td>
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<tr>
<td>226. Seminar in Personnel Psychology (3)</td>
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<tr>
<td>230. Seminar in Physiological Correlates of Behavior (3)</td>
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<td>235. Seminar in Political Psychology (3)</td>
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<td>238. Seminar in Theoretical Psychology (3)</td>
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<tr>
<td>244. Advanced Experimental (3)</td>
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</table>

**GRADUATE COURSES**

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, 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 of assessment of intelligence and special abilities.

205. Psychological Assessment II (4)

Two lectures and six hours of laboratory. Prerequisites: Psychology 131, 204, and consent of the Graduate Adviser. Theory and practice in assessment of personality and behavior disorders.

211. Behavior Disorders of Childhood and Adolescence (3)

Two lectures and three hours of laboratory. Prerequisites: Psychology 106, 150, 151, and consent of the Graduate Adviser. Contemporary approaches to emotional and behavioral problems of children and youth. Considers developmental, cognitive, and social variables as well as theory and treatment.

212. Behavior Disorders of Adults (3)

Two lectures and three hours of laboratory. Prerequisites: Psychology 150, 151, and consent of the Graduate Adviser.

219. Seminar in Personnel Psychology (3)

Prerequisites: Psychology 121, and consent of the Graduate Adviser. Problems and procedures in selection, classification, and performance appraisal. Factors influencing human behavior with stress on the independent variable. Special attention is given to sources of error, limitations on interpretations, and participation. (Same course as Political Science 226.)

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.

228. Seminar in Politics (3)

Prerequisites: Six units selected from: Psychology 110, 112, 145, Political Science 100A-100B, 121, 122, 190, and consent of the Graduate Adviser. Methods, techniques, and apparatus applicable to questions of various types. Psychological factors on the individual's political behavior; psychological theory of political variables such as ideology, conflict, consensus, and participation. (Same course as Political Science 226.)

230. Seminar in Physiological Correlates of Behavior (3)

Prerequisites: Psychology 50, 113 or 142, or nine units of biology; and consent of the Graduate Adviser. An exploration of current research and theory in physiological psychology with emphasis on behavioral correlates and psychophysiology.

231. Seminar in Ethology and Comparative Psychology (3)

Prerequisites: Psychology 114 or Biology 110, and consent of the Graduate Adviser.
Current problems in ethology and comparative animal behavior. Maximum credit six units applicable on a master's degree. (Same course as Biology 231.)

223. Counseling and Psychotherapy Laboratory (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 110, 151, 152, 175, 178, and consent of the Graduate Adviser.
Supervised research and practice in interpersonal encounter, with emphasis on the attainment of personality change.

270. Statistical Theory (3)
Prerequisites: Psychology 70, 105, and consent of the Graduate Adviser.
Quantitative methods in psychology with emphasis on theories of chi-square, and the analysis of variance and co-variance.

275. Advanced Principles of Learning (3)
Prerequisites: Psychology 110, and consent of the Graduate Adviser.
The empirical data, basic principles and theoretical positions of major learning theories.

277. Seminar in the History of Psychology (3)
Prerequisites: Psychology 110, and consent of the Graduate Adviser.
The history of modern psychology.

278. Directed Field Experience (1-3)
Prerequisites: Limited to classified graduate students in psychology, with appropriate qualifications in a field of professional skill.
The student must arrange his practicum setting in cooperation with the chairman of the Psychology Department Practicum Committee and with the express approval of the Graduate Adviser. The student must complete at least 600 hours of field experience during the semester prior to enrolling for credit in this course. Maximum credit six units.

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

298. Special Study (1-3)
Individual projects involving library or laboratory research in any area of psychological investigation or interest. Maximum credit six units.

299. Thesis (3)
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree. Credit is contingent upon acceptance of the completed thesis by the Department of Psychology.

PRIVATE 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, and the Master of City Planning degree. Research facilities provided include the Institute of Public and Urban Affairs, the Public Administration Center, and the Political Science Methodology Center. The San Diego metropolitan community affords significant internship opportunities for the graduate student in federal, state, and local government agencies.

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 personnel administration, fiscal policy and administration, recreation administration, urban administration, or correctional administration. Since management responsibilities are shared by administrators in a number of professional areas, the public service, the student is encouraged to supplement his study of government and administration with graduate courses in economics, sociology, psychology, business administration, and other related areas.

ADMISSION TO 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 satisfy graduate standing, as described in Part Three of this bulletin. The student must satisfy the following requirements: (1) have completed at least 30 undergraduate units in approved social science courses (students with unclassified graduate standing may remove deficiencies in this requirement by taking courses which are approved for social science credit), (2) have maintained a minimum average of at least 3.0 (B) in the major field. An undergraduate grade point average of not less than 1.0 (B) in the major field.

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 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 as a part of his program: (1) at least eighteen units of 200-numbered courses, including Public Administration 201, and six units or more of the following seminars: Public Administration 201, six units or more of the following seminars: Public Administration 201, 241, 242, 249, 260, and Political Science 270 and 280; (2) a minimum of twelve units of upper division graduate courses in public administration or twelve units of upper division or graduate courses in public administration or twelve units of upper division or graduate courses in public administration; (3) a minimum of twelve units of upper division or graduate courses in public administration; (4) a minimum of twelve units of upper division or graduate courses in public administration; (5) a minimum of twelve units of upper division or graduate courses in public administration.

The student must include in his program Public Administration 299, 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 sociology, geography, political science, economics, architecture, or landscape architecture, or any fields related to planning. (Students with degrees other than those listed may be allowed to enter the program under appropriate conditions); (2) have had a minimum of 6 units in political science, 6 units in sociology, 6 units in economics, and 3 units in geography, or the equivalent of these courses. In the event that deficiencies occur in a student's background and training, the graduate committee will examine the student's past record, and recommend a program to make up the deficiencies.

Students seeking admission to the graduate program in urban planning which leads to the Master of City Planning degree should address their inquiries to the Director of the program. Detailed instructions concerning application procedures will be sent to the applicant along with all necessary forms. As there are specific requirements for the program it is not sufficient merely to file the general college admission forms. Students are admitted to the program only in the fall semester of each year and applications must be received no later than March 31. After the student has received notification of tentative admission to the program from the Dean of Admissions, and an application 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.

ADVANCEMENT TO CANDIDACY

To be eligible for advancement to candidacy and admission to the second year of the program for this degree, the student must, in addition to holding classified official program with an overall grade point average of 3.0 or higher, and otherwise comply with the regulations of the Graduate Division 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 the student must complete an approved program of studies consisting of at least 56 units of approved upper division and 200-numbered courses, to include:

a. City Planning 261, Urban Design and Land Use Planning Studio (6)
   City Planning 266A, Seminar in Urban Planning (3)
   City Planning 266B, Seminar in Urban Planning Methodologies (3)
   City Planning 266C, Seminar in Urban Planning Implementation (3)
   City Planning 266D, Seminar in Urban Planning Theory (3)

b. Public Administration 148, The Metropolitan Area (3)
   Public Administration 160, Principles of Planning (3)

c. Twelve units of 200-numbered courses in planning administration, history, readings and research.

d. City Planning 296, Internship in Urban Planning (3-6)

e. Electives to complete the program will be selected with the assistance of the adviser, from appropriate courses in anthropology, art, economics, geography, political science, social work, sociology, and other disciplines deemed appropriate.

At least 30 units must be completed in residence at San Diego State, and at least 24 units of program courses shall be enrolled in and completed 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.
230. Seminar in Public Financial Management (3)
Prerequisite: Public Administration 162.
Problems in the administration and budgeting of public revenues.

240. Seminar in Public Administration (3)
Maximum credit six units applicable to a master's degree.

241. Seminar in Public Personnel Administration (3)
Prerequisite: Public Administration 144.
Analysis of special problems of public service recruitment; recent developments in government pay administration; planning, administration, and evaluation of executive development and other training programs; collective bargaining in government; construction and administration of tests; evaluation of total personnel program.

242. Seminar in Public Administration in Developing Nations (3)
Prerequisite: Public Administration 140.
Selected problems in administration of economic and technical assistance programs; problems of administration in developing areas.

243. Science, Technology, and Public Policy (3)
Prerequisite: Political Science 200, Public Administration 201, or equivalent seminar in another department.
The influence of science and technology on governmental policy-making; scientists as administrators and advisers; governmental policy-making for science and technology; government as a sponsor of research and development.

245. Readings in Public Administration (3) I, II
Prerequisite: Political Science 200, Public Administration 201, or six graduate units of political science.
Selected readings in the literature of public administration.

249. Seminar in Administrative Economics (3)
Prerequisite: Public Administration 140.
Selected problems in administration, organization, and processes of foreign and international governments. Maximum credit six units applicable to a master's degree.

250. Management of Urban Governments (3) I, II
Selected problems in the management of urban governments. Maximum credit six units applicable to a master's degree.

255. The Metropolitan Area (3) I, II
Prerequisite: Public Administration 143, 148, or 150.
Selected problems in the administration of urban areas. Maximum credit six units applicable to a master's degree.

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)

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)
Prerequisite: 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 of urban development and of the field of urban planning.

CP 265. Seminar in Planning Administration (3)
The administration of the planning function in urban government. Relationships between the planner and public and private agencies, governmental departments and elected officials. Case studies and problems.

CP 266A. Seminar in Urban Planning (3)
Prerequisite: Public Administration 160.
Introductory seminar to the Master of City Planning Program, focusing upon the planner's perspective of urban problems and goal formation. (Formerly numbered City Planning 266.)

CP 266B. Seminar in Urban Planning Methodologies (3)
Prerequisite: City Planning 266A.
Procedures and analytical techniques in urban planning.

CP 266C. Seminar in Urban Planning Implementation (3)
Prerequisite: City Planning 266B.
Analysis of the content and function of zoning, subdivision regulation, codes, capital budgeting, urban renewal, model cities, and other implementation methods and programs.

CP 266D. Seminar in Urban Planning Theory (3)
Prerequisite: City Planning 266C.
Alternative theories of planning and organization of the planning function. Emphasis on conceptual foundations, relationship to governmental structure, decision-making, and ideological and ethical orientations.

CP 267. Readings in Urban Planning (3)
Selected topics in urban planning. Maximum credit six units applicable to a master's degree.

CP 268. Internship in Urban Planning (3-6)
Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences. (Formerly numbered City Planning 293.)

CP 297. Research in Urban Planning (3)
Prerequisite: Consent of Director of City Planning Program.
Research in one of the areas of urban planning. Maximum credit six units applicable to a master's degree.

CP 298. Special Study (1-3)
Prerequisite: Consent of staff.
To be arranged with Director of City Planning and instructor. Individual study. Maximum credit six units.
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. An undergraduate major in Russian, including 24 upper division units, must have been completed, at least six units of which must have been in a survey course in Russian literature.

ADVANCEMENT TO CANDIDACY

In addition to meeting the requirements for advancement to candidacy as described in Part Three of this 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

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 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: Vytaas Dukas, Ph.D.
Graduate Adviser: Vytaas Dukas
Credential Adviser: Vytaas Dukas
Professor: Vytaas Dukas, Ph.D.
Associate Professor: L. A. Kozlik, Ph.D.
Assistant Professors: Renate Bialy, M. A.; L. E. Ferzer, Ph.D.

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)
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.

231. 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.
Purpose 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 15 units of upper division courses in the social science field in which they plan to concentrate. For a concentration in economics, the student must have completed at least 15 units of upper division courses in economics, including Economics 100A-100B, Intermediate Economic Theory, or their equivalents, and nine units of upper division courses in economics or related fields as approved by the graduate adviser. (A course in statistics, either upper division or lower division, is required.) For a concentration in geography, the student must have completed Geography 1 and 2 and 15 units of upper division courses in geography including 1 unit from each of the following groups: (1) 100-109; (2) 110-111 and 150-179; (3) 119-139; (4) 180-185. For a concentration in sociology, the student must have completed Sociology 1 and 10, or their equivalents, and 15 units of upper division sociology courses including Sociology 101, Modern Social Theory. (A course in statistics, either upper division or lower division, is required.)

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.
3. Course 299, Thesis, is required in all concentrations. In addition the following courses are required in the concentrations specified:
   - Geography: Geog. 210, History of Geography (3)
   - Political Science: Pol. Sci. 200, Seminar in the Scope and Method of Political Science (3)

FACULTY

Graduate Advisers:
  - Anthropology: L. L. Leach
  - Economics: D. C. Bridenstine
  - Geography: E. A. Keen
  - Political Science: H. J. Lewin
  - Sociology: D. S. Milne

Faculty members in the Departments of Anthropology, Economics, Geography, Political Science, and Sociology are listed in the appropriate sections of this bulletin.
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 its Accreditation Commission in June, 1966.

The School of Social Work offers accelerated studies leading to the Master of Science in Social Work degree. The curriculum was approved in January, 1969 on an experimental basis for a four-year period effective 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 the graduate student 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 will permit the development and maintenance of professional relationships and professional responsibilities; to develop a self-awareness to the professional practice; 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 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 context; the nature and causes of impaired social and emotional functioning 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 of the profession in social work practice; the first-year sequence is second year, there may be a concentration on intervention with individuals, appropriate attention to the enabling methods of research and administration. The objectives of which include: a beginning mastery of professional practice; the disciplined use of "self" to give professional social work goals; broadening and deepening knowledge of the function of concern to social work.

4. Field Instruction. Practice carried on in field settings under educational supervision. Field settings are designed to develop the student's ability to carry out the function of field practice and the understanding of social work practice in a variety of fields and circumstances.

APPLICATION FOR ADMISSION

In seeking tentative admission to the graduate program leading to the Master of Social Work or the Master of Science in Social Work degree from the School of Social Work, requesting appropriate attention to the enabling methods of research and administration. Students should 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 Application Test and the filing of an official program) are stated in Part Three of this bulletin and the filing of an official program) are stated in Part Three of this bulletin and the filing of an official program) are stated in Part Three of this bulletin.

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 approved 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. To be eligible for advancement to candidacy and for admission to the second year of the program for this degree, the student must, in addition to holding classified graduate standing:

1. Have earned a 3.0 (B) grade point average 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 be 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 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 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.

**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>
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<th>Sequence</th>
<th>Semester</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Total units</th>
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<tr>
<td>Social Welfare Policy and Services</td>
<td>SW200 (2)</td>
<td>SW201 (2)</td>
<td>SW202 (2)</td>
<td>SW203 (4)</td>
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<tr>
<td>Human Behavior and Social Environment</td>
<td>SW204 (4)</td>
<td>SW225 (2)</td>
<td>SW226 (2)</td>
<td>SW231 (2)</td>
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<td>Social Work Practice</td>
<td>SW210 (2)</td>
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<td>SW212 (2)</td>
<td>SW213 (2)</td>
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<tr>
<td>Field Instruction</td>
<td>SW230 (4)</td>
<td>SW231 (4)</td>
<td>SW232 (2)</td>
<td>SW233 (2)</td>
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<tr>
<td>Research</td>
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<td>SW290B (2)</td>
<td>SW297A (2)</td>
<td>SW297B (2)</td>
<td>(8)</td>
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<tr>
<td>Elective Seminar</td>
<td>SW291 (2–3)</td>
<td>SW291 (2–3)</td>
<td>SW291 (2–3)</td>
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<td>(15)</td>
<td>(13–14)</td>
<td>(56–58)</td>
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</table>

**MASTER OF SCIENCE DEGREE IN SOCIAL WORK**

**ADVANCEMENT TO CANDIDACY**

Students who have been admitted to the School of Social Work and have enrolled in the Master of Science program for the fall semester will meet with their advisers during the first half of the Spring semester following to discuss the advisability of undertaking the balance of the calendar year professional degree program.

To be eligible for advancement to candidacy and for admission to the summer session of the Master of Science degree program, the student must, in addition to holding classified graduate standing:

1. Have earned a 3.0 (B) grade point average on all courses required in the first semester 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 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 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.

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>
<th>I</th>
<th>II</th>
<th>Summer (12 weeks)</th>
<th>Total units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Welfare Policy and Services</td>
<td>SW200 (2)</td>
<td>SW201 (2)</td>
<td>SW202 (2)</td>
<td>SW203 (4)</td>
<td>(8)</td>
</tr>
<tr>
<td>Human Behavior and Social Environment</td>
<td>SW221 (2)</td>
<td>SW222 (2)</td>
<td>SW223 (2)</td>
<td>SW224 (2)</td>
<td>(8)</td>
</tr>
<tr>
<td>Social Work Practice</td>
<td>SW225 (2)</td>
<td>SW226 (2)</td>
<td>SW231 (2)</td>
<td>SW232 (2)</td>
<td>(8)</td>
</tr>
<tr>
<td>Field Instruction</td>
<td>SW230 (4)</td>
<td>SW231 (4)</td>
<td>SW232 (2)</td>
<td>SW233 (2)</td>
<td>(8)</td>
</tr>
<tr>
<td>Research</td>
<td>SW290A (4)</td>
<td>SW290B (2)</td>
<td>SW297A (2)</td>
<td>SW297B (2)</td>
<td>(8)</td>
</tr>
<tr>
<td>Elective Seminar</td>
<td>SW291 (2–3)</td>
<td>SW291 (2–3)</td>
<td>SW291 (2–3)</td>
<td>SW291 (2–3)</td>
<td>(4-6)</td>
</tr>
<tr>
<td>Total units</td>
<td>(14)</td>
<td>(14–15)</td>
<td>(15)</td>
<td>(13–14)</td>
<td>(56–58)</td>
</tr>
</tbody>
</table>

*Recommended but not required. May be taken instead of 291.

**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 the curriculum, 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 the School of Social Work and the Graduate Council. 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 graduate standing. At the end of the first semester's work, the faculty of the School of Social Work shall recommend to the Dean of 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

Acting Dean, School of Social Work: I. B. Tebor, Ph.D.

Associate Deans, School of Social Work: Gideon Horowitz, Ph.D.; D. M. Pilcher, M.S.W.


Assistant Professors: D. M. Anderson, M.S.W.; Kamilla U. Bally, M.S.W.; R. M. Rister, M.S.W.; Martha Fort, M.S.W.; R. W. Griffin, Ph.D.;沥青 Herman, M.A.; Saundra Johnson, M.S.W.; Marion J. Kohn, M.S.; Margaret M. Pappas, M.S.W.; Wilhelmina Perry, M.S.W.; D. M. Smith, M.S.W.; Elizabeth V. Watson, M.S.W.

Lecturers: L. Ruth Koon, M.S.W.; Emily A. Lucius, M.S.S.; Paul Raymer, M.S.W.; Maria A. Sardinas, M.S.W.; Selkie Seargeant, M.S.W.; Georgia M. Travis, M.A.

Appointments Under Grants from Outside Funds:

Assistant Professor: Marta Schlatter, M.S.S.

Lecturers: Inez M. Aikens, M. A.; E. F. Anderson, M.S.W.; J. L. Brewer, M.S.W.; Kelley, D.S.W.; Ruth M. Kukkonen, M.S.W.; R. W. Peer, M.S.W.; Markman, M.A.

COURSE GROUPINGS

Social Work Practice: Fundamentals of Practice: 230, 231; Field Instruction: 250, 251

Social Work Practice: Intervention with Individuals and Groups: 232, 233; Field Instruction: 252, 253

Social Work Practice: Intervention with Organizations and Communities: 234, 235; Field Instruction: 255, 256

Social Work Practice integrated with field instruction for M.S.S.W. program: 236, 237, 238

GRADUATE COURSES

Prerequisite for enrollment in all graduate courses: admission to the School of Social Work.

200. Social Welfare Policy and Services I (2)

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 (2)

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 (2)

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 (2)

Prerequisite: Social Work 202

Analysis of existing or projected social welfare programs or service.

205. Social Work Administration I (2)

Prerequisite: Social Work 202 or consent of the Dean

Social work administration as an aspect of all social work practice. Nature of social work administration involving board and staff participation in determining goals and in planning programming and management operations to achieve goals. Administrative organization, interagency policy and control, management processes.

220. Human Behavior and Social Environment I (4)

Theoretical perspectives on men 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 (2)

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 (2)

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 community. Attention is given to social work objectives, principles and skills. Attention is given to social work objectives, principles and skills.

231. Social Work Practice II (2)

Prerequisites: Social Work 230 and concurrent registration in Social Work 251

Principles of social work practice with individuals, families, groups, and community. Attention is given to social work objectives, principles and skills. Attention is given to social work objectives, principles and skills.

232. Social Work Practice III (2)

Prerequisites: Social Work 231 and concurrent registration in Social Work 252

Analysis of social work intervention to motivate individuals, families, and groups. The implications for practice of the physical, toward change and problem solving. The interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and emotional factors influencing people, and their interaction with social and economic groups of which they are a part.
233. Social Work Practice IV (2)
Designed to offer opportunity for integration and application of the student’s knowledge of an array of problem-solving methods in social work. Case material focuses on the specific content relevant to selected models of social problems experienced by individuals, families, and groups.

234. Social Work Practice V (2)
Prerequisites: Social Work 231 and concurrent registration in Social Work 255.
Examination of applications of major theories of social change in organized behavior to improve the social environment. Use of selected 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 (2)
Prerequisites: Social Work 234 and concurrent registration in Social Work 256.
Exploration of collaborative social work role with other professional roles in planned institutional 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 (8)
Prerequisite: Social Work 237.
Continuation of Social Work Practice VIII with emphasis on the further development of skills with individuals, families, groups, organizations and communities.

250. Field Instruction I (4)
Prerequisite: Concurrent registration in Social Work 210.
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 250 and concurrent registration in Social Work 231.
Continuation of field instruction initiated in Social Work 250. Opportunities are provided for the application of social study and social problem analysis to experience with interactional and small group processes.

252. Field Instruction III: Individuals, Families and Groups (4-5)
Prerequisites: Social Work 251 and concurrent registration in Social Work 232.
Field instruction in a social work setting providing a concentration on social work practice aimed at achieving change in or on behalf of individuals, families, and groups. Practice under educational direction at an advanced level.

253. Field Instruction IV: Individuals, Families and Groups (4-5)
Prerequisites: Social Work 252 and concurrent registration in Social Work 233.
Continuation of Field Instruction III at an advanced level. Emphasis is placed on the use of diverse problem-solving strategies and resources in social work.

255. Field Instruction V: Organizations and Communities (4-5)
Prerequisites: Social Work 254 and concurrent registration in Social Work 234.
Field instruction in a social work setting providing a concentration on social work practice aimed at achieving changes in social policies, organizations, and communities. Practice under educational direction at an advanced level.

256. Field Instruction VI: Organizations and Communities (4-5)
Prerequisites: Social Work 255 and concurrent registration in Social Work 235.
Continuation of Field Instruction V at an advanced level. Emphasis is placed on the use of diverse social work strategies and resources in social planning or community development.

260. Supervision for Field Instructors I (2)
Prerequisite: Consent of the Dean of the School of Social Work.
Designed for field instructors who will be teaching graduate students in selected field agencies. Objectives, content, and methods of instruction related to the administrative and educational functions of the field instructor in the education of social workers.

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.

Prerequisite: Advancement to candidacy or consent of Dean.
Current developments and issues in contemporary society and their meaning for social work practice. Maximum credit four units applicable on a master’s degree.

279A-279B. 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.

280. 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 MASTER OF ARTS PROGRAMS

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 and an oral examination on the thesis are 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: C. Dale Johnson, Ph.D.
Graduate Adviser: M. J. Daniels


Associate Professors: M. M. El-Assal, Ph.D.; T. L. Gillette, Ph.D.; R. W. Winslow, Ph.D.


COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SOCIOLOGY

UPPER DIVISION COURSES

100. History of Social Thought (3)
101. Contemporary Sociological Theories (3)
102. Contemporary Social Theory (3)
103. Contemporary Social Theory (3)
104. Social Disorganization (3)
105. Current Social Issues (3)
106. Sociology of Conflict (3)
107. Criminology and Penology (3)
108. Juvenile Delinquency (3)
109. Industrial Sociology (3)
110. Sociology of Occupations and Professions (3)
111. Sociology of Mental Illness (3)
112. Social Stratification (3)
113. Minority Group Relations (3)
114. Medical Sociology (3)
115. Formal Organization (3)
116. Sociology of the Family (3)
117. Political Sociology (3)
118. Sociology of Religion (3)
119. Sociology of Education (3)
120. Sociology of Mass Communication (3)
121. Collective Behavior (3)
122. Sociology of Social Movements (3)
123. Urban Sociology (3)
124. Quantitative Methods in Social Research (3)
125. Methods of Social Research (3)
126. Investigation and Report (3)

200. Seminar in Social Theory (3)
Prerequisites: Sociology 101 and 164.

205. Directed Readings in Social Theory (3)
Prerequisites: Sociology 101 and 164.

210. Seminar in Social Organization (3)
Prerequisites: Sociology 110 and 164.

215. Directed Readings in Social Organization (3)
Prerequisites: Sociology 110 and 164.

220. Seminar in Social Organization (3)
Prerequisites: Sociology 122 and 164.

225. Directed Readings in Social Organization (3)
Prerequisites: Sociology 122 and 164.

230. Seminar in Social Institutions (3)
Prerequisites: Sociology 122 and 164.

235. Directed Readings in Social Institutions (3)
Prerequisites: Sociology 122 and 164.

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: C. Dale Johnson, Ph.D.
Graduate Adviser: M. J. Daniels


Associate Professors: M. M. El-Assal, Ph.D.; T. L. Gillette, Ph.D.; R. W. Winslow, Ph.D.

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 to 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 to a master's degree.

275. Directed Readings in Population and Demography (3)
Prerequisites: Sociology 164 and 150 or 151.
Selected readings providing comprehensive coverage of the fields of population and demography.

280. 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.

285. Research (3)
Prerequisite: Sociology 164.
Independent investigation of special topics.

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

293. 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 SPANISH

#### UPPER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>104A-104B</td>
<td>Spanish-American Literature (3-3)</td>
</tr>
<tr>
<td>105A-105B</td>
<td>Modern Spanish Drama (3)</td>
</tr>
<tr>
<td>106A-106B</td>
<td>Mexican Literature (3-3)</td>
</tr>
<tr>
<td>107</td>
<td>Caribbean Area Countries Literature (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>110</td>
<td>Nineteenth-Century Spanish Novel and Short Story (3)</td>
</tr>
<tr>
<td>111</td>
<td>Twentieth-Century Spanish Novel and Short Story (3)</td>
</tr>
<tr>
<td>112</td>
<td>Contemporary Spanish Novel (3)</td>
</tr>
<tr>
<td>130</td>
<td>Poetry of the Spanish Golden Age (3)</td>
</tr>
<tr>
<td>131</td>
<td>Prose of the Spanish Golden Age (3)</td>
</tr>
<tr>
<td>132</td>
<td>Drama of the Spanish Golden Age (3)</td>
</tr>
<tr>
<td>149</td>
<td>Spanish Linguistics (3)</td>
</tr>
<tr>
<td>150</td>
<td>Phonetics and Phonemics (3)</td>
</tr>
<tr>
<td>170</td>
<td>Spanish-American Poetry (3)</td>
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<tr>
<td>171</td>
<td>Spanish-American Short Story (3)</td>
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<tr>
<td>172</td>
<td>Spanish-American Theatre (3)</td>
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<tr>
<td>180</td>
<td>Modern Spanish Poetry (3)</td>
</tr>
<tr>
<td>134</td>
<td>Portuguese Literature (3)</td>
</tr>
<tr>
<td>135</td>
<td>Brazilian Literature (3)</td>
</tr>
</tbody>
</table>

**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

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 San Martin 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.

**210. Contemporary Spanish-American Prose Fiction (3)**
- The principal writers of prose fiction in Spanish America from the mid-thirties to today.

**220. Seminar in Spanish Golden Age Literature (3)**
- A representative author, a genre or movement of the Spanish Golden Age.
- Maximum credit six units applicable on a master's degree.

**230. Seminar in 19th Century Spanish Literature (3)**
- A representative author, a genre or movement of the 19th century in Spain.
- Maximum credit six units applicable on a master's degree.

**240. Seminar in 20th Century Spanish Literature (3)**
- A representative author, a genre or movement of the 20th century in Spain.
- Maximum credit six units applicable on a master's degree.

**250. Seminar in Spanish-American Literature (3)**
- A genre or movement of Spanish America.
- Maximum credit six units applicable on a master's degree.

**255. Seminar in Spanish-American Culture and Thought (3)**
- Works of representative authors of Spanish America.
- Maximum credit six units applicable on a master's degree.

**260. Seminar in Medieval Spanish Literature (3)**
- A representative author of the medieval period.
- Maximum credit six units applicable on a master's degree.

**270. Applied Spanish Linguistics for Teachers (3)**
- Prerequisite: Spanish 149 or 150.
- The application of linguistic theory to the teaching of Spanish at the secondary and college levels.

**290. Research and Bibliography (3)**
- A genre or movement of the Spanish-American literature.
- The collection and collation of bibliographic material, and the proper presentation of the results of such investigation.
- Recommended for the first semester of graduate work.

**294. Comprehensive Reading and Survey Course (3)**
- Prerequisite: Consent of graduate adviser and department chairman.
- A study of important movements, authors, and works in Spanish literature. Designed to supplement the reading done in previous courses, in preparation for the comprehensive examination in literature for candidates for the Master of Arts degree.

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

**299. Thesis (3)**
- Prerequisite: An officially appointed thesis committee and advancement to candidacy.
- Preparation of a project or thesis for the master's degree.
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. 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. 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 Speech are required to have attained classified graduate standing and to have completed Speech Communication 200.

SPECIFIC REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN SPEECH

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 18 units in 200-numbered courses. Speech Communication 200, Research and Bibliography, and Speech Communication 299, 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 Advisor: J. W. Ackley
Associate Professor: L. A. Samovar, Ph.D.
Assistant Professors: F. C. Sanders, M.A.; C. R. Smith, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPEECH

UPPER DIVISION COURSES

Speech Communication

108. Advanced Interpretation (3) 191. Advanced Public Speaking (3)
130. Semantics (3) 192A. Oral Persuasion (3)
135. Theories of Human Communication (3) 192B. Mass Persuasion (3)
162. Advanced Argumentation (3) 193. History of Public Address (3)
190. Rhetorical Theory (3) 195. Selected Topics in Speech Communication (3)
191. Group Communication (3)

* Not more than three units of Speech Communication 198 are acceptable on master's degree programs in Speech.

GRADUATE COURSES

Speech Communication

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 and practical methods; critical analysis of research and practical problems in research.

208. Seminar in Oral Interpretation (3)
   Prerequisite: Speech Communication 108. Study of oral interpretation of various forms of literature. Aesthetic discipline applied to oral interpretation of literature. May be repeated with new content for a maximum of six units. (Formerly numbered Speech Arts 208.)

235. Seminar in Communication Theory (3)
   Prerequisite: Speech Communication 135. Theories of communication models, codes, perception and effects. (Formerly numbered Speech Arts 235.)

262. Seminar in Argumentation (3)
   Prerequisite: Speech Communication 162. Significance of topics in argumentation: the formulation of problems for argument; problem-solving; the role of evidence; fallacies. (Formerly numbered Speech Arts 262.)

282. Seminar: Contemporary American Public Address (3)
   Prerequisites: Speech Communication 190 and 192A. Examination of recent American public address leaders and political leaders. May be repeated with new content for a maximum of six units. (Formerly numbered Speech Arts 282.)

290. Experimental Procedures in Speech Communication (3)
   Prerequisite: Credit or concurrent registration in Speech Communication 290. Examination of appropriate experimental procedures and evaluation of research methods; special problems in research design. (Formerly numbered Speech Arts 290.)

291. Seminar in Group Discussion Theory (3)
   Prerequisite: Speech Communication 191. Study of descriptive and experimental literature on group discussion covering such topics as interaction, leadership, and means of evaluation. (Formerly numbered Speech Arts 291.)

293. Seminar: Greek and Roman Public Address (3)
   Prerequisites: Speech Communication 190 and 192A. Examination of recent ancient Greek and Roman public address leaders. May be repeated with new content for a maximum of six units. (Formerly numbered Speech Arts 293.)

294. Seminar: 18th Century British Public Address (3)
   Prerequisites: Speech Communication 190 and 192B. Examination of recent 18th century British public address leaders. May be repeated with new content for a maximum of six units. (Formerly numbered Speech Arts 294.)

295. Seminar: American Public Address—1700–1900 (3)
   Prerequisites: Speech Communication 190 and 192B. Examination of recent American public address leaders. May be repeated with new content for a maximum of six units. (Formerly numbered Speech Arts 295.)

298. Special Study (1-3)
   Individual study. Six units maximum credit.
   Individual study. Six units maximum credit.
   Individual study. Six units maximum credit.
   Individual study. Six units maximum credit.

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 II), 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 practicing and observation experiences include the Sunshine School (cerebral palsy), the Home of Guiding Hands (mental retardation), Lindbergh and Lafayette Schools (deaf education), the Head Start programs (disadvantaged), and the University of California Medical School.

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 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- or numbered courses. Speech Pathology and Audiology 200, Research and Bibliography, and Speech Pathology 299, Thesis, are required courses.

FACULTY

Chairman, Department of Speech Pathology and Audiology: Sue W. Earnest, Ph.D.
Graduate Adviser: A. C. Nichols
Credentialed Adviser: Speech and Hearing Specialist, Plan II: Sue W. Earnest
Professors: Sue W. Earnest, Ph.D.; P. L. Pfaff, Ph.D.
 Associate Professors: A. C. Nichols, Ph.D., R. M. Riedman, Ph.D.; E. L. Thile, Ph.D.

COURSES ACCEPTABLE ON MASTER'S DEGREE PROGRAMS IN SPEECH PATHOLOGY AND AUDIOLOGY

UPPER DIVISION COURSES

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<td>128</td>
<td>Diagnostic Methods in Speech Pathology (3)</td>
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<td>143</td>
<td>Hearing Amplification (3)</td>
</tr>
<tr>
<td>198</td>
<td>Selected Topics in Speech Pathology and Audiology (1-3)</td>
</tr>
</tbody>
</table>

# 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)
Prerequisites: Speech Pathology and Audiology 203.
Principles of relationship of basic sound of speech to 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, 123, and 125.
Principles of evaluation of aphasia, familiarity with diagnostic tools, theories of aphasia and therapy for persons with disorders of symbolization: i.e. adult and congenital aphasia. Evaluation of current research in aphasia studies. (Formerly numbered Speech Arts 271.)

203. Problems of Cerebral Palsy (3)
Prerequisites: Speech Pathology and Audiology 121, 123, and 124.
Principles of evaluation, theories of treatment and therapy for persons with speech disorders in cerebral palsy. Evaluation of current research in cerebral palsy. (Formerly numbered Speech Arts 272.)

204. Problems of Cleft Palate (3)
Prerequisites: Speech Pathology and Audiology 121, 123, and 124.
Principles of diagnosis and therapy for persons with cleft palate speech problems. Evaluation of current research in this area. (Formerly numbered Speech Arts 273.)

205. Problems of Stuttering (3)
Prerequisites: Speech Pathology and Audiology 121, 122, and 125.
Principles of evaluation of theories, individual and group therapy for child and adult stutterer, evaluation of current research in this area. (Formerly numbered Speech Arts 274.)

206. Problems of Voice Pathology (3)
Prerequisites: Speech Pathology and Audiology 121, 123, 124, and 125.
Structural, medical and functional voice problems. Diagnosis, theories and therapy for vocal problems. Evaluation of current research. (Formerly numbered Speech Arts 275.)

226. Advanced Field Work in Clinical Practice in Speech Pathology (1 or 2) I, II, S
Prerequisites: Speech Pathology and Audiology 124 and 125.
Supervised work with representative advanced speech cases such as stuttering. Supervised work with representative advanced speech cases such as stuttering. (Formerly numbered Speech Arts 280A.)

228. Advanced Diagnostic Methods in Speech Therapy (3)
Prerequisites: Speech Pathology and Audiology 126, 127, and 128.
Principles of speech therapy. Diagnosis of individuals with complicated speech problems as brain injury, congenital and acquired aphasia, adult aphasia, hearing loss, laryngeal paralysis, congenital malformations. Evaluation of current research. (Formerly numbered Speech Arts 279.)

240. Medical Audiology (3)
Prerequisites: Speech Pathology and Audiology 145 and 244.
Examination of medical setting and medical significant hearing pathologies. (Formerly numbered Speech Arts 278.)
244. Audiology (3) I
Prerequisite: Speech Pathology and Audiology 141.
Psychophysical concepts underlying clinical audiology. Relationship of audiologic test results to the conditions under which they were obtained. (Formerly numbered Speech Arts 177.)

250. Seminar in Audiology (3)
Prerequisite: Speech Pathology and Audiology 244.
Major research in clinical audiology. Audiologic techniques used in differential diagnosis. Maximum credit six units applicable on a master's degree. (Formerly numbered Speech Arts 277.)

255. Advanced Field Work in Clinical Practice in Hearing Problems (1 or 2) I, II, S
Prerequisites: Speech Pathology and Audiology 140, 151, and 244.
Advanced casework in hearing evaluation, record keeping, research problems, and therapy (auditory training, lipreading, speech correction for hard of hearing or deaf, and language building). Maximum credit four units. Maximum credit four units of 226 and 255 applicable to a master's degree. (Formerly numbered Speech Arts 280B.)

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

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

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. Facilities now in use include a two-studio television production center, a three-control room radio station, and a film production center. The Department of Telecommunications and Film participates in the operation of KEBS-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 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: D. G. Wylie
Professors: K. K. Jones, M.A.; R. E. Lee, M.A.
Associate Professors: R. P. Madsen, Ph.D.; D. G. Wylie, Ph.D.
COURSES ACCEPTABLE ON MASTER’S DEGREE PROGRAMS IN RADIO AND TELEVISION

**UPPER DIVISION COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Broadcast Management</td>
<td>3</td>
</tr>
<tr>
<td>105</td>
<td>Regulation of Broadcasting</td>
<td>3</td>
</tr>
<tr>
<td>108</td>
<td>International Broadcasting</td>
<td>3</td>
</tr>
<tr>
<td>110</td>
<td>Writing and Producing for Broadcasting</td>
<td>3</td>
</tr>
<tr>
<td>130</td>
<td>Radio Programming</td>
<td>3</td>
</tr>
<tr>
<td>150</td>
<td>Lighting for Television</td>
<td>3</td>
</tr>
<tr>
<td>156</td>
<td>Advanced Lighting and Staging for Television</td>
<td>4</td>
</tr>
<tr>
<td>162</td>
<td>Film Techniques</td>
<td>3</td>
</tr>
<tr>
<td>163</td>
<td>International Cinema</td>
<td>3</td>
</tr>
<tr>
<td>165</td>
<td>Animated Film Techniques</td>
<td>3</td>
</tr>
<tr>
<td>168</td>
<td>Film Production</td>
<td>4</td>
</tr>
<tr>
<td>170</td>
<td>Educational Broadcasting</td>
<td>3</td>
</tr>
<tr>
<td>180</td>
<td>Directing Television and Film Drama</td>
<td>3</td>
</tr>
<tr>
<td>181</td>
<td>Acting for TV and Film</td>
<td>3</td>
</tr>
<tr>
<td>183</td>
<td>Advanced Programming and Development for Television</td>
<td>4</td>
</tr>
<tr>
<td>184</td>
<td>Advanced Television Directing</td>
<td>3</td>
</tr>
<tr>
<td>198</td>
<td>Selected Topics in Telecommunications and Film</td>
<td>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.

**GRADUATE COURSES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Research and Bibliography</td>
<td>3</td>
</tr>
<tr>
<td>201</td>
<td>Seminar in Broadcast Management</td>
<td>3</td>
</tr>
<tr>
<td>203</td>
<td>Seminar in History of Broadcasting</td>
<td>3</td>
</tr>
<tr>
<td>205</td>
<td>Mass Communications Research</td>
<td>3</td>
</tr>
<tr>
<td>210</td>
<td>Seminar in Writing for Broadcast and Film</td>
<td>3</td>
</tr>
<tr>
<td>212</td>
<td>Criticism of Broadcasting and Cinema</td>
<td>3</td>
</tr>
<tr>
<td>218</td>
<td>Directing the Dramatic Film</td>
<td>3</td>
</tr>
</tbody>
</table>

270. Seminar in Educational Broadcasting (3)
Prerequisite: The equivalent of an undergraduate major in telecommunications and film.
Evaluative uses of electronic media. Use of telecommunications in classrooms and school systems. Relationship of noncommercial radio and television (Public Broadcasting), and 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 286.)

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 elements of mass communications media, formats, presentations, and systems on individuals and groups.

284. Seminar in Programming and Production (3)
Prerequisite: The equivalent of an undergraduate major in mass communications and film.
Theory and analysis of programming and production of broadcasting. (Formerly numbered Speech Arts 284.)

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

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

LIBRARY SCIENCE

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 bibliographical and reference materials in the subject fields of the sciences, with study of typical problems arising in reference service in these subjects.

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.

RECREATION

204. Problems in Recreation (3) (Alternate years)
(Same course as Physical Education 204)
A survey of current problems facing the recreation profession, a review of the literature, discussion of trends and observation of school situations together with the analysis and evaluation of actual problems. Written reports are required.

205. Park Management (3) (Alternate years)
Prerequisite: Recreation 165.

260. Recreation Administration and Supervision (3) (Alternate years)
Prerequisites: Recreation 165 and 184.
Methods, techniques and evaluation systems used by chief administrators, department heads and supervisors in both public and private agencies.

261. Seminar in Specialized Facilities (3)
Prerequisite: Recreation 175.
Management methods in planning, developing and operating specialized recreation facilities such as golf courses, beaches and marinas, centers for the handicapped, sports arenas, and others. May be repeated once in a different area of specialization.

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